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**British Older Adult Gambling Behaviour; Evaluating
Psychological and Physical Health as Predictive Risk for
Problem Gambling**

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Statement of Originality

The findings in this thesis are original and independent. No portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification at this or any other university or other institute of learning.

Abstract

Lister and Nower (2013) acknowledged that despite increasing gambling participation in older adult populations there has been little systematic research investigating the nature and course of problem gambling in this population. Furthermore, little is known about problem gambling in older adults, with specific regard to etiology (Medeiros et al., 2015). It is proposed that currently unknown discrete or unique risk factors may predispose certain subgroups (e.g based on etiology, age, ethnicity) of older adults to develop gambling problems as compared to adults under the age of 65 years. Therefore, it was relevant to explore British older adult gambling behaviour to develop an understanding of gambling behaviour and experiences of British older adults. Fundamentally, this may generate clearer understanding of the motivation behind the increasing participation; and, in particular, potentially highlight risk factors that promote and sustain problem gambling. Currently, there is limited literature available to explore motivation and older adult gambling behaviour in a British context specifically, therefore it is not possible currently to identify cognitive and behavioural gambling patterns of British older adults with any confidence. The objective of this research programme was to build knowledge and understanding of British older adult gambling behaviour with specific emphasis on evaluating psychological and age-related physical health differences as predictive risk factors for problem gambling. The study employed a mixed methods approach for data collection and analysis. Employing grounded theory, the emergent theoretical framework in Study One provided four theoretical propositions in relation to understanding gambling motivation across British older adults. The core category to emerge proposed that British older adults gamble as a mechanism to alleviate distress experienced from psychological, lifestyle and physical changes associated with the ageing process. The theoretical propositions were explored in further studies within the thesis. A cross-sectional survey in

study two sampled a total of 695 British older adult gamblers, non-gamblers and problem gamblers in commercial and non-commercial gambling venues and non-gambling environments. Multiple regression analysis was conducted to investigate risk for problem gambling behaviour, type of gambling activity, participation level (gambling intensity) and psychological health. Using the enter method the model was significant ($R^2 = .441$, $p < .001$), $F(10, 612) = 49.240$ $p < .001$). The strongest predictor was slot participation levels. The direction of Studies One and Two implicated elevated gambling frequency and increased risk for problem gambling in British older adult women. The aim of Study Three was to explore and understand gambling experiences of high frequency older adult female gamblers in Britain. Through an Interpretative Phenomenological Analytical approach, three core themes emerged including that British older adult women gambled to fill voids, for emotional escape and risk of overspending when gambling. Overall the thesis provides detailed understandings of how psychological and physical health factors affect British older adult gambling behaviour. This provides direction for future research to develop further understanding of British older adult problem gambling behaviour, with the long-term goal of informing development of gambling interventions specifically for this population.

Chapter 1

Introduction

1.1 Introducing the research objectives

The United Kingdom (UK) gambling market is worth an estimated £6.1 billion (Gambling Commission, 2013). British and international prevalence studies of gambling consistently report that approximately 75% of adults participate in gambling activities annually (Afifi, Cox, Martens, Sareen, & Enns, 2010; Kessler et al., 2008; Wardle et al., 2011).

Traditionally, gambling is perceived as an irrational behaviour as the ‘house’ usually wins by probability (Abarbanel, 2014). However, despite unfavourable odds, gambling remains a popular recreational activity in Britain, with over 35 million people over the age of 16 gambling in some form (e.g. bingo, lottery, betting, online casino) over the past 12 months (Wardle et al., 2011). The Gambling Commission (2012) reported that UK public perceptions of gambling are positively changing; with past-year gamblers more likely to agree that gambling is conducted fairly and less likely to associate gambling with criminal activity. British citizens state they have a right to gamble if they want to and reject the idea of prohibition (Wardle et al., 2011). Prevalence estimates of pathological or problem gambling in the adult population vary across measurement instruments and definitions but converge on values between 1 % and 7 % (Jackson, Wynne, Dowling, Tomnay, & Thomas, 2010; Kessler et al. 2008; MacLaren, Fugelsang, Harrigan & Dixon, 2011; Wardle et al., 2011). Identifying risk factors that promote and sustain older adult problem gambling will potentially lead to interventions reducing gambling-related harm because it will generate clearer understandings of the different types of risk factors.

1.2 Disordered Gambling: A Review of the Literature

1.2.1 Defining the concept of gambling disorder.

The Diagnostic and Statistical Manual is a manual produced by the American Psychiatric Association (APA) and is a diagnostic manual for mental health disorders. Pathological gambling as a mental health disorder was first introduced in the DSM-III (APA, 1980) as the manual's premise became more systematic, incorporating psychiatric diagnosis rather than a catalogue of mental health disorders. Mitzner, Whelan, and Meyers (2011) stated that pathological gambling diagnosis has evolved since its first entry into the DSM-III. In line with the evolution of gambling research including revisions in diagnostic criteria and terminology being used intermittently such as 'compulsive', 'impulsive' 'problem', 'pathological', and the latest term 'disordered' gambling it is relevant to define the terminology used in this thesis. For the purpose of the present study, the term disordered gambling will be used as an inclusive term to refer to all terms used to describe gambling disorders in the literature, including problem/pathological gambling.

1.2.1. Disordered Gambling

Disordered gambling is defined as persistent and recurrent problematic gambling behaviour characterised by an inability to control gambling, leading to significant psychosocial consequences for the individual, and is diagnosed on the basis of specific criteria as outlined by the DSM-5 (APA, 2013).

Through the first half of the 20th century, pathological gambling was morally viewed as a vice for which the gambler is entirely responsible although this changed with the ascendancy of a medical perspective, predominantly in 1980 (Ferentzy & Turner, 2012). Pathological gambling was primarily identified as a mental disorder of ‘impulse control’ in the DSM-III (APA, 1980). The DSM-IV (APA, 1994) classified pathological gambling as an ‘impulse control disorder’ where persistent gambling behaviour caused significant disruption to the individual’s functioning (social, familial, occupational and financial situations). Gambling disorder has currently joined substance-related addictions in a renamed group called “Addiction and Related Disorders” (APA, 2013). Gambling Disorder is unique among the addictive syndromes in the DSM-5 in that there is no exogenous pharmacological agent responsible for the atypical brain function and behaviour of problem gamblers (APA, 2013).

As a positive consequence of this reclassification, there may be a substantial increase in studies of gambling disorder from a variety of perspectives, such as, an examination of personality correlates of disordered gambling which are issues predominantly researched independently (Miller et al., 2013). Other changes include the lowering of the pathological gambling threshold to the endorsement of 4 symptoms (instead of 5), with the removal of the ‘illegal acts’ criterion.

1.2.2 Disordered Gambling Diagnostic Criteria

The rationale for a reclassification were identified as: (1) the inappropriateness of the label ‘Impulse Control Disorder’ because its definition is applicable to the description of many psychological problems furthermore not specifying the nature of the disorder, (2)

behavioural addictions, such as gambling disorder and other substance addictions, have commonalities in their phenotypes and the treatment strategies used, justifying their grouping, and (3) the high co-occurrence of substance use and pathological gambling (Holden, 2010; Mitzner, Whelan & Meyers, 2011). Reclassification highlights that parallels between compulsive behaviour and addiction have been drawn closer together. This appears normative given that gambling and other addictive disorders are similar, except for use of terminology and the addition of chasing losses (APA, 1994; 2013).

Petry (2002) stated that pathological gambling has symptoms that resemble substance use disorders. Dopamine is heavily implicated in learning processes as it is the neurotransmitter central to reward (Humphrey & Richard, 2013). Dopaminergic activity in substance use disorders and behavioural addictions is similar and provides further rationale for conceptualising these disorders within the same diagnostic framework. Behaviours such as gambling are associated with primary and conditioned behavioural reinforcers eliciting the release of dopamine; consequently, these behaviours can engender similar patterns and pathologies to chemical addiction (Milkman & Sunderwirth, 2010). Furthermore, it was anticipated the DSM 5 (APA, 2013) would reclassify gambling disorder as an addictive disorder based on such similarities (Petry, 2010).

Pathological gambling has evolved from a compulsive disorder in DSM III to an addiction diagnosis, highlighting its dependence based criteria as well as unique behaviour to gambling such as 'chasing' (APA, 1994). It has been observed that pathological gambling shares practically identical criteria to substance-based addictions, specifically in its clinical presentations of comorbidity with mental disorders, association with personality factors, neurotransmitter involvement, genetic transmission, and treatment options (Petry 2006;

Potenza 2006). Furthermore, these co-morbidities have not been observed for other impulse control disorders, suggesting that pathological gambling behaviour is similar to substance use than other disorders of impulse control (e.g. kleptomania and pyromania; Whelan, Steenbergh & Meyers, 2007). Employing addiction models to treat gambling disorder, and observing the parallels between behavioural and chemical addictions, will also help facilitate the identification of their differences. In turn, this approach may provide more opportunities for the study of pathological gambling, which would contribute to its understanding, development, and treatment. As gambling disorder shares many characteristics with substance use disorders, including symptom hallmarks like tolerance, craving and withdrawal symptoms (APA, 2013).

The DSM-5 revisions are: (1) renaming the disorder from Pathological Gambling to Gambling Disorder; (2) reclassifying from impulse control disorders to substance-related and addictive disorders; (3) elimination of the criterion has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling; (4) reducing the threshold for diagnosis from five criteria to four criteria; and (5) specifying that symptoms occur within a 12-month time period. The symptom concerning lying to others does not specify individuals to whom a person has lied such as family or mental health workers, it emphasises that the function of lying is to ‘conceal the extent of involvement with gambling’ (APA, 2013).

A diagnosis of disordered gambling is polythetic in that a vast multitude of symptoms are present across gamblers regarding symptom presentation (Richard & Humphrey, 2013). Petry, Blanco, Jin and Grant (2014) stated that attempting to compare base rates across samples will need to account for changes in classification systems between DSM–IV and

DSM-5 editions, particularly in low-risk epidemiological samples in line with the reduced diagnostic threshold.

1.2.3 Gambling Disorder and Older Adults

Little is known about gambling disorder in older adults specifically regarding etiology (Medeiros et al., 2015). Lister and Nower (2013, p. 350) stated “*despite increasing participation in gambling activities by older adults, there has been little systematic research investigating the nature and course of problem gambling in this population. Therefore, it remains unknown whether discrete or unique risk factors predispose certain subgroups of older adults to develop gambling problems as compared to other adults and younger adults*”.

Medeiros et al., (2015) in a cross-cultural comparison study found the age of onset of gambling and type of gambling activity differing across international comparisons. Therefore, it is important to gain an understanding of the gambling behaviour and experiences of British older adults. DSM-5 stated that gambling disorder leads to clinically significant impairment or distress (APA, 2013). Current research pertains that older adults with gambling disorder show unique clinical presentations (e.g. older age of onset, greater rates of comorbidity), and different motivations compared to younger subgroups (Nower & Blaszczynski, 2008; Pilver et al, 2013).

1.2.4 Problem Gambling

Problem gambling is an interim classification that historically linked the transition between non-pathological gambling and pathological gambling, as prior there was no uniformity

(e.g. no criteria) to identify an in-between stage of problematic gambling behaviour. The reason for development of a severity spectrum of pathological gambling is because development of disordered gambling is a gradual process. Slutske, Zhu, Meier and Martin (2011) proposed that disordered gambling is to be considered dimensionally on a continuum, rather than in a dichotomous fashion of pathological gambler, versus, non-pathological gambler. Their proposal is justified in that it is possible to experience several negative consequences for abnormal gambling behaviour causing extensive dysfunction, yet still not meet enough diagnostic criteria for a formal diagnosis (APA, 2013). Furthermore, identifying those in a process of developing problem gambling will increase understandings of risk factors as they will be observed at a primary stage informing of the aetiological processes.

Problem gambling is primarily a term to describe gambling behaviour that gives rise to negative consequences for the individual, others in his/her social network, or for the community, but does not necessarily fit the required diagnostic criteria for pathological gambling (Ferris, Wynne & Single 1998). Problem gambling is a term used to indicate all patterns of gambling behaviour that compromise disrupt or damage family, personal and vocational ventures (Cox, Lesieur, Rosenthal & Volberg, 1997; Lesieur, 1998). These definitions offer a comprehensive view acknowledging that consequences of problem gambling extend beyond an individual level, affecting family and associates of the gambler.

Abbott et al., (2004) observed that not all of the clinical features of disordered gambling need to be present at one time, whilst investigating the public health risks of problem gamblers. From a broader UK health perspective, problem gamblers are an increased area

of concern, likely to develop severe gambling behaviour as they currently represent a larger proportion of the population compared to disordered gamblers. Great Britain prevalence rates of low risk problem gamblers report 5.5% and those at moderate risk 1.8% (7.3% in total). The 2010 BGPS problem gambling rates differ between 0.7 % using the Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001) and 0.9% employing DSM-IV criteria (APA, 1994). Fundamentally, measurement error will vary across instruments used to identify problem gambling behaviour, limiting comparisons because of these types of caveats in data collection.

There are differences in the intensity of gambling problems that require specific treatment. For example, problem gamblers, as a subgroup are not appropriate for diagnostic consideration as they do not meet all of the existing criteria for gambling disorder. Nevertheless, they still would benefit from a form of intervention. Problem gamblers are represented as those transitioning along the continuum from recreational to disordered gambling, likely to experience moderate or even severe consequences related to their gambling behaviour (Whelan et al., 2007). Furthermore, it is likely that few diagnostic symptoms are present and problem gambling is a description of its behaviours related to its consequences rather than a list of diagnostic criteria (Whelan et al., 2007).

1.2.5 A Review of Problem Gambling Instruments

It is relevant to consider the psychometric properties of problem gambling measures, in comparing their strengths and limitations. Moreover, in the context of a criterion demonstrating satisfactory reliability and validity, it is important the instrument reports classification accuracy, sensitivity and specificity and statistically measure 0.80 or more,

for example, a test-retest correlation of $r = 0.80$ (DiStefano & Morgan, 2011).

Furthermore, there is limited research on the measurement of problem gambling among particular populations such as older adults and youth. Special populations may exhibit symptoms and behaviours of problem gambling different from those measured within general adults (Stinchfield, 2010).

Problem gambling instruments are predominantly based and validated against DSM diagnostic criteria for example; Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001), Massachusetts Gambling Screen (MAGS; Shaffer, La Brie, Scanlon & Cummings, 1994), DSM-IV-Multiple Response, (MR; Fisher, 2000), Diagnostic for Gambling Interview Schedule (DIGS; Winters, Specker & Stinchfield, 2002), Gambling Treatment Outcome Monitoring System (GTOMS; Stinchfield, 1999), Victorian Gambling Screen (VGS; Ben-Tovim, Esterman, Tolchard & Battersby, 2001). Furthermore, screens including the Lie-Bet Screen (Johnson, Hamer, Nora, Tan Eisenstein & Engelhart, 1997) and a One-item Screen for Problem Gambling (Thomas, Piterman & Jackson, 2008). It is noted that recent assessments are currently based up on DSM-5 diagnostic criteria (Goodie et al., 2013).

An assortment of culturally varied instruments and screens are validated to assess problem gambling including a significant variation in instrument usage in relation to era and jurisdiction. Williams, Volberg and Stevens (2012) observed 242 problem gambling instruments were employed in 2020 adult prevalence surveys completed between 1975 and 2011. These consisted of the South Oaks Gambling Screen (Lesieur & Blume, 1987), 43%, the DSM 26% (APA, 1980 & 1994), and the Problem Gambling Severity Index, 23%

(Ferris & Wynne, 2001), and other instruments collectively accounted for 8% of the total (e.g. Revised Victorian Gambling Screen; Wenzel, McMillen, Marshall & Ahmed, 2004).

Instruments used in Britain for gambling research had an even split with the DSM-IV being used 40%, SOGS, 29%, PGSI 22% and other instruments 10% of the time (Williams et al., 2012). Furthermore, from 1986 to 1999 the SOGS was widely used across countries to measure problem gambling prevalence yet since 2000 the PGSI and the DSM appear to have replaced the SOGS (Williams et al., 2012). It is evident that employing different instruments may complicate analysing results across studies. Blaszczynski, Ladouceur, and Shaffer (2004) identified that there is a lack of assessment measures to differentiate between and diagnose problem and pathological gambling behaviour.

The SOGS is the most commonly used screening tools for problem and pathological gambling diagnosis, including its revised versions in older adult prevalence surveys (for e.g. SOGS-R, SOGS-M) (Abbott & Volberg, 1996). It has been used for assessing problem gambling prevalence in older adults 10 times out of 25 gambling studies (Subramaniam et al., 2015). However, it has been subject to considerable criticism, as it was developed and tested in clinical settings, and subsequently adopted for community samples without validation within community samples. It contains several items that do not adequately discriminate between regular and problem gamblers and is unsupported by established norms (Abbott & Volberg, 2006; Subramaniam et al., 2015). SOGS items, specifically whether respondents have missed work due to gambling, may not apply to retired older adults (Wiebe & Cox, 2005). Subramaniam et al., (2015) noted that other instruments to measure gambling behaviour have been similarly developed for the adult population,

highlighting an emergent need to refine current instruments or develop new tools, validated for older adults.

1.2.6 Evaluating the Problem Gambling Severity Index (PGSI)

Ferris and Wynne (2001) developed the PGSI consisting of 31 items. The higher the score, the greater the risk that gambling is a problem. Scores for the nine items are summed, and the results are interpreted as; 0 - Non-problem gambling, 1-2 - Low level of problems with few or no identified negative consequences, 3-7 - Moderate level of problems leading to some negative consequences and 8 or more - Problem gambling with negative consequences and a possible loss of control.

Internal consistency was high ($\alpha = 0.84$) as was four-week test-retest correlation ($r = 0.78$); and validity was estimated by computing correlations with concurrent measures of problem gambling, including the SOGS ($r = 0.83$), DSM-IV ($r = 0.83$) and clinical interviews ($r = 0.48$). The PGSI has strong classification accuracy, multiple response options and a unique item about effect on physical health and gambling. Importantly, the tool is applicable to accurately measure problem gambling in older adult populations (Ferris & Wynne, 2001, Orford et al., 2009).

1.2.7 Evaluating the South Oaks Gambling Screen (SOGS)

The South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987) is a 20-item multiple-choice instrument that was introduced as a method for identifying individuals with pathological gambling (PG). Positive responses to 5 or more items result in a designation of “probable pathological gambler” (PPG; Lesieur & Blume, 1987). The SOGS’ format

permits many modes of administration, including interviews by experts or non-experts, computer, or self-administration. Because of the tool's convenience and efficiency, the SOGS was a dominant instrument for measuring pathological gambling in research settings, including applications to theoretical, clinical, and epidemiological research (Petry, 2005).

Dohrenwend (1995) stated that applying a clinical screen to the general population has fundamental flaws, as clinical screens are designed to be used in settings where prevalence is higher. However, with such screens being implemented in the general population where the prevalence of pathological gambling is lower, suggests a decline in the accuracy of the screen's diagnostic proficiency.

Furthermore, the SOGS has been subject to criticism with concern regarding prevalence rates of Probable Pathological Gambler as positive responses to 5 or more items are higher than diagnostic rates based on DSM criteria in populations of similar samples (Stinchfield, 2002; Wickwire, Burke, Brown, Parker, & May, 2008). This elevates concerns of increased false positive rates which are occurrences of positive test results where the underlying condition is absent. Slutske, Zhu, Meier, and Martin (2011, p. 744) maintained that a critique based on high false positive rates *“is not an especially damning criticism because it is primarily a function of the cut-offs used to make a diagnosis and this has been changed with every revision of the DSM, often without empirical justification”*.

Stinchfield (2002) identified the SOGS was weakly aligned with DSM criteria as some SOGS items are observed as subjective compared to DSM criterion that is behavioural, with many of the SOGS criterion related to borrowing money to support gambling

behaviour. For example, item 16a on the SOGS enquires if the individual has “borrowed money from the household to gamble or pay gambling debts” (Lesieur & Blume, 1987). Stinchfield (2002) observed that a probable pathological gambler can be observed by a single criterion of reliance on others to fund their gambling in accordance with the SOGS. A final point brings attention to DSM-IV symptoms that are not covered within the SOGS. For example, four of the ten DSM-IV criteria were included in the SOGS (1) chasing losses in Item 4, (2) lying in Items 5 and 11, (3) jeopardising job or career opportunity in Item 15, and (4) relying on others to provide money in Items 16a through to 16i (Stinchfield, 2002). Finally, relying on others to provide gambling money is proposed as overrepresented in the SOGS, as it is reflected in half of the 20 items.

The DSM-5 has reduced the number of symptoms required for a PG diagnosis from five to four and eliminates one of the ten criterion symptoms from DSM-IV, namely, the commission of illegal acts to finance gambling activity. Therefore, as the diagnostic symptom-count criterion is reduced problems of false positives may taper. Goodie et al., (2013) explored if DSM-5 criterion rendered the SOGS less prone to high false positive rates and systematic overestimation of prevalence rates from a population of community-based frequent gamblers. They examined the convergent validity of the SOGS based on its relations with a number of external criteria, including measures of demographic variables, personality traits, affect, and substance dependence.

SOGS scores correlated ($r = .66$) with both DSM-IV and DSM-5 symptoms. However, 195 false positives and 1 false negative were observed when using the recommended cut off point, yielding an 81% false positive rate. For uses with DSM-IV criteria, a cut off point of 10 retained high sensitivity with greater specificity and fewer false positives. For DSM-5

criteria, a cut-off point of 8 for use as a clinical screen and a cut-off point of 12 for prevalence were observed. Overall, in a large diverse community sample of frequent gamblers, the SOGS performs well when used dimensionally, but exhibited serious limitations when used categorically on the traditional cut-off point of five. Stinchfield (2002) stated that in clinical applications, false positives are less severe than false negatives, as an untreated condition may cause more significant problems than the cost, side effects, and other consequences of a false positive diagnosis. Overall it was not applicable to use the SOGS in this study.

1.2.8 Reliability, validity and classification accuracy of DSM-5 criteria

Stinchfield et al., (2015) stated that an accurate diagnosis of gambling disorder is important when measuring prevalence in the general population, including managing public health efforts, diagnosing patients in clinical settings, and measuring treatment outcomes.

Gebauer, LaBrie and Shaffer (2010) observed that DSM-IV criteria are not an exhaustive list of pathological gambling symptoms; it is observed to include symptoms that are insufficient to provide accurate diagnosis. Subsequent to the publication of DSM-IV, there were limited empirical studies on the reliability, validity, and classification accuracy of diagnostic criteria for pathological gambling (National Research Council 1999; Petry, Blanco, Stinchfield & Volberg, 2013; Zimmerman, Chelminski & Young, 2006).

There are discrepancies regarding how many criteria must be positive to differentiate between disordered and non-disordered gamblers. The classification accuracy of DSM-IV diagnostic criteria for pathological gambling reveals that most diagnostic errors are false negatives (incorrectly observing gambling disorder) with errors occurring below the

threshold of five criteria (Jimenez-Murcia, Stinchfield, Alvarez-Moya, Jaurrieta, Bueno, Granero et al., 2009; Lesieur & Rosenthal 1991; Stinchfield, 2003; Stinchfield, Govoni & Frisch 2005; Zimmerman, Chelminski & Young, 2006). Therefore, based on the evident psychometric properties of the DSM-IV criteria and diagnostic errors, lowering a 'cut off point' from five to four (Jimenez-Murcia et al. 2009; Stinchfield 2003; Stinchfield et al. 2005) or eliminating one or more criteria (Strong & Kahler 2007; Zimmerman et al., 2006) makes sense. Petry et al., (2013) observed across five independent samples in epidemiological and treatment seeking populations, illumination of diagnostic criteria effected prevalence rates. Prevalence for gambling disorder was 16.2% (DSM-IV) when five out of 10 criteria was used in assessing diagnosis and 19.9% when four out of nine (DSM-5) criteria were employed.

Batstra and Frances (2012) argued that by reducing the number of criteria required for a disordered gambling diagnosis in the DSM-5 may result in false-positive diagnoses (e.g. lower specificity) leading to imprudent treatment decisions and misallocation of scarce resources. Denis, Fatseas and Auriacombe (2012) in an addiction treatment sample ($n = 161$), observed that a reduction in the number of required criteria effected the prevalence rate of gambling disorder which, increased from 20.5% (DSM-IV) to 25.5% using DSM-5 criteria. Conversely, previous studies measuring the concurrent validity of DSM-IV pathological gambling criterion identified a consistent diagnostic accuracy with a cut-off of four than with five criteria (Jiménez-Murcia et al., 2009; Stinchfield, 2003; Stinchfield, Govoni, & Frisch, 2005).

A comprehensive evaluation of the validity of DSM-5 diagnosis of gambling may be useful amongst older adults with large differences in prevalence recorded, possibly as

criteria may not capture severe or less problem gamblers where behaviour requires treatment. Potentially, demographic influences such as age is a reason why the 2010 BGPS (Wardle et al., 2011) using DSM-IV criteria measured no problem gambling prevalence rates in UK older adults aged 75 and older (Wardle et al., 2011). Fundamentally, it is imperative to assess the impact of DSM-5 changes across gender, age, racial and ethnic groups (Sacco, Torres, Cunningham-Williams, Woods, & Unick, 2011). Furthermore, controversy has been observed over the assessment and diagnosis of gambling disorder in youth and young adults, with vast differences in prevalence rates noted across surveys (Forrest & McHale, 2012; Volberg, Gupta, Griffiths, Olason, & Delfabbro, 2010; Welte, Barnes, Tidwell, & Hoffman, 2008). Furthermore, it is proposed that this controversy should withstand for older adults that also display vast differences in problem and pathological prevalence rates across surveys (Wardle et al., 2011; Subramaniam et al., 2015). Strong and Kahler (2007) assessed the severity of DSM-IV pathological gambling symptoms and patterns influenced by demographics (age, sex, race and income level).

Significant bias in symptom severity estimates were observed across demographics based on age and gender. Women revealed significant differences and those with the same level of gambling problem severity as men were more likely to report gambling to lift a bad mood and gambling to forget problems. Furthermore, younger gamblers reported chasing losses at lower level of gambling problem severity than older gamblers, however the mean age of gamblers was 45 years of age (Strong & Kahler, 2007). It is proposed that subgroups are analysed to ascertain whether demographic changes impact different diagnoses based on gender, age, or race/ethnicity in subpopulations such as older adults relative to the DSM-5 classification system. Specifically, as DSM criteria are

predominantly used to measure gambling behaviour in national prevalence studies including Britain (Volberg & Williams, 2013).

1.3 Problem Gambling Survey Prevalence Rates

The National Gambling and Behaviour Impact Study Commission (National Opinion Research Centre, 1999) reported that 125 million people participate in gambling worldwide, with older adults, defined as aged 65 years and above (World Health Organisation; WHO, 2012) constituting approximately 7.2% of this population. UK past year prevalence rates of older adult gambling behaviour has shown an increase in those aged 75 years and above (Wardle et al., 2011). This increase in prevalence may elevate vulnerability in the older adult population making it more likely for them to develop a gambling disorder. However, minimal research has been conducted to investigate UK older adult gambling behaviour. Therefore, this thesis has focused on these types of issue.

Existing studies support increased prevalence rates of gambling and gambling disorder in older adults (Abbott & Volberg, 2000; McCormack, Jackson, & Thomas, 2008; Moore & Neal, 2001; Phillippe & Vallerand, 2007; Stitt, Giacomassi, & Nichols, 2003; Wiebe & Cox, 2005). Furthermore, it is proposed that the proportion of problem gamblers will vary, given differences in measures, classification schemes, sampling strategies and age thresholds (Lister & Nower, 2013). A comparison of national prevalence rates globally is complex due to the lack of standardisation in measurement.

Problem gambling rates within UK adults aged 16 to 75 years and above have risen between 1999 and 2010, while current problem gambling rates are 0.7% using the Problem

Gambling Severity Index (Wardle et al., 2011). They are comparable internationally to the prevalence levels recorded in Germany (0.6%) Norway (0.8%) and Switzerland (0.8%), all constituting a lower prevalence compared to the US (3.5%), Macao (4.3%) and Hong Kong (5.3%; See *Figure 1*).

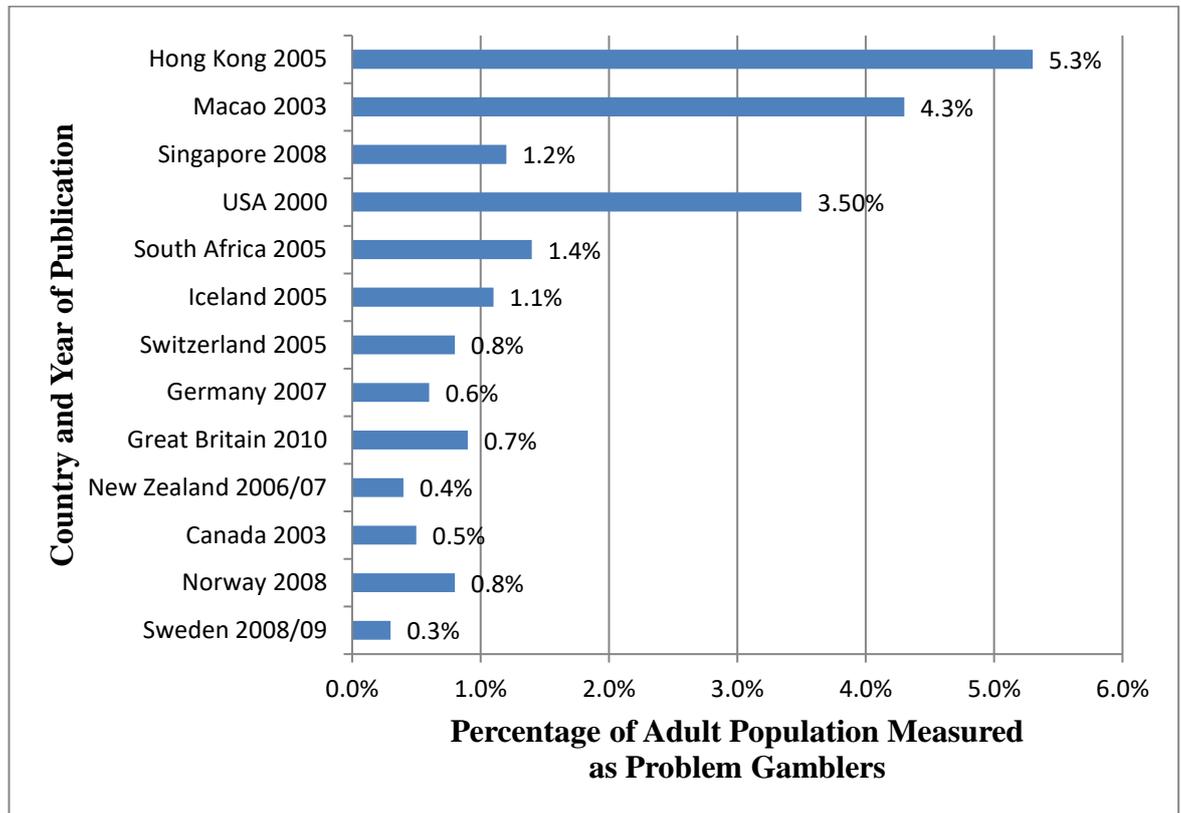


Figure 1. National Problem Gambling Prevalence Survey Estimates (Wardle et al., 2011)

Ascertaining prevalence levels of older adult problem gambling is a difficult task when sample sizes show lower numbers of respondents from these population subgroups, including females and members of minority groups (e.g., the homeless; Barnes, Welte, Tidwell & Hoffman, 2015). Although problem gambling prevalence was significantly higher across adults aged 16 and above, it has been observed that 0.4% of past year older adults have met criteria for problem gambling (Wardle et al., 2011).

Current national studies show sampling bias towards adult gamblers within non-representative populations proposing insufficient samples to examine problem gambling in older adults (Subramaniam et al., 2015). Thus, evaluating current international and British prevalence rates of older adult problem gambling behaviour may not be an accurate representation and should be viewed with caution. According to the 2010 BGPS, no occurrences of problem gambling were detected for those over the age of 75 years in the general population (Wardle et al., 2011). There have been no UK surveys that allow the direct examination of trends in British older adult gambling and problem gambling behaviour.

Similarly, gambling among older adults has risen in Canada and the US. However, evidence is conflicting regarding whether the prevalence of problem gambling amongst this age group is also increasing (Phillippe & Vallerand 2007). Welte et al., (2015) stated that respondents who lived within 10 miles of a casino were twice as likely to be problem gamblers as those who did not. Based on the theory, that an increased exposure to gambling venues promotes problem gambling (Welte, Wieczorek, Barnes, Tidwell & Hoffman, 2004), it seems plausible that rates of older adult problem gambling are likely to rise; on the premise that British past year prevalence rates of older adult gambling behaviour have increased particularly in those aged 75 years and above (Wardle et al., 2011).

The Theory of Adaptation (LaPlante & Shaffer, 2007) when applied to gambling reports that initial increases in exposure to gambling venues lead to increases in rates of problem gambling. Although according to the theory, a population will eventually adapt to the new

stimulus and further negative consequences will not be forthcoming in spite of increased exposure, achieved via various mechanisms including: waning of novelty effects, development of interventions, and a reaction to increases in harmful consequences. The Theory of Adaption may offer explanation why older adult problem gambling rates appear stable although opportunities to gamble are expanding. It is probable problem gambling rates do not increase due to social adaptation as gambling becomes less novel in a local environment (Shaffer, La Brie & La Plante, 2004). McKay (2005) stated that gambling problems within older adults are likely to increase based on four factors: (1) the increased pool of older adults; (2) an elevated availability of gambling opportunities; (3) the constrained earning potential of the older age group; and (4) tendencies for older adults to not seek treatment for gambling problems.

Gambling availability in the UK has increased through the passing of The Gambling Act 2005. Following full implementation in September 2007 the UK gambling industry has experienced a significant reduction in trading restrictions. Fundamentally, changes in legislation have enabled the UK gambling industry to actively promote their product and expand business to meet higher participation rates. The more restrictive 1968 legislation in the UK, and the prohibitive stance on gambling throughout the history of the US, was motivated by social concern for the negative impact that gambling and problem gambling would have on communities (Reith, 2006). It is estimated that the number of potential British problem gamblers is close to five hundred thousand, proposing that British gambling represents a social problem (Gallagher, 2013).

Alberghetti and Collins (2015) highlighted that the relaxing of gambling laws may affect older adults as changes in society today may not be understood by older adults as they (or their parents) would have lived through periods of time when gambling laws were different and gambling was prohibited. These shifts may have important implications for the likelihood that older adults will initiate gambling. It is possible that the increase of gambling exposure has potential to increase rates of problem gambling across all ages. The 2010 BGPS showed that problem gambling in Britain had increased by 50% in three years (Wardle et al., 2011).

While a UK national gambling helpline reported visits to their website rose by more than 100,000 in 2012 compared to the previous year, and they predicted they would answer more than 44,000 calls in 2013, a 22% rise on 2012, with 20% of callers under the age of 18 years (Gallagher, 2013). These statistical findings inform us that better UK regulation is required to reduce rates of problem gambling specifically in vulnerable subgroups of gamblers such as the elderly.

1.3.1 Older adult gambling and online gambling

The dynamic of the gambling industry is changing; incorporating online/internet gambling with a significant rise in mobile apps, (a computer program designed to run on mobile devices such as smartphones and tablet computers) and with the spread of Wi-Fi and the development of large, easy-to-use touch-screens has brought gambling to all ages including older people (Dervensky & Gainsbury, 2015). Internet gambling is a term used interchangeably with online gambling concerning accessing Internet websites or web-

based applications (apps) to gamble on chance based events for money (Derevensky & Gainsbury, 2015).

Alberghetti and Collins (2015) stated that more research is required to understand older adult online gambling behaviour. Ialomiteanu and Adlaf (2001) observed that 8% of adults over 65 years participated in Internet gambling within the past year; the highest among all age groups. An international study interviewed Internet gamblers from various countries and observed that adults aged 65 years and above comprised 11.9 % of the sampled population, with 5.3 % identified as problem gamblers (McBride & Derevensky, 2009). For older adults with limited transportation, the convenience of online gambling arguably is a significant factor in the elevation of this age group and participation. Wood and Williams (2009) identified that 42 % of Internet gamblers reported that unlimited availability was associated with internet gambling.

Prevalence rates of problem gambling are elevated amongst internet gamblers due to its convenience, easy accessibility, and anonymity (Wood & Williams, 2009). UK gamblers have extensive access to gambling including novelty bets, for example, the birth of Prince George of Cambridge generating over 1 million pounds on wagers (Petroff, 2013). Fundamentally, this diversity conveys the value of the UK's ubiquitous and heterogeneous gambling offerings (Abarbanel, 2014). The 15-item Reasons for Gambling Questionnaire was designed for use in the general population including people with gambling problems (Wardle et al., 2011). The most commonly endorsed items for British past year gamblers were for the chance of winning big money (83 %), because it is fun (78 %), to make money (59 %), and because it is exciting (51 %).

1.3.3 Motivational theories of gambling

Older adult gamblers are an interesting group to observe because of their life experiences, values, and attitudes shared across generations (Alberghetti & Collins, 2015). With different types of gambling opportunities in the UK, (specifically Britain), it makes sense to analyse the different motivational dimensions of older adult gambling behaviour.

Understanding motivations for gambling is of substantial foundational value to research that aims to uncover determinants of gambling behaviour including involvement (Binde, 2009). Chen, Shoemaker and Zemke (2013) stated that motivations are not generalisable across different games. Cultural and group differences also affect motivation to gamble (Lee, Lee, Bernhard, & Yoon, 2006; Neighbors, Lostutter, Crouce, & Larimer, 2002).

Medeiros et al., (2015) identified the prevalence and acceptance of gambling across different cultures, questioning how and to what extent culture affects individual gambling behaviour. As more information accrues on the gambling behaviour of British older adults it will be possible to tailor to their specific needs and inform clinical sectors resulting in efficacious treatment approaches.

The UK has a long modern history of gambling and is legalised throughout the country (Abarbanel, 2014). In contrast countries including the US, France and Korea show that gambling is restricted to counties, states and specific geographical locations (Abarbanel, 2014). Extant research on older adult gambling is cited from countries that have cultural differences such as social background and a distinct legal status of gambling. These contributing factors highlight variations in gambling behaviour potentially affecting gambling attitudes and producing cultural specific behaviour (Orford, Griffiths, Wardle, Sproston & Erens, 2009).

Francis et al., (2015) observed that British and Australian general populations displayed differences in their attitudes towards gambling. Despite the perceived acceptance of gambling as a part of Australian culture, the majority (84%) stated there are too many opportunities to gamble and 69% claimed gambling should be discouraged (Mond, Davidson & McAllister, 2011). However, less negative attitudes towards gambling were observed in Britain, where 69% of the general population think there are too many opportunities to gamble and less than half (48 %) think it should be discouraged (Orford et al., 2009).

Fundamentally, it makes intuitive sense to develop a substantive theoretical framework to understand older adult gambling behaviour and motivation in a British context. Exploring gambling behaviour and motivation in British older adults will work towards creating clearer understandings, specifically as few studies have examined the motives of older adult gamblers (Clarke & Clarkson, 2008). Observing specific cultural and age related gambling motivations will aim to identify the unique gambling objectives of older British citizens.

Measures gathering information on gambling motives are included in gambling prevalence surveys (Francis, Dowling, Jackson, Christensen & Wardle, 2015). Population level information on gambling motives can inform new policies or government interventions in gambling including the availability of gambling opportunities and technologies. The first large scale prevalence survey to include a standardised measure of gambling motives was captured in the 2010 BGPS (Wardle et al, 2011). Gambling motives relate to the reasons why a person engages in gambling behaviour although there are limited theoretical or

conceptual models attempting to explain the nature and development of the behaviour (Francis et al., 2015).

Wiley, Shaw, and Havitz, (2000) in a psychological approach to understanding gambling motivation observed potential for the gambling activity to cause personal relevance to the gambler in a 'learned system' by relating the activity to their self-image and to replace hedonic voids; whilst other significant emphasis has been placed around recreational experience (Platz & Millar, 2001). Coping and enhancement motives to gamble are associated with psychological drives such as to increase low mood, increased number of gambling activities and severity of problem gambling (Lee, Chae, Lee & Kim, 2007; McGrath, Stewart, Klein & Barrett 2010; Stewart & Zack 2008; Stewart, Zack, Collins, & Klein, 2008).

Loroz (2004), in the form of experiential consumption, explored gambling motivations within the core elements of hedonic consumption including fantasy, feeling and fun. Cotte (1997) adopting the model of experiential consumption, identified hedonic and economic reasons for gambling, and defined ego-driven, learning, relaxation, financial rewards, and excitement as motivators that stratify gamblers into motivation-based groups; including, utilitarian seekers, excitement seekers, multipurpose gamblers and relaxation seekers.

Gambling motives appear to differ according to socio-demographic factors, such as sex, age (i.e adolescent versus adult/older adult gambling motivations), employment status, and highest education qualification (Francis et al., 2015). Men are more likely to endorse money, positive feelings, regulating internal states and challenge reasons for gambling compared to women. These findings are consistent with research exploring socio -

demographic differences and gambling motives (Dowling 2013; Lloyd et al., 2010; McGrath, Stewart, Klein & Barrett 2010).

Overall, subtypes of gamblers may be identified based on their primary reasons, or motives, for gambling. Individuals with elevated enhancement motives gamble to maximise positive emotions, gamblers high in coping motives attempt to minimise negative emotions, and those high in social motives engage in gambling for social affiliation. However, there is a discrepancy in disseminating a standardised measure of gambling motivation based upon demographic differences, cultural, geographical and population variations across subgroups of gambler. This is problematic specifically in relation to situational and motivational correlates of problem gambling. Put simply, the underlying motivational factors influencing problem gambling behaviours may differ across subgroups (for example, adolescent and adult gamblers) therefore older adult gambling motives may not be effectively measured via a standardised tool (Wiebe, 2005).

1.3.4 Subgroups of Problem Gambling

Gamblers and disordered gamblers are a heterogeneous group constituting a plethora of behavioural and demographic variability, observed across age groups, gender, and culture, demonstrated by a range of gambling preferences and venues (Richard & Humphrey, 2013). Subgroups can be identified by their core features including personal motivation to gamble, relating to the function of their behaviour; for instance, the reasons why somebody gambles (Richard & Humphrey, 2013).

Milosevic and Ledgerwood (2010) in a review of adult gambling subtypes referred to Moran's (1970) initial typology that divided disordered gamblers into five motivational subtypes, relating to intrinsic and extrinsic causes of the disorder. The extrinsic cause, identified; (1) the subcultural gambler as a result of pressure from close ones around them, (2), a neurotic gambler, gambles in response to stressful life events and situations; with intrinsic causes identified (3) the psychopathic gambler, gambling related to dysfunctional personality disorder, (4), the impulsive gambler, having lost ability to control impulses and (5) the symptomatic gambler gambling related to underlying psychological disorder.

Milosevic and Ledgerwood (2010) reviewed gambling subtypes from an array of theoretical perspectives and it emerged that three subtypes were in line with the 'Pathways Model' (Blaszczynski & Nower, 2002). The Pathways model is based on the premise of pathological gamblers being a heterogeneous group, advocating a three group pathway to explain pathological gambling acquisition and maintenance; consisting of the following subgroups; (1) behaviourally conditioned problem gamblers, (2) emotionally vulnerable problem gamblers and (3) antisocial impulsivist problem gamblers (Blaszczynski & Nower, 2002).

Milosevic and Ledgerwood (2010) observed in type (1) individuals were likely to report elevated levels of depression and anxiety, many of whom gambled as an avoidance or psychological escape, in line with the emotionally vulnerable pathway, (2) high levels of impulsivity and low tolerance of boredom furthermore gambling function stimulates the central nervous system identifying 'sensation seeking' behaviours and (3) those that make significant cognitive errors in their thought processes when gambling. These findings are consistent with an earlier study that gave participants a series of personality measurements

in which four factors were observed (1) psychological distress, (2) sensation seeking, (3) crime, and (4) impulsive anti-social (Steel & Blaszczynski, 1996).

1.3.5 Older Adult Gambling Preferences and Motivation.

Lister and Nower (2013) stated that limited studies have evaluated problem gambling behaviour by age specifically investigating motivations and preferences of older adult gamblers. However, due to the recent emphasis on the marketing of gambling towards older populations, current research has focused upon motivation behind gambling activities of older adults specifically in relation to gambling disorder (Garrick, 2014). Identifying individual differences amongst gambling subgroups based on etiology, ethnicity and age has highlighted areas for further exploration concerning the gambling motivation and behaviour within older adults (Lister & Nower, 2013).

Older adults typically report a preference for nonstrategic forms of gambling like a lottery and Electronic Gaming Machines; EGMs (Grant, Kim, Odlaug, Buchanan, & Potenza, 2009; Nower & Blaszczynski, 2008; Preston, Shapiro, & Keene, 2007; Wiebe & Cox, 2005). Petry (2002) observed that 60% of older adults aged 65 years and over preferred playing the EGMs compared to 10% of adults aged 18 to 35 years. Furthermore, Burge, Pietrzak, Molina, and Petry (2004) reported that older adults who began gambling before the age of 21 years were more likely to gamble on card games or sports than later onset gamblers.

In contrast to adult gamblers, older gamblers report that ‘winning money’ was the primary motivation for continued play (Desai, Maciejewski, Dausey, Caldarone, & Potenza, 2004;

Grant, Kim, & Brown, 2001). Additionally, older adults appeared to gamble primarily to combat social isolation and escape boredom (Clark & Clarkson, 2008), combat loneliness, forget about problems and bereavement (Martin, Lichtenberg, & Templin, 2011), relieve tension (Clarke, 2008), and cope with depression (McNeilly & Burke, 2002).

Bingo was the most popular form of gambling amongst British older adult women aged 65 years and above, and is particularly favoured amongst those that are widowed (13%; Wardle et al., 2011). However, for some gamblers they will become dependent or experience negative consequences, developing a problematic orientation toward gambling, while others will not. It is proposed that passion toward gambling has an impact on cognitive and affective consequences associated with dependence and problems toward gambling. In turn, this may be problematic if players develop an obsessive passion for their game (Ratelle, Vallerand, Rousseau & Provencher, 2004). An obsessive passion results from a “*controlled internalisation of the activity into one’s identity*’, which originates from *intrapersonal and/or interpersonal pressure either because ‘certain contingencies are attached to the activity, such as feelings of social acceptance or self-esteem, or because the sense of excitement derived from activity engagement becomes uncontrollable*” (Vallerand et al., 2003, p.757).

Vallerand et al., (2003) observed that those who develop obsessive passions towards activities are compelled to engage in them. Whilst the majority of gamblers will have no obsessive passion, those that do may have a higher risk for developing problem gambling behaviour (Lafreniere, Vallerand, Donahue & Lavigne, 2009; Stenseng 2008; Vallerand et al., 2003). Fundamentally, those possessing an obsessive passion are more likely to experience financial, social, and health-related problems from gambling (Vallerand et al.,

2003). Fowler (2000) stated that for older adults the generational characteristics and significant stages in their life place them at an increased risk for problems arising from an obsessive passion for gambling. Gambling for psychological escape and to manage dysphoric mood is correlated with gambling problems across age categories (Blaszczynski & Nower, 2002; Nower, Derevensky, & Gupta, 2004).

This suggests that older adults are vulnerable to behavioural reinforcement, cognitive distortions and susceptible to problem gambling if their primary motivations are related to alleviating loneliness and depression. Older adults with gambling problems display unique risks, for example, a reduced cognitive capacity may make it difficult for them to make sound decisions. In some ways older adults will display the same problems and motivations as younger aged gamblers, however, the elderly may find coping with problem gambling more difficult (Lister & Nower, 2013). For example, older adults living on a fixed income with limited savings may be unable to emotionally and cognitively manage the financial drain of a gambling disorder compared to a younger gambler with a regular income. An older adult gambler is more likely to be retired with fixed savings, have limited support and contact with family, friends and society, limiting access to help (McNeilly & Burke, 2002). Older adults may perceive the results of problem gambling as a financial problem, rather than a gambling problem, and may seek help through credit lending companies (McNeilly & Burke, 2002). Lister and Nower (2013) observed by comparison that individuals who visit gambling venues for social reasons may be at less risk for problem gambling, although evidence suggests that this motivation is less prevalent than one would assume.

In Nebraska, gamblers aged 65 years and above at commercial and charity based bingo venues, and at a casino were significantly more likely to gamble to relax and have fun (internalised motivation), to get away for the day (extrinsic motivation), to pass the time or relieve boredom (amotivation) and to get inexpensive meals compared to a community group of older gamblers not surveyed in gambling venues (McNeilly & Burke 2000). Older casino gamblers aged 60 years and above in Minnesota (Hope & Havir 2002), claimed that intrinsic motivations for social stimulation and for trying something new were significantly more important than the extrinsic motivation of winning money. Similar case studies have shown that older adult gamblers and problem gamblers aged 65 years and older in treatment (McNeilly & Burke 2002), gamble primarily for excitement and entertainment rather than for winning money.

Stimulation as reward were common reasons expressed by older adult gamblers in Manitoba. They reported gambling to escape problems and loneliness and to pass the time were reasons that tended to predominate among problem gamblers in the sample (Wiebe & Cox 2005). Escaping problems and loneliness was associated with older adults' problem gambling, particularly for women (Boreham, Laffan, Johnston, Southwell & Tighe, 2006).

Clarke and Clarkson (2009) observed that few studies have examined the motivations of older adult gamblers and no studies have used a standardised measure of gambling motivation within those aged 65 years and older. A discrepancy in a standardised measure may be related to demographic differences (such as age), cultural, geographical and population differences across subgroups of gamblers. Put simply, questions related to the measure may not be applicable to all age groups of gamblers, undermining the meaning of the results.

Clarke and Clarkson (2009) examined the situational and motivational correlates of older adult problem gambling, to ascertain the relative contributions of situational factors and motivations to variations in participants' problem gambling scores. Employing the Gambling Motivation Scale (GMS; Chantal, Vallerand & Vallieres, 1994) they identified that frequency of gambling, number of activities, largest amount spent in a single session and parental gambling behaviour were significantly associated with problem gambling. Unique motivational predictors of problem gambling identified were stimulation and amotivation (pass the time). Similar findings have also found that frequency, number of activities, amount gambled and psychological distress are situational factors associated with older adult problem gambling (Erickson Molina, Ladd, Pietrzak, & Petry, 2005; McNeilly & Burke 2000, 2002; Vander Bilt, Dodge, Pandav, Shaffer & Ganguli 2004; Wiebe 2003; Wiebe & Cox 2005).

An improved understanding of motives for older adult gambling will have implications for treatment professionals including prevention and intervention strategies targeting problem gambling behaviour. However until a valid, cohesive, standardised motivational model emerges that integrates knowledge from existing and recent older adult gambling research, theory and practice it will be difficult to effectively reduce problem gambling in UK/British older adult populations.

Blaszczynski et al., (2011) stated that many responsible gambling programs lack a conceptual framework and, in the absence of empirical data, their components are based only on general considerations and impressions, therefore a set of principles and minimal requirements should form the basis for every responsible gambling program.

Consequently, identifying motivational risk factors for problem gambling, specific to the

older adult gambling community, will enhance the limited knowledge surrounding responsible gambling social policies. Overall, identifying and drawing on the vulnerability implications of British older adults that engage in gambling and issues specifically related to their health and well-being has potential to inform basic principles to work towards the development of a UK responsible gambling programme for older adults.

1.3.6 Gambling Disorder, Co-morbidity and Treatment in Older Adults

Wu and Blazer (2014) stated that globally older adult populations are increasing. This may reflect increasing evidence of the association between substance use disorders and disordered gambling in adults aged 50 years and older (Engel & Rosen, 2015). In light of this association there is a need to observe the combination of disorders together in older adults and not as individual concerns (Ferentzy, Skinner, & Matheson, 2013; Pilver & Potenza, 2013). Older adult problem gamblers are more likely to report higher rates of psychiatric disorders, including depression, anxiety and personality disorders (Galetti, Alvarenca, Andrade & Tavares, 2008; Pilver, Libby, Hoff, & Potenza, 2013). Liu, Maciejewski and Potenza (2009) in a nationally-representative sample of recreational gamblers, observed that 10% met classification for substance abuse, however, rates of impairment amongst older adults were less than 5%.

Although gambling and comorbidity may be problematic for some older adults, few seek treatment (McNeilly & Burke, 2000). Older adults may be reticent about disclosing their problems with gambling because of embarrassment, pride, or stigma (McNeilly & Burke, 2000). Nower and Blaszczynski (2008) indicated that older adults are more likely than younger groups to identify the potential for suicide as a reason for seeking treatment.

Furthermore, irrespective of age, problem gamblers have reported rates of suicidal ideation and/or attempts as high as six times those found across general populations (Nower, Gupta, Blaszczynski, & Derevensky, 2004; Zangeneh & Hason, 2006). Conwell, Duberstein and Caine (2002) identified that rates of suicide among older adults are higher compared to other age groups, due to a range of risk factors, including affective disorders, physical illness, functional impairment, and disruption of social ties. Burge, Pietrzak, Molina and Petry (2004) observed that older adults aged 60 years and over that started gambling at a younger age, were more likely to report increased rates of psychiatric symptoms, display exacerbated problems with physical pain, chronic medical conditions, and receive psychiatric treatment and to experience increased suicidal thoughts. Based on these findings it is suggested that older adult health care providers must be empowered with training and evidence-based research that will alert them to the presence of gambling addiction and comorbidity amongst older adult gamblers.

Although older adult motivations to gamble appear mostly focused on fun, entertainment, and leisure, in turn, they appear particularly vulnerable to gambling problems because of issues like declining health (Fessler, 1996; Korn & Shaffer, 1999; McNeilly & Burke, 2000). Southwell et al., (2008) identified that older adult problem gamblers played EGM machines to reduce feelings of physical pain. Therefore, engaging in this type of gambling activity to escape pain makes older adults particularly vulnerable as people who predominantly gamble with slot machines develop a pathological profile faster than gamblers favouring other gambling activities (Breen & Zimmerman, 2002).

In turn, gambling may offer a healthy change from the demands of daily life or from social isolation, which could be vital for greater wellbeing in some older adults (Vander Bilt et

al., 2004). However, negative factors such as alcohol use in older adults have shown to be predictive of gambling and problem gambling activity including additional health problems and psychiatric disorders (Pilver et al., 2013).

Levens, Dyer, Zubritsky, Knott and Oslin (2006) found that binge drinking was a strong predictor of older adults with gambling problems. However it is relevant to consider if binge drinking comes before problem gambling behaviour or after. This highlights unique issues related to attitudes, behaviours, and motivational factors involved in gambling among older adults and as with any addiction, detection at the earliest possible point is an important key to avoiding or minimising negative consequences. Disordered gambling is similar to other types of addiction such as substance abuse dependence, characterised by aspects of tolerance, withdrawal, compulsive use, and adverse consequences (First & Pincus, 2004). The limited research focusing specifically on the older gambler has observed that elderly gamblers who have gambling problems often have a co-occurring addictions, for example, substance abuse disorder (Piertrak, Morasco, Blanco, Grant & Petry 2007). Welte, Wieczorek, Barnes, and Tidwell (2006) observed a positive correlation between gambling behaviour including pathological gambling, accessibility of gambling opportunities, families unaware of the risks for problem gambling and substance abuse involvement.

A meta-analysis of community population surveys has shown elevated comorbidity rates of problem and pathological gambling with substance use disorders including illicit drug abuse (Lorains, Cowlishaw, & Thomas, 2011). Within general population surveys, adults in substance abuse treatment and those in methadone maintenance treatment (MMT) are

more likely to have problem or pathological gambling compared general populations (Petry, 2007).

Horvath and Paap (2012) stated that although previous research shows evidence that problem gambling is linked with substance abuse, it is imperative to collate current data to examine the co-occurrence of these behaviours, specifically in the context of gambling opportunities increasing over the past decade. Ledgerwood and Downey (2002) observed in a sample of patients from a MMT clinic that 17.7% were problem gamblers and 11.3% were pathological. MMT patients that were identified as pathological gamblers produced a positive cocaine urine sample in a 3-month period compared with non-pathological gamblers. Engel and Rosen (2015) observed that knowledge is limited concerning pathological gambling and older MMT methadone treatment patients and prior studies have not disaggregated the results by age.

These types of issues are relevant to older adult gamblers. For example, Wu and Blazer (2014) observed that an increased number of adults aged 50 years and above are illegal drug users and/or misuse prescription drugs. Engel and Rosen (2015) stated that adults aged 50 years or older are an increasing demographic of all admissions for substance abuse treatment. The US Department of Health and Human Services (USDHHS, 2011) figures showed that in 1992 adults aged 50 years or older comprised 6.6% of total admissions among people 12 years or older, by 2011 this age group represented 14.2% of total admissions. These figures suggest it is likely that co-morbid psychiatric disorders, particularly substance addiction, have potential to exacerbate economic and social costs in older adult pathological gambling across communities globally. Consequently, effective treatment approaches should screen and intervene for both problem gambling as well as co-occurring substance abuse at the same time not one before the other.

Knowledge regarding the aetiology of older adult pathological gambling appears lacking and it is observed there are no conceptual models available from which to develop and provide treatment for older adults, specifically models regarding the nature and course of problem gambling development. It remains unknown whether discrete or unique risk factors predispose certain subgroups of older adults to develop problem gambling specifically in comparison to younger adults (Nower & Lister, 2013). Tirachaimongkol, Jackson and Tomnay (2009) advanced the hypothesis that the etiology of problem gambling amongst older adults may parallel two of the three pathways in the 'Pathways Model' (Blaszczynski, & Nower, 2002). Tirachaimongkol et al., (2009) identified three clusters of risk factors characteristic of the older adult problem gambler; (1) individual vulnerability factors; risk factors that are more immediate to the individual such as unpleasant emotions, escaping from life's stress, co-existing with an urgency and/or apathy, whereby a quick fix is sought or where there is nothing left to lose apart from gambling itself; (2) social and environmental factors, including limited social support, entertainment options and discrimination based on ageism and (3) neurobiological agents affecting behavioural regulation factors (disinhibition) from aging or substance related impairments, side effects from Parkinson's medication, impaired decision-making, increased risk taking propensity and judgements.

The Reno model is an earlier theoretical framework developed to create clearer understandings of problem gambling and aide planning of intervention strategies (Blaszczynski, Ladoucer & Shaffer, 2004). Problems associated with gambling are shared by key stakeholders (consumers, gambling industry operators, health providers, nurses and government). The model has potential for assigning roles and responsibilities, for example,

at a basic level, industry can demonstrate their responsibility by providing staff training and treatment providers can offer intervention. Stakeholders collaboratively are in a prominent position to maintain and achieve a high level of responsible gambling provision including education and interventions and help those who are failing to gamble responsibly. However, to date there is insufficient information available about optimal strategies for older adult gamblers (Lister & Nower, 2013). Findings related to treatment and intervention is based upon traditional interventions for adolescents and younger adult gamblers and there are limited research available evaluating treatment outcomes for older adults (Lister & Nower, 2013).

Studies identifying etiological risk factors have observed increased rates of physical, mental and addictive disorders in older adults with gambling problems (Nower & Lister, 2013). Pathological older adult gamblers are more likely to report a negative psychological health status including greater physical and mental health problems, compared to non-problem gamblers, (Botterill, Gill, McLaren, & Gomez, 2015; McNeilly & Burke 2002; Zaranek & Lichtenberg, 2008). Pietrzak, Molina, Ladd, Kerins and Petry (2005) identified that older adult problem gamblers are more likely to report increased severity of family, social, medical (e.g., lower vitality levels, arthritis), psychiatric (e.g. anxiety, depression, paranoid ideation), and alcohol related problems compared with infrequent or non-gamblers.

Furthermore, loneliness, isolation from society, depression, fixed incomes, reduced cognitive capacity, and vulnerability to retirement-related inactivity places older adults at risk for disordered gambling (Hope & Havir 2002; McNeilly & Burke 2002; Nower & Blaszczynski 2008; Southwell et al., 2008). In this sense it is appropriate to evaluate how

gambling may progress into a disorder, if gambling behaviour is perceived as a form of psychological dependence that is maintained by negative reinforcement, involving the completion of an action in order to avoid an undesirable stimulus (Jacobs, 1986).

Furthermore, those gambling in relation to factors including loneliness and depression, do so, to relieve intolerable states of dysphoria and to escape difficult unstimulating environments such as the home (Delfabbro, 2013).

Another significant risk factor for problem gambling in older adults is marital status (Southwell et al., 2008; Zaranek & Chapleski 2005). Subramaniam et al., (2015) reported that older adult problem gamblers were more likely to be single, divorced, or separated. McQuade and Gill (2012) stated that loneliness often associated with bereavement in old age, was a significant risk factor in the development of problem gambling. Botterill et al., (2015) highlighted that loss such as bereavement has potential to reduce resilience and increase susceptibility to loneliness and problem gambling. Their results showed that loneliness is an important predictor of problem gambling in older adults aged 60 years and over, and that meeting the social and emotional needs of un-partnered men is important. However, the needs of older women are equally important as a female higher life expectancy will result in more widows, and their loneliness may influence engagement in escape gambling (McKay, 2005; Norris, 2012).

It is predicted there will be elevated economic and social costs associated with older adult problem gambling and co-morbidity, in the context of rises in prevalence and the lack of efficient and age appropriate effective treatment (Blaszczynski, 2005; Lister & Nower, 2013). Therefore, it is suggested that disordered gambling for older adults is a pertinent

issue requiring attention and a theoretical foundation is required for development of prevention, screening and intervention for disordered gambling.

Furthermore, there is a need to identify co-morbidity and disordered gambling together as well as independently, to understand the role these disorders play in the etiology and maintenance of disordered gambling. For example, disordered gambling may be considered a primary diagnosis, suggesting that the treatment approach should concentrate on the gambling problem. Alternatively, gambling disorder may be a maladaptive way of coping with other psychiatric illnesses (e.g. depression, anxiety). Milosevic and Ledgerwood (2010) stated that disordered gamblers are a heterogeneous group with varying etiological factors for their gambling behaviour.

In summary, the significant issue to be addressed in this field is the paucity of quality, peer-reviewed empirical and clinical research that improves understanding of co-morbidity and disordered gambling in older adults (Pilver et al., 2013; Nower & Lister, 2013; Subramaniam et al., 2015). There is a need for further exploration regarding the sequence of symptoms relative to the onset of problem gambling in older adults (Nower & Lister, 2013). An improved understanding of the aetiology of older adult disordered gambling has implications for a treatment professional's ability to develop and provide suitable, effective treatments.

Petry (2002) advocated that until a valid, cohesive explanatory model is produced, that integrates unique interventions and treatments focusing on gender- and age-specific issues for older adult pathological gamblers, it is predicted that existing knowledge from research,

theory and practice will not reduce disordered gambling in older adults via intervention and treatment approaches. Grant and Grosz (2004) stated that preliminary evidence for the effectiveness of pharmacological interventions for older adult gamblers suggests that future treatment should consider a combination of therapies including cognitive behavioural therapy with pharmacotherapy to identify best outcomes for different subgroups of older adult gamblers, overall increasing efficacious treatment for this demographic.

1.3.7 Prevalence of Problem and Pathological Gambling Disorders in Older Adults

Numerous prevalence studies have examined gambling within large populations (Cox, Yu, Afifi & Ladouceur, 2005; Petry, Stinson & Grant, 2005; Productivity Commission, 1999, 2010; Wardle et al., 2011), and all studies reported information about gambling behaviours, motivations, and consequences in dominant cultural groups (Wynne & McCready, 2005). Prevalence studies serve many salient purposes: (1) establishing the current prevalence of gambling, (2) expenditure on types of gambling activity, (3) sociodemographic characteristics, and (4) the prevalence of problem/disordered gambling including those at risk. Information from prevalence studies create a clearer understanding of the recreational value of gambling to society, negative social impacts of providing legal gambling opportunities, numerical values of gamblers requiring treatment and type of gambling activity related to problem gambling (Volberg & Williams, 2013)

Volberg and Williams (2013) stated that problem gambling is not randomly distributed throughout populations, resulting in certain subgroups (e.g., age categories) reporting higher prevalence rates of problem gambling compared to others. Lister and Nower (2013) observed that lower rates of disordered gambling among older adults as compared to

adolescents and younger adults are commonly reported in earlier, methodologically limited, prevalence studies. However, due to an increase in gambling opportunities for older adults, past-year and lifetime prevalence rates have increased for this subgroup across national prevalence studies (Desai, Desai & Potenza, 2007; National Opinion Research Centre, 1999; Welte, Barnes, Wieczorek, Tidwell & Parker, 2001; Welte, Barnes Tidwell & Hoffman, 2011). The National Epidemiological Survey on Alcohol and Related Conditions (NESARC), observed that 29% of older adults were classified as recreational and 0.3% problem or pathological gamblers (Desai et al., 2007). Potenza, Steinberg, Wu, Rounsaville and O' Malley (2006) observed that one in every five callers to a gambling helpline from 2000 to 2001 were identified as older adults. The mean age of the older adult group was 61.3 years and range of ages in the older adult group were 55–78 years, inclusive.

Across the gambling literature there is an assertion that as gambling opportunities increase, in turn, there will be a corresponding increase in prevalence of problem gambling (Williams & Volberg, 2013). However, Abbott, Volberg and Ronnberg (2004) concluded that in New Zealand between 1991 and 1999, the rate of problem gambling declined regardless of increased gambling availability and expenditures by the public. Bondolfi, Jemann, Ferrero, Zullino and Osiek (2008) identified that the rate of current problem gambling remained stable in Switzerland during a 10-year period in which access to casinos increased. In Sweden, replication surveys showed that between 1998 and 2009, past-year rates of problem gambling did not increase in spite of new forms and opportunities to gambling were introduced (Abbott, Romild & Volberg 2013). It is suggested that an increase in exposure to gambling does not automatically increase rates of problem gambling.

The concept of gambling availability leading to increased problem gambling rates is proposed in the Total Consumption model, also identified as Single Distribution Theory' (Grun & McKeigue; Lund, 2008). The model proposes that there is a close connectivity between average consumption of a product in the population and the prevalence of excessive consumers, and has been used in domains of public health such as alcohol consumption and obesity. Consumption is distributed in the population in a curve characterised by moderate consumption overall, yet with a minority of excessive behaviour in the positive end of the tail, the curve responds as a single entity to changes in overall distribution (Rose, 1995). The applicability of the model has also been utilised in gambling research settings. Grun and McKeige (2000) examined data from the UK lotto a year after its launch and observed an increase in household gambling expenditure compared to the previous year (40% to 75%).

Lund (2008) identified that adult and adolescent gambling frequency constituted data in line with the model (i.e. as gambling availability increases problem gambling prevalence rates will increase in turn). Investigation concerning the relationship between increased availability and problem gambling prevalence rates is limited by variability in the aspects of exposure (high frequency, potency) selected for investigation; specifically, when measuring participants' parameters of gambling exposure and limited information about problem gambling duration (Abbott, 2006). Fundamentally, empirical evidence has shown to support the Total Consumption model. However, the validity of this is a topic of ongoing debate (Volberg & Williams, 2013).

Alberghetti and Collins (2015) stated that opportunities to gamble have increased, and in line with an ageing population, has led to an increased prevalence observed among Canadian older adults. It is argued that gambling industries have modified their activities to attract and market to this group (Alberghetti & Collins, 2015). This highlights that older adults are targets of gambling organisations and the possibility that they will develop into problem gamblers increases, as does the possibility that they will experience problematic financial, social, and health-related consequences. Ariyabuddhiphongs (2012) stated that because of this risk, more research on the prevalence of problem gambling among older adults needs to be conducted in order to increase knowledge on this issue as well as create appropriate solutions.

Data on prevalence rates of gambling among older adults are scarce. However, limited available evidence indicates that rates of gambling have increased over the past 15 years (Southwell et al., 2008). Lister and Nower (2013) observed that US gamblers aged 65 years and over constitute more than 7% of the total gambling community, and argued that with a fast growing ageing population, percentages are likely to increase. An Australian gambling survey during 2012 and 2013 identified that adults aged 55 years and older were the second highest users of EGMs with 26 % having gambled on EGMs in the past 12 months (Queensland Government, 2013). Whilst it has been observed that older adults are less likely to engage in other gambling activities (e.g., horse racing), and elevated usage of EGMs is a cause for concern because it is associated with higher loss ratios and a significantly higher prevalence of gambling problems (Dowling, Smith & Thomas, 2009; Nower & Blaszczynski, 2008).

Welte et al., (2001) from the United States National Gambling Prevalence Survey found that 69% of adults aged 61 years or more, reported gambling in the past year and just over 10% of those showed rates of problem gambling. Welte et al., (2011) re-analysed the aforementioned 2001 United States National Gambling Prevalence Survey data in order to compare the differential prevalence of gambling involvement across age groups, dichotomising age categories, placing those over 60 years into a 61 to 70 years' category and those aged 71 years and over in another. Results showed that 75% of the 61 to 70 years age category and 62% of the 71 years and over age group participated in a gambling activity. However, higher levels of the 61 years and over age category also showed some level (low, moderate or high) of problem gambling behaviour compared to the older age category.

Prevalence rates of current pathological gambling reported in population-based surveys range from 0% in adults aged 61 years and more from across the US (Welte et al., 2001), to 1.2% of older adults aged 60 years and above in Canada (Wiebe & Cox, 2005). Older adults aged 65 and above sampled from community and gambling venues, across the US, ranged from 1.0% (Clarke, 2008), to a high of 11% in those aged 65 years and above (McNeilly & Burke, 2000).

Prevalence figures of lifetime pathological gambling reported from US population studies show 0.29% for those aged 60 years and above, (Pietrzak et al., 2007) to 10.4% (Zaraneck & Lichtenberg, 2008), while older adults sampled from a combination of community and gambling venues, ranged from 3.8% (Erickson, Molina, Ladd, Pietrzak, & Petry, 2005) to 4.7% of older adults aged 65 years and above (Ladd, Molina, Kerins & Petry, 2003).

McNeilly and Burke (2000) observed that amongst 308 older adults surveyed, it was reported that 4.2% were identified as probable pathological gamblers, while 2.6% were classified as problem gamblers. Results also showed the highest incidence of depression, lowest life satisfaction, and most frequent spending on gambling were observed within probable pathological gamblers.

Prevalence rates highlight the extent of problem gambling across older adult populations and provide direction to understand various factors associated with their gambling behaviour, i.e., preferences, duration and frequency. However, surveys do not answer questions relating to the problem duration or recovery processes. It is suggested that to inform on these factors longitudinal research is required. Internationally a handful of longitudinal gambling studies have been established including from the Swedish National Institute of Public Health (2012) and the Victoria Department of Justice (2011).

Prevalence studies aim to identify variables predictive of problem gambling in specific subgroups, including older adults. Predictors of problem gambling commonly identified include (a) socio demographic factors (b) negative psychological and physical health status, and (c) gambling behaviour (Zarnek & Lichtenberg, 2008). Volberg (2010) stated that many surveys focus on psychological traits and do not include environmental influences on problem gambling. Furthermore, across gambling prevalence surveys, the lower threshold for classifying older adults varies substantially, ranging from 50 years and over, to 70 years or over (Lister & Nower, 2013). Therefore, current gambling studies referring to the term 'older adult' have conceptual and methodological variation, making it difficult to evaluate gambling behaviour in older adult populations. For instance, Zarnek

and Chapleski (2005) in their study investigating rates of problem gambling among older adults defined the ‘young old’ as aged 60 to 74.

Zaranek and Lichtenberg (2008) observed that previous studies rarely explore adults aged 75 years and older. Their study of 1410 randomly selected participants, aged 60 years and older residing in Detroit, confirmed that 2.8% aged 75-84 years reported problem gambling behaviour and less than 1% for those aged 85 years and over. Results were questioned if this was an age effect or a cohort effect (similar age group demographics) or both, and it was suggested that a longitudinal study may confirm this by capturing older adult gambling behaviour over a period of time. Fundamentally, it is postulated that longitudinal research is critical to substantiate the consequences of the effects of gambling, particularly within vulnerable populations such as older adults. Longitudinal research presents advantages over cross-sectional studies, as the essence of gambling behaviour cannot always be captured at one moment in time (Zaranek & Lichtenberg, 2008).

1.3.8 Responsible Gambling

Whether gambling is detrimental, neutral, or beneficial to individuals and society is dependent upon social, cultural, situational, and individual factors, including how the gambling activity is regulated. Responsible gambling practices that existed a few decades ago are described as an unregulated circumstance of chance as opposed to current prudent planning, consisting of industry self-regulation and voluntary codes of practice (Smith & Rubenstein, 2011). Reith (2008, p. 149) stated that “*responsibility is based on the possession of power and implies accountability to another for something.*” However, when

applied to the provision of gambling, it is not clear who is responsible to whom, and what are they responsible for (Smith & Rubenstein, 2011).

Campbell and Smith (2009) stated that the responsibility for avoiding problem gambling has previously been placed with the gambler, although scholars have argued that a duty of care rests with both government and industry. The emergence of responsible gambling as a framework to prevent the development of problem gambling has increased awareness amongst the public, and prevention programmes aimed at protecting vulnerable subgroups of gamblers including the elderly and adolescents (Wohl, Sztainert & Young, 2013).

The British Gambling Commission 2014/15 Annual review (Gambling Commission, 2015) proposed that all gambling operators continually improve the information they provide to patrons on the nature of their products and potential harms associated with gambling. Wohl et al., (2013) stated that gambling operators have made steps to create policies and tools to protect consumers from the potential harms of excessive gambling. Collins, Blaszczynski, Ladouceur, Shaffer and Venisse (2015) stated that a proportion of the population consider the term 'responsible gambling' objectionable. Therefore, gambling may be morally reprehensible, exploitative, predatory, and consequently, an inherently unacceptable and irresponsible activity. From this view point, responsible gambling can only be perceived as a conflicting concept.

Responsible gambling programs and initiatives to protect consumers are accepted generally in government legislation, although there is no consensus for the demarcation point between responsible and irresponsible gambling, as the parameters therefore vary according to value judgments (Collins et al., 2015). Furthermore, across all stakeholders

(government, industry, the gambler, and community care) it is not explicit who is accountable to implement responsible gambling strategies. Collins et al., (2015) proposed there is confusion surrounding the term responsible gambling as people hold different views about the morality of the behaviour, specifically regarding its context. In contextualising the meaning of responsible gambling three moral perspectives is considered and they include: the prohibitionist, the libertarian, and the restrictivist approach.

Prohibitionists argue that gambling is sufficiently harmful and should be banned; a position similar to how some jurisdictions may perceive psychoactive drug use and prostitution (Collins et al., 2015). Libertarians have an opposing view that, providing gamblers do not wrongfully harm others, individuals should be free to gamble even if this means they are engaging in an activity that is dangerous and foolish. Restrictivists, for diverse reasons, propose it is better for gambling to be legal rather than banned, and from their viewpoint it should be restricted in a number of ways (for e.g., restrictions relating to who can gamble, on what, where, when, and under what regulatory restrictions). Restrictivists, claim gambling has the potential to do more harm than most other leisure activities that the law permits to be made commercially available to the public. They believe commercial gambling should be strictly regulated compared to non-gambling leisure activities. Across all three moral perspectives it appears that different value judgments are made with respect to personal, social, political, and economic ideals and values, in relation to disputes concerning gambling, problem gambling, disordered gambling and responsible gambling (Collins et al., 2015).

From a moral perspective, the gambling industry appears to share a large responsibility in shaping policies to protect patrons from gambling-related harm, although evidence is conflicting. For example, in some jurisdictions the gambling industry invests an insufficient amount of resources into responsible gambling strategies (Campbell & Smith, 2009), therefore, it could be argued that governments should generate more revenue from gambling and use it to more effectively protect gamblers from potential social and financial harms (Wohl et al., 2013).

Smith and Rubeinstein (2009) stated that the logic of such an approach is that every stakeholder can contribute in negotiating responsible gambling initiatives in contrast to acting alone. Wohl et al., (2013) proposed a 'CARE' model, which brings Casinos, Addiction providers, Regulators together to Educate gamblers and industry providers in efforts to prevent problem gambling, including aiding gamblers to seek treatment. The model is outlined by assigning roles and responsibilities to each stakeholder. However, in light of implementing responsible gambling strategies, it is argued that initiatives still promote gambling products specifically targeting populations vulnerable to developing gambling problems (Griffiths, 2005; Lamont, Hing, & Gainsbury, 2011; Monaghan & Derevensky, 2008).

Theories have been proposed why problem gamblers may be more affected by gambling advertising than recreational gamblers. Among these are that problem gamblers automatically have their attention drawn to gambling-related stimuli (Hønsi, Mentzoni, Molde, & Pallesen, 2013), are more receptive (Lamont et al., 2011), and are more exposed to gambling advertisements compared to non-problem gamblers (Derevensky, Sklar, Gupta, Messerlian, Laroche & Mansour, 2007). Research is limited exploring the effects of

advertising on older adult gambling behaviour, although with regard to age and gender limited findings show that younger people (Amey, 2001) and men (Derevensky Sklar, Gupta & Messerlian, 2010) are increasingly influenced by gambling advertisements compared to older people and women. Hanss, Mentzoni, Griffiths and Pallesen (2015) stated further investigation is required to draw more robust conclusions as associations between age, gender, and perceived advertising impacts are mixed and provide only partial support for the hypotheses that younger age and male gender are associated with stronger advertising impacts. Planzer and Wardle (2012) suggested that a science-informed regulatory approach is needed that uses empirical data to examine the relationship between gambling advertising and disordered gambling.

Hanss et al., (2015) concluded that susceptibility is higher in vulnerable groups of gamblers (e.g., older adults) therefore this vulnerability has potential to undermine a gambler's self-efficacy, beliefs and discourage those who attempt to discontinue gambling. This demonstrates a need for tighter responsible gambling regulation aimed at vulnerable subgroups of gamblers specifically because elderly gamblers are targeted with incentives such as free transportation, cultural events, subsidised meals and gambling promotions (Dyall, Tse & Kingi, 2009; McNeilly& Burke 2001; Stitt et al. 2003; Tan & Wurtzburg 2004). Scooters and wheelchairs for older adults with physical limitations, as well as oxygen, and disposal boxes for diabetic needles are facilities provided by gambling venues which reduce barriers previously faced by this age group (Surface, 2009).

Blaszczynski et al. (2011) acknowledged that gambling providers should accept responsibility by not making misleading claims, disengagement in exploitative practices, omit or disguise relevant information, develop products designed to exacerbate excessive

gambling and target inappropriate subpopulations (e.g., adolescents, elderly, including high risk populations). Although individuals need to accept responsibility for understanding the nature and risks associated with gambling products they consume (Hanss et al., 2015). Casino and gaming operators acquire information from motivation models to select types of machines to provide patrons and to develop advertising and promotions to attract and retain new and existing customers (Abarbanel, 2014).

Francis et al., (2015) stated that gaining an understanding of specific types of gambling motivations will inform efforts aimed at prevention and influence treatment approaches. However, not only are motivational models useful in treating disordered gamblers (Francis et al., 2015), they also serve useful from a marketing perspective by identifying developed profiles of slot machine players (Chen et al., 2013). Abarbanel (2014) stated the use of market research with a focus on gambling business applications has generated gambler profiles based on motivation that serve to help design new gambling products and advertisement techniques.

In order to promote the wellbeing and health of gamblers, specifically vulnerable groups such as older adults, industry, government and healthcare providers are required to work collaboratively to enforce responsible gambling. The CARE model is a platform to assign roles and responsibilities to each of the stakeholders, including best practices for implementation. For example, the role of the government is to legislate and enforce, the role of industry is to educate staff about responsible gambling and take an active role protecting customers from gambling-related harm. Lister and Nower (2013) stated that there is a need for public policies to protect vulnerable groups with harm reduction

measures and education strategies regarding the inherent risks of gambling within older adult populations.

1.3.9 Cognitive Dysfunction and Older Adult Gamblers

It is widely accepted that cognitive performance usually declines in older adults as a result of neurodegenerative processes, and most commonly affected is decision-making (Boggio et al., 2010). Neurobiological vulnerabilities including dementia and other types of cognitive impairments have shown to impede older adult gambling behaviour (Manoso, Labrador & Fernandez-Alba, 2004; Tirachaimongkol, Jackson & Tomnay, 2009; von Hippel, Ng, Abbot, Caldwell, Gill & Powell, 2009). Therefore, it is important to be aware of how types of cognitive decline and changes are a contributing factor in the development of older adult problem gambling. For example, older adult gamblers experiencing dementia tend to report experiencing difficulties with money (von Hippel et al., 2009). McNeilly (2007) stated that if an older adult problem gambler is suspected to have undiagnosed frontal lobe dementia, the individual is likely to underperform on questions of judgment and reasoning.

The older adult gambler may display inflexibility in thinking, as exhibited in poor performance on attention and concentration or visuospatial assessments. McNeilly (2007) concluded that older adults experiencing dementia are likely to exhibit a loss in personal and social awareness, personality changes, impulsivity and increased disinhibition in social situations. In this context, the magnitude of the effect of cognitive decline appears to be largely in relation to an older adult's ability to positively manage their gambling behaviour, suggesting older adults may be at an increased risk for disordered gambling.

Von Hippel et al., (2009) identified that biological behavioural factors play a part in older adult problem gambling and have positive relationships with disordered gambling behaviour and diminished executive functioning, and heightened impulsivity (a propensity for rash behaviour). It has been observed that older adults with or without neurological disease exhibit impaired decision-making in risky situations, when immediate gains need to be sacrificed for long-term profit, particularly in tasks such as the Iowa Gambling Task (IGT: Bechara, Damasio, Damasio, & Anderson, 1994). The IGT is a complex task that adopts probability complexities of everyday life, in a laboratory setting (Zamarian, Sinz, Bonatti, Gamboz, & Delazer, 2008).

The goal of the IGT is to win money; participants are instructed to select cards, one at a time, from any of four sets. When a card is selected and turned over participants are informed of the monetary consequences associated with their card. Some card choices result in participants winning money, whilst some cards result in participant's losing money.

Two of the four sets contain cards associated with the immediate gain of larger sums of money than the other two sets. However, the "win big" card sets contain cards associated with larger losses compared to the other two sets. Outcomes are associated with; "win big" choices totalling greater losses than the sums won. The reverse is the case for the low-paying sets. The underlying task in the IGT is to learn which sets are most advantageous over several card choices, and which ones are not.

Studies have shown that the decision-making process is different in older adults when compared with younger subjects (Fein, McGillivray & Finn, 2007; Reed, Mikels, & Simon, 2008). Denburg et al., (2007) identified that cognitively impaired older adults produce a larger proportion of risky decisions than non-impaired older adults in the IGT. A decision-making deficit, observed across older adults, is likely to be connected to age-related ventromedial prefrontal cortex (VMPFC) decline (Denburg et al., 2007) and/or age-related declines in executive functioning (Brand & Markowitsch, 2010). The VMPFC region is associated with regulating behaviour by updating stimuli and reinforcement, damage in this region will result in ineffective correcting of inappropriate stimulus resulting in an uncontrolled repetition or continuation of a behaviour (i.e. repeated gambling). Fjell et al., (2009) observed that typically older adults have disproportionately less prefrontal cortex activity in relation to the rest of the cortex compared with younger adults.

Patients with lesions in the VMPFC have consistently demonstrated impaired performance on the IGT, implicating these regions in risky decision-making tasks (Fellous & Farah, 2007). VMPFC damage is correlated with impaired decision making in laboratory settings and in real-life situations including risk assessment (Bechra, Tranel & Damasio, 2000; Bechara et al., 1994). Further cognitive and neuropsychological research implicates impulsivity as a risk factor for gambling disorder. Impulsivity involves difficulties delaying gratification and a propensity for rash behaviour (Bechra et al., 2000). Risky decision-making in laboratory environments in a sample of disordered gamblers showed that frontal brain regions are responsible for maintaining reward and punishment contingencies and associated changes in behavioural regulation (Bechra et al., 2000; Nikolas & Hopwood, 2013).

Individuals with gambling disorder report similar decision-making impairments as those with frontal lobe lesions, suggesting that frontal lobe deficits are independent of global executive functioning (Cavedini, Riboldi, Keller, D'Annuncci & Bellodi (2002). Von Hippel et al., (2009) proposed that a possible contributor to rising rates of gambling problems in older adults is a result of decreased self-control brought about by diminished executive functioning; an effect of the result of age-related atrophy of the frontal lobes. Their second study replicated this finding and demonstrated that problem gambling is associated with increased depression among older adults, mediated by increased financial distress. These studies provide support for the hypothesis that older adult gamblers who have executive functioning problems are likely to have gambling problems (von Hippel et al., 2009). Potenza et al., (2003) reported that older adults' deficiency in the ability to control their behaviour will potentially lead to excessive or pathological gambling.

Rogalsky, Vidal, Li, and Damasio (2012) stated that the IGT is an ambiguous task, taxing attention, speed of processing, working memory, feedback mechanisms, and choice selection; all related to the descriptive performance of executive function. Their study identified that poor decision making was present during the IGT, in high-functioning older adults (those not experiencing executive function deficits). Therefore, it is relevant to consider explanations of poor IGT performance (decision making deficits) in older adults without cognitive decline.

Rogalsky et al., (2012) considered that age-related changes in emotional processes may explain some decision making deficits in older adults not displaying executive function deficits. A further explanation of IGT performance deficits presenting in some older adults

may be related to the positivity shifts observed in older adult's perspectives and self-perceptions. Mather and Carstensen (2005) observed that older adults are more likely to attend and remember positive information as opposed to negative processes when compared to adults.

Cognitive and neuropsychological research implicates discrete and unique risk factors including dementia and other cognitive impairments that predispose this subgroup vulnerable to problematic gambling. These findings suggest that a number of biological behavioural factors co-occurring with gambling behaviour heighten the risk level that older adults will develop gambling problems. Hasher, Zacks and May (1999) observed that deficits in executive control are a common consequence of normal adult aging, making older adults less efficient in regulating and adjusting their behaviour.

These studies suggest that increased gambling within older adults may not be an issue of informed choice, because the elderly may have difficulties engaging in self-control when gambling due to losses in executive functioning. However, older adults with or without neurological disease still exhibit impaired decision-making in risky situations (IGT) and consequently in both situations (with/without) are related to normal age-related declines (Bechra et al., 1994).

Von Hippel et al. (2009) explained that poor executive functioning is unlikely to predict gambling problems among all older adults. Furthermore, proposing that executive control is more likely to predict gambling problems for those who have an 'urge' to gamble. Fundamentally, it has emerged from neurological data that age-related declines in

cognitive function is a concern amongst older adult gamblers and more of a concern in elderly frequent gamblers.

1.4 Learning and Conditioning as Risk Factors for Problem Gambling

1.4.1 Age and Gambling Patterns

A framework that may be useful to understand problem gambling from the perspective of increased participation amongst older adults is derived from the Pathways Model (Blaszczynski & Nower, 2002). Based on the model, pathway one shares common features related to increased accessibility and availability to gambling environments, suggesting older adults are a subgroup likely to be exposed to the behavioural reinforcement aspects of gambling. Essentially, if older adult gamblers fluctuate between regular and excessive gambling patterns because of the effects of behavioural conditioning, distorted cognitions surrounding probability of winning and poor decision-making are likely. Therefore, older adults are vulnerable as they become preoccupied with gambling, and are more likely to engage in chasing losses, abuse alcohol and exhibit higher levels of depression and anxiety in response to the financial burden imposed by their behaviour (Nower & Blaszczynski, 2002). The Three Cluster Older Adult Pathways model (Tirachaimongkol et al. 2010) may also be useful in the examination of older adults gambling behaviours. The pathways model hypothesises relationships among three clusters of factors: individual vulnerability, social and environmental, and behavioural regulation.

There are various situational and behavioural factors that influence gambling behaviour. The core principles of operant conditioning theory (Ferster & Skinner, 1957; Skinner, 1938, 1953) are central to the notion that individuals learn by observing the consequences of their actions, called “schedules of reinforcement” (Skinner, 1953). When individuals are presented with different situations they will select those that supply a greater reinforcement or reward. Fundamentally, one of the broad consequences of this process is that individuals may often gamble to the exclusion of other activities. The role of the pattern of rewards can have empowering influence on the persistence of behaviour and as a consequence the individual may be strongly occupied in gambling neglecting existing relationships and commitments that no longer facilitate the same reward. However, reinforcement is not synonymous with reward.

Kazdin (1975) observed that not all rewards are reinforcing and not all rewards can be described as positively reinforcing. Ferris and Skinner (1957) demonstrated how different schedules of intermittent reinforcement have the potential to change behavioural outcomes between ratio and interval schedules. A ratio schedule involves being rewarded based upon response output. In fixed schedules this means that the individual will respond a consistent amount of times to obtain a reward, in contrast variable schedules require a variable number of responses to receive a reward, until achieving an average rate. It is perceived the behaviour is punishing over a longer period of time, or put simply, on a negative ratio of positive reinforcement). Brunborg et al., (2012) underlined the role classical conditioning plays in the critical role of associative learning with gambling; in that the receptivity of a disordered gambler will increase to positive associations, while their receptivity to negative associations appears to decrease. With regards to operant conditioning, the behaviour will

decrease when conditioned with punishment suggesting a contradictory proposition in respect to disordered gambling behaviour that is persistent.

Classical conditioning shares similar perspectives to that of operant conditioning, with the perspective of negative reinforcement. Stimuli associated with continued gambling behaviour are also related to cognitive and emotional physiological responses (Delfabbro, 2013). Classical conditioning theory involves learning a new behaviour through the process of association; two stimuli are linked together to produce a new learned response (Watson, 1924). Dickerson (1979) explained that a pathological gambler will experience a “winning phase” over a period of time that will incorporate other elements of reinforcement. However, this reinforcement does not always equate to financial gain as the primary positive reinforcer in gambling behaviour. Dickerson (1974) stated that once gambling is acquired, commonly through a winning phase (Lesieur & Rosenthal, 1991) it is maintained by classically conditioned reinforcement such as arousal (Lesieur, 1984; Griffiths, 1995) and other emotional rewards as primary reinforcers.

Regarding gambling patterns there are concerns that older adults have a higher propensity to gamble in that they are likely to spend more time and money gambling compared to younger aged gamblers (Stitt, Giacomassi & Nichols, 2003). The Productivity Commission (1999) observed the most important factors associated with a higher likelihood of problems for regular gamblers was age, frequency of playing EGMs, the frequency of betting on racing, the frequency of playing at the casino, and residency within a city.

Johansson, Grant, Kim, Odlaug and Götestam (2009) underlined that addictive behaviour emerges typically within a context involving a range of influences such as behaviour,

social skills, cognitive deficits, genetics and trauma. Preston, Shapiro and Keene (2007) stated a small number of studies have examined retirees' gambling patterns or their proclivities for gambling addiction. Simultaneously, the problem gambling literature has focused on addiction among at-risk groups such as teenagers. However, it has not emphasised the potential problems of gambling addiction for older adults. However, older adults that gamble regularly for social reasons are frequently exposed to priming effects, which are common amongst disordered gamblers having won early in their play (Delfabbro, Lambos, King & Pulgies, 2009).

Brunborg et al., (2012) suggested that conditioned behaviour emerges as part of what is going on during the process of forming an addictive relationship, where it is commonplace to encounter a series of aversive life events involving harms to both the gambler and those around. For example, Brunborg et al., (2012) stated as a relationship to slot machines intensifies, the gambler will face financial losses that are likely to result in severe consequences, including occupational and family problems. For some, these negative events stop players pursuing gambling further, but, for a pathological gambler, such events are unlikely to result in diminished involvement. Perhaps a key functional ability involves switching off concerns about these troubles in order for the gambling relationship to continue uninterrupted. Brunborg et al.'s, (2012) findings are consistent with empirical literature highlighting how conditioning with addictive behaviour involves different dynamics than other forms of learning, for example, social learning (Bickel, Jarmolowicz, Mueller, Koffarnus & Gatchalian, 2012).

Variable ratio schedules demonstrate high response rates because the player is able to interact with the schedule on the assumption the next response (spin) could yield

reinforcement (a win). In the vast majority of cases, gambling activities are based upon a ratio component in that outcomes are unpredictable and determined by chance or luck. Petry (2005) stated that EGMs are misleading; informing that reinforcement is available by showing a consistent role of wins that are smaller than the initial wager, in order to keep a player behaviourally engaged. It is proposed that gambling profits are derived by exploiting distortions in learning, specifically a diminished appreciation of negative consequences. Preston et al.'s, (2007) findings demonstrated that older adults use gambling as a significant part of their recreation and play EGMs, placing older adults at the greatest risk for developing problem gambling behaviours.

1.4.2 Gambling Disorder, Personality and Heterogeneity

Personality traits can be defined as an organised and enduring set of characteristics regarding the ways in an individual perceives and relates to others and the environment (Cattell, 1943). Patterns of feeling, thinking and behaving are presumed to have a causal influence upon cognitive, social and behavioural functioning and are exhibited across a vast range of contexts (Cattell, 1943; Nikolas & Hopwood, 2013). It is noted across the literature there are variations in measurement, theories and models offering differing aspects of how types of personality traits relate to gambling disorder. In gambling studies, it is observed that the identification of trait types is a practical route to understanding disordered gambling. Traits, unlike personality disorders, commonly exist on a normally distributed continuum.

Personality trait research has fostered some of the assumptions of personality disorder research. Orford et al., (2003) stated that attempts to explain and understand pathological

gambling behaviour is a tentative issue, based on the lack of agreement over various assumptions when researching personality disorders in general. The overall assumption is that traits, like personality disorders, are durable and are an antecedent to gambling behaviour. Ultimately, research on personality dysfunction and gambling behaviour is useful if it leads to the identification of mechanisms (e.g., development and maintenance) of gambling disorder.

Neuroticism involves the tendency to experience aversive emotions, including depression, anxiety and anger. A significant relationship has been reported between this trait and gambling disorder (Nikolas & Hopwood, 2013). Therefore, permitting predictions about what types of individuals are more likely to develop gambling problems by exploring different personality traits is useful for understanding heterogeneity amongst disordered gamblers (Nikolas & Hopwood, 2013).

Sensation seeking has increasingly been explored across the gambling literature (Fortune & Goodie, 2010). Gambling is perceived as hedonic and stimulating (Griffiths, 1995), and as a result, it is conceivable that those high in sensation seeking and exhibiting risk-taking characteristics are likely to be drawn to gambling activities. Furthermore, those exhibiting this trait may engage in maladaptive gambling behaviours such as chasing losses and playing with increasing amounts of money to reach desirable levels of excitement.

However it is also relevant to consider non-sensation seeking gamblers, because to date, research into personality traits among gamblers has been largely inconsistent.

Gambling behaviour in an environment varies and it is testament that individual differences play a significant role in development of gambling behaviour, therefore

examining gambling disordered through the lens of personality may lead to important insights (Nikolas & Nower, 2013). Furthermore, linking personality and gambling behaviour may unravel the etiological factors that give rise to the development of the disorder. Personality models may potentially identify typologies to help explain heterogeneity amongst disordered gamblers.

Exploring individual differences explains subtypes of gamblers who may be at risk of developing problem gambling. Vachon and Bagby (2009) identified three subtypes of disordered gambling that differed in line with personality features. Group (1) was characterised by low rates of comorbid psychological problems and personality trait scores; (2) the second group was characterised by elevated levels of excitement or sensation seeking and positive emotionality and moderate levels of comorbidity, and (3) the final group included increased rates of comorbid psychopathology, high neuroticism, high impulsivity and low levels of positive emotionality. Furthermore, these typologies appear in line with the pathways model (Blaszczynski & Nower, 2002) that fosters three personality types. Vachon and Bagby (2009) identified pathway one was similar in that individual differences were a factor regarding attraction to gambling, the second was predisposed by the tendency to experience negative emotions and the third that individuals are likely to exhibit antisocial impulsivity. Donnellan and Robin (2010) identified similar findings in their model suggesting that personality typologies for disordered gambling are more general to psychopathology. It is proposed that by identifying similar personality typologies creates clearer understandings of heterogeneity namely the differences across disordered gamblers.

Robinson and Berridge (1993) outlined that a shift towards wanting at the expense of liking is a classic feature of alcohol and opiate addiction, furthermore a chronic decline in mood may form an 'allostatic load' that supports escapist addictive behaviour via negative reinforcement (Koob, 2013). Therefore, it is likely that impulsive and negative affective personality traits are commonly observed in problem gamblers (MacLaren, Fugelsang, Harrigan, & Dixon, 2011) and will potentially increase the likelihood of problem gambling among EGM players by increasing their use of gambling as a way of escaping negative emotional states (MacLaren, Ellery & Knoll, 2015).

Shao, Read, Behrens and Rogers (2013) observed within a single EGM play session there is a shift in activation away from the brain areas underlying aspects of reward, and moves toward the areas evoked by reward anticipation, it is highlighted that this shift is moderated by 'trait' as a function of prior experience and impulsivity. Therefore, this highlights how specific types of traits contribute to problem gambling, increasing cognitive distortion, specifically cognitive interference, and escapism, in particular types of gambling. In addition, cognitive interference from gambling has been represented in studies recalling Stroop coloured words - neurocognitive task used to assess interference control. It has been observed that disordered gamblers take longer to name colours of gambling related words compared to drug and neutral words (Boyer & Dickerson, 2003). Therefore, this demonstrates that cognitive interference is highlighted as a predictor of risk for problem gambling. The Stroop task based on interference control, provides a clearer understanding of the neurobiological basis of pathological gambling, specifically impaired decision-making, because of an inability to inhibit irrelevant information. Although, past research has demonstrated an age-related increase in the Stroop effect. West and Alain (2000) stated that, older people experience a specific decline in inhibitory function and their findings

demonstrated an age-related decline in a conceptual level inhibitory process that supports the suppression of word information in the Stroop task. Therefore, a conceptual framework is needed to understand older adult gamblers vulnerable to age-linked inhibitory deficits and this is an important consideration based on these findings. However it is noted that the literature on this topic is extreme therefore this study has included what was deemed relevant to include in this study.

In terms of personality Parke, Griffiths and Irwing (2004) argued that individuals with a high level of the ‘experience seeking’ sub-trait may find the opportunity cost of gambling in terms of time and money a deterrent that inhibits their ability to experience new things. However, there may be other explanations for limited associations as Hammelstein (2004) proposed that sensation seeking increases the likelihood that individuals will gamble, but does not increase the risk for disordered gambling therefore sensation seeking may represent a nonspecific and indirect risk factor for disordered gambling. Conversely, studies examining the sensation seeking and problem gambling relationships amongst community and university samples have identified a significant positive relationship between the Sensation Seeking Scale-Form (SSS-V; Zuckerman, Eysenck & Eysenck, 1978) and problem gambling severity (Fortune & Goodie 2010; Zuckerman, 2005).

Finally, Canale, Vieno, Griffiths, Rubaltelli and Santinello (2015) observed that impulsivity is a robust characteristic and is commonly associated with addiction including gambling disorder. Canale et al. (2015) identified that no studies have investigated how gambling motives potentially mediate the relationship between impulsivity traits and problem gambling. Furthermore, how such relationships are different in subgroups, in

accordance with levels of perceived gambling risk and benefits. However, it is difficult to apply their data to older adults, as Orford et al. (2003) highlighted that various traits may be more influential at different stages of the problem gambler's 'career' or across gender and age. Lister and Nower (2013) stated that differences are being observed among different gambling subgroups based on etiology, ethnicity, age, and other factors such as personality traits, resulting in studies warranting a specific investigation of the gambling motivation and behaviour specifically in older adults.

Ultimately, it appears that research on gambling and personality is useful when it identifies mechanisms of disordered gambling behaviour. It has been observed how different traits show variability amongst subgroups of gamblers such as that denied by Lister and Nower (2013) in that differences such as age are being observed among different gambling subgroups and that further research is needed in older adult gamblers. It has been highlighted that no studies have evaluated older adult's personality traits and its association with problem gambling. Clarke (2008) stated that variables that could influence problem gambling need to be incorporated into older adult gambling studies, in which he identified the personality trait of impulsivity was a variable that could influence problem gambling in older adults.

Therefore, based on findings from personality trait studies and findings from studies that sample younger gambling cohorts, it is proposed that investigating personality traits in older adults it may help further understandings of the pathways that lead to and maintain older adult problem gambling. For example, it is concluded that particular types of traits such as sensation seeking may predispose gambling behaviour, and in turn, traits such as impulsivity may lead to disordered gambling.

1.4.3 Cognitive Distortions, Biases and Problem Gambling

Exploring the role of gambling-related irrational beliefs in the development of problem gambling within older adults is warranted as distorted cognitions play a significant role in the risk, development and maintenance of problem gambling (Ladouceur, 2001).

Furthermore, it is important to understand differences in cognitive distortions between older adult problem and social gamblers in order to improve prevention, screening and intervention within this subgroup.

Manoso, Labrador and Fernandez-Alba (2004) explored the role of cognition in the development of gambling problems within older adults and compared their verbalised thoughts in a sample of disordered gamblers, compared to non-gamblers. However, it is acknowledged that the think-aloud procedure is overly intrusive, that verbalisations do not necessarily reflect cognitions held with conviction, and that there are only a limited number of ways that participants can express accurate cognitions about chance and randomness during a period of gambling play (Dickerson & O'Connor, 2006).

Nevertheless, the cognitive approach has considerable explanatory power. Manoso et al. (2000), during a slot machine simulation experiment, found that older adult disordered gamblers were more likely to endorse the gambler's fallacy, a bias that assumes persistence in gambling will eventually result in winning.

Rothbaum, Weisz and Snyder (1982) observed two types of the 'illusion of control': 'primary' and 'secondary'. Illusory primary control relates to strategies aimed at physically

changing the game environment, whereas illusory secondary control involves attempts to influence outcomes through intangible factors such as superstition. Ejova, Delfabbro and Navarro (2013) extended this theory and examined the construct validity of a conceptual model that postulates that gambling-related beliefs converged across two broader belief structures relating to the illusion of control. Structure one, the illusion of primary control, is founded upon behaviours and beliefs on the gambler's fallacy. The 'illusion of secondary control' involves behaviours relating to beliefs about supernatural forces. Their results found that model predictions about the relationships between belief sub-categories were supported and implicated typologies of erroneous gambling-related beliefs and that the prominence of the illusion of control and the gambler's fallacy in existing typologies is not a coincidence (Fortune & Goodie, 2012; Goodie & Fortune, 2013). Ejova et al., (2013) supported the earlier study of Rothbaum et al., (1982), in observing that the illusion of control is not a one-dimensional construct. In support of these findings, older adults gambling on EGMs, were shown to believe they can physically change the gambling environment and that persistence in play will result in a win (Manoso et al., 2004). Fundamentally, pathological gambling is closely related to the perception of the player that, to some extent, he or she can control the outcome of his or her bets (Goodie, 2005).

Bingo players (Dixey 1987) appear to attempt to influence outcomes based on luck in line with illusory secondary control. Griffiths and Bingham (2005) observed bingo players are likely to have a high rate of superstitious behaviours such as reading horoscopes, touching wood, avoiding walking under ladders and changing pen colours. Superstitious behaviour designed to control luck has been observed among players of bingo and dice games (Dixey, 1987). For example, bingo players purchase cards or boards in a particular order, sitting at the table/seat, wearing lucky clothes and using lucky pens (Dixey, 1987).

Older adult gamblers displaying either type of illusory control, primary or secondary, appear at risk to development of problem gambling. It is proposed that older adults applying these cognitive distortions are effectively gambling with an impaired rational cognitive judgement and are likely to continue gambling despite losing because of belief that persistence and superstitious behaviour will positively affect their outcome.

Furthermore, in combination with other factors such as having the time and disposable income this increases the likelihood that this age group are likely to develop gambling problems (McNeilly & Burke, 2000).

Rogers (1998) stated that the majority of such heuristics are founded upon a poor grasp of the concept of randomness and probability. There also appears to an overwhelming preoccupation with gambling with disordered gamblers exhibiting, erroneous cognitive processing (Richard & Humphrey, 2013). Therefore, older adults are at risk for problem gambling as their behaviour has potential to be sustained by distorted gambling cognitions (Emond & Marmurek 2010; Lund 2011; Myrseth et al. 2010).

Delfabbro and Winefield (1999) stated that because of technological advances in EGMs the gambler is likely to experience a near miss after every gamble. Therefore, persistent play, catalysed by erroneous cognitive beliefs by older adults engaging in EGMs will result in a near miss which is best described as a near win, and it motivates continued gambling because it causes frustration and cognitive regret which impairs an individual's ability to think logically and apply rational decisions whilst gambling (Kahneman & Tversky, 1982). However, a near miss is influential to induce and maintain chasing behaviour (Dickerson, 1990) and in turn, the manipulation of near-miss frequencies on EGM play modulates

gambling persistence (Cote, Caron, Aubert, Desrochers, & Ladouceur, 2003; Kassinove & Schare, 2001; MacLin, Dixon, Daugherty, & Small, 2007). Worhusky, Malison, Rogers and Potenza (2014) observed that near miss effects have been shown both in problem gamblers and in cocaine addicts compared to healthy controls during a simulated EGM experiment.

Fundamentally, factors impairing rational cognitive judgement during the chasing phase are related to near misses and attitudes to risk taking. Billieux, Van der Linden, Khazaal, Zullino and Clark (2012) observed that near-misses provide a signal of imminent success, although in reality it is an erroneous interpretation under conditions of pure chance. By providing a false signal of skill acquisition, near-misses foster the desire to play again. This is likely to induce chasing, by definition, refers to increasing the frequency and size of one's bet in response to relative losses. Older adults are more vulnerable to the impact of chasing losses as they are likely to gamble irreplaceable savings, and due to retirement find it more difficult compared to younger aged gamblers to recoup financial loss (McNeilly & Burke, 2000). It is suggested that after incurred losses cognitive processes become distorted, which accounts for irrational gambling behaviour, in attempting to recoup past losses. O'Connor (2000) observed that gamblers while chasing, gambled less sensibly and adopted poor strategies related to the pressure and the need to win back the money previously lost.

It is proposed that developing a better understanding of an older adult gamblers' subjective judgments of control seems a necessary step in clarifying the etiology and maintenance of disordered gambling behaviour. Specifically, as older adults appear as likely as younger

aged gamblers to make distorted judgments related to their gambling behaviour. Furthermore, disordered gamblers are more likely than normal controls to endorse ritualistic and superstitious behaviours that are believed to influence gambling outcomes (Grant & Potenza 2006; Jacobsen, Knudsen, Krogh, Pellesen & Molde, 2007; Toneatto & Gunaratne, 2009). Identifying coherent age related typologies of cognitive heuristics in older adult gamblers, based on erroneous cognitions, will aide therapists treating older adult clients. From gaining an understanding of types of cognitive distortions therapists can use this approach to develop typologies of beliefs for discussion with their older adult clients. Walker (2005) stated that changing gamblers' erroneous cognitions including illusions of control, superstitions about chance, selective recall of winnings and belief in special skills may lead to a reduction in problematic gambling behaviours. However, before reductions in problem gambling in relation to erroneous cognitions can be achieved within older adult gamblers this area of research requires further exploration.

1.5 Summary and Conclusions of Literature Review

The review has outlined critical issues related to the study of older adult gambling behaviour; identifying that relatively little is known about motivation for gambling behaviour and the aetiological processes involved in the development of disordered gambling in this population. Furthermore, it was shown that gamblers and disordered gamblers are heterogeneous, constituting in a plethora of behavioural and demographic variability observed across age groups, gender, and culture (Richard & Humphrey, 2013). Therefore, it is important to consider that as more information accrues on the gambling

behaviour of British older adults it may be possible to tailor to their specific needs and inform clinical sectors resulting in more efficacious treatment approaches.

In identifying the main instruments used to assess problem and pathological gambling few have examined the motivations of older adult gamblers, and they do not appear to represent the age-related characteristics underlying problem gambling (Wiebe & Cox, 2005). It was identified that discrepancies in a standardised measure may be related to demographic differences, cultural, geographical and population differences across subgroups of gamblers (Clarke & Clarkson, 2009).

With the emergence of internet gambling, current figures have shown that older adults are likely to contribute to increases in online gambling prevalence (Alberghetti & Collins, 2015) and due to its convenience, accessibility and anonymity has potential to increase the prevalence of gambling and problem gambling within this demographic (Wood & Williams, 2009). In the context of changes in UK legislation allowing the gambling industry to expand extensively, it is likely to substantially increase availability of gambling across all ages, and specifically within vulnerable subgroups such as older adults. It has been demonstrated that older adults gamble primarily to combat social isolation, escape boredom (Clark & Clarkson, 2008), combat loneliness, forget about problems and bereavement (Martin, Lichtenberg, & Templin, 2011), relieve tension (Clarke, 2008) and cope with depression (McNeilly & Burke, 2002). Based on these contentions, motivations to gamble for these reasons is likely to increase the prevalence of gambling and disordered gambling within the older adult community.

It was observed that gambling behaviour is a multi-faceted behaviour that is heavily contextually dependent and cannot be adequately explained from a single perspective (Griffiths & Delfabbro, 2001). Tirachaimongkol et al., (2009) extended upon this proposition and advanced the hypothesis that the etiology (biological, psychological, and sociocultural factors) of problem gambling amongst older adult's paralleling two of the three pathways in the 'Pathways Model' (Blaszczynski, & Nower, 2002) which advocates an aetiological process that pathological gamblers engage.

Tirachaimongkol et al. (2009) proposed that three clusters of risk factors, characteristic of the older adult problem gambler, include individualistic elements such as unpleasant emotions, social and environmental factors and neurobiological agents affecting behavioural regulation from aging or substance related impairments including impaired decision-making, increased risk taking and impaired judgements. The Three Cluster model (Tirachaimongkol et al., 2009) represents an important shift in conceptual understandings of older adult disordered gambling behaviour as it considers the disorder away from a singular paradigm. Nevertheless, it is important to be cognisant that the model must be empirically validated in older adult populations, as it is primarily based on a meta-analysis, therefore it cannot be accepted with confidence as a valid model. However, it is an important step forward in identifying older adult gamblers, like their younger counterparts, are not a homogenous group. Put simply, an older adult playing an EGM and a young male playing an EGM are both gambling on the same product, yet it is probable that the experience, in terms of motivation and reinforcement, is different and cannot be explained collectively. An older adult may be motivated because he/she is retired and has available time to fill and is lonely compared to an adult that is employed and plays solely to win money.

It was observed that from the beginning of the 21st century researchers and clinicians have conceptualised pathological gambling behaviour within a multi-dimensional paradigm. It is acknowledged that explanations and understandings of the aetiology of pathological gambling exist from multifarious psychological disciplines including behaviourism, cognitive and personality theorists and psychodynamic approaches. Investigating the environmental factors, sociological and biological and reinforcement processes, and cognitive factors will advance understandings of gambling behaviour and disorder across all ages.

1.6 Aims of thesis

As acknowledged, there are few studies regarding the underlying motivations for British older adult gambling behaviour. Although international studies have identified older adult gambling behaviour, it is important to gain a British perspective as motivations may not be generalisable across products, culture and group differences (Lee et al., 2006; Neighbors et al., 2002). It was relevant to determine whether British gambling motivations differed significantly from other Western populations.

It appears that older adult gamblers are likely to be experiencing gambling-related harm however it is observed there are no conceptual models available from which to develop responsible gambling strategies implementing prevention, intervention and treatment strategies. Therefore, this issue cannot be addressed effectively.

Models regarding the nature and course of problem gambling development do not differ across age groups, therefore older adults are amalgamated within general adult populations. It also remains unknown whether discrete or unique risk factors predispose certain subgroups of older adults to develop problem gambling specifically. Therefore, this thesis is explorative in nature and aims to identify the important processes in older adult gambling and problem gambling behaviour such as development and maintenance. This thesis proposes that older adult participation in gambling should be considered as a continuous variable. More specifically, older adult gambling behaviour such as participation can range from low to high frequency and at many points along this continuum this age group can experience problems associated with gambling.

Research Objectives:

1. To explore and understand British older adult gambling behaviour and motivations
2. Identify psychological and physical health factors as predictive risk factors for older adult problem gambling behaviour
3. To explore and understand the phenomenological experiences of British older adult gamblers
4. Evaluate findings to gain a clearer understanding of British older adult gambling behaviour in order to suggest effective responsible gambling strategies.

Chapter 2

Gambling Behaviour and Motivation across UK Older Adult Populations

2.1 Introduction

Until the publication of the British Gambling Prevalence Surveys (BGPS: Sproston, Rens & Orford, 2000; Wardle et al, 2007; Wardle et al, 2011) there had been limited knowledge regarding the level of gambling participation in British older adults aged 65 years and older. It has been observed that British older adult gambling prevalence has steadily increased as past-year by age estimates have shown that gambling participation increased from 52% in 1999 to 57% in 2007, increasing to 63 % in 2010 within the over 75 year age category (Wardle et al., 2011). A steady increase was also observed amongst the 65- 74 year age category and past year gambling participation (Wardle et al., 2011). Having identified this increase in gambling activity it is proposed British older adults are vulnerable to the adverse impacts of gambling, including the development of a gambling disorder. This means British older adults may develop an inability to control their gambling behaviour (e.g., problem and pathological tendencies), leading to significant psychosocial consequences for the individual (APA, 2013).

It was observed that 0.4% of past year older adult men and 0.2% of older adult women in the 65-74 year age category met criteria for problem gambling and although this figure is smaller in comparison to younger aged adults (e.g., 2.8% for men aged 25-34 years) this demographic have potential to constitute a specific at risk group (Wardle et al., 2011). It is probable given age-related lifestyle factors such as change in family structure, which

distinguishes this demographic's motivation to gamble (Clarke, 2008; McNeilly & Burke, 2002).

Exploring British older adult gambling behaviour will generate clearer understandings of increasing participation in gambling activities, motivation in particular, and will aim to highlight risk factors that promote and sustain problem gambling. This may eventually lead to the development of interventions aimed at reducing gambling-related harm amongst this subgroup. However, at present there is limited literature available to explore motivation and older adult gambling behaviour, in a British context. In general, there is a demographic that is under-researched in comparison to younger gamblers (Subramaniam et al., 2015; Tse, Hong, Wang, & Cunningham-Williams, 2012). Tse et al., (2012) observed from their systematic review, that out of 75 older adult gambling studies none had UK origins. As a consequence of this paucity of UK-based research it is not possible currently to identify cognitive and behavioural gambling patterns of British older adults with any confidence.

Gambling availability in the UK has increased through the passing of The Gambling Act 2005. An increased accessibility and availability to different types of gambling opportunities in the UK suggests there is a need to understand the different motivational dimensions of UK older adult gambling behaviour. Binde (2009) stated that understanding motivations for gambling is critical to research that aims to uncover determinants of gambling behaviour. Chen, Shoemaker and Zemke (2013) observed that motivations are not generalisable across different games, therefore acquiring knowledge surrounding all aspects of British older adult gambling behaviour is important; specially, preferences for type of gambling activity. Therefore, acquiring knowledge which effectively increases motivation to gamble will help provide direction for strategies to minimise harm.

Employing a UK-specific approach was applicable to the study as cultural and group differences affect motivation to gamble (Lee, Lee, Bernhard, & Yoon, 2006; Neighbors, Lostutter, Crouce, & Larimer, 2002). Medeiros et al., (2015) identified that prevalence and acceptance of gambling across different cultures varies, questioning how and to what extent culture affects individual gambling behaviour. Therefore, as more information is gained on the gambling behaviour of UK older adults it will be possible to tailor to their specific needs and inform clinical sectors resulting in more efficacious treatment approaches.

2.1.1 Literature surrounding validity and an appropriate problem gambling tool for older adults.

Lucke and Wallis (2006) stated that in order to shape the future direction of research that examines the correlation between gambling and the overall health of older adults significant gains must be made in developing additional assessment tools that incorporate cultural and socioeconomic variables targeted toward the elderly population. Existing studies focus on the cognitive and individualistic features of older adult problem gamblers with limited attention focused on broader social perspectives (Lucke & Wallis, 2006). In the process of understanding the increase in British older adult gambling participation there is a need to develop more conceptual understandings of the behaviour. Therefore, it may be relevant to consider variables unique or specific to this demographic, for example, physical deterioration and psychological wellbeing, to gain a broader understanding.

Williams, Volberg and Stevens (2012) observed that an assortment of culturally varied instruments and screens are validated to assess problem gambling. However, tools specific to older adults are notably absent. Wiebe and Cox (2005) stated that gambling assessment tools in their current form have questionable validity for use with older adults.

Subramaniam et al., (2015) observed that instruments used to measure gambling behaviour have been developed for the younger adult population, highlighting an emergent need to refine current instruments or develop new tools, validated for older adults. Petry (2002) illustrated the need for unique interventions and treatments that focus on gender and age-specific issues for pathological gamblers. Therefore, due to age-related differences it is probable older adults will display alternative motivations to gamble compared to younger gamblers. Amalgamating older adults within the general population may not identify distinct understandings of gambling behaviour of this demographic. Fundamentally, this is problematic as, to date, unique problem gambling vulnerabilities in older adult populations may not be identified (Nower & Blaszczynski, 2008). A first step is to identify differences, which is challenging given that older adult gambling research is relatively scarce (Lister & Nower, 2013).

Across the literature, studies have observed increased prevalence rates of gambling and gambling disorder in older adults (Abbott & Volberg, 2000; McCormack, Jackson, & Thomas, 2008; Moore & Neal, 2001; Phillippe & Vallerand, 2007; Stitt, Giacomassi, & Nichols, 2003; Wiebe & Cox, 2005). Lister and Nower (2013) proposed that the proportion of problem gamblers will vary, given differences in measures, classification schemes, sampling strategies and age thresholds. Currently, an international comparison of prevalence rates is complex due to the lack of standardisation in measurement.

Therefore, the consequences of not employing a valid tool means older adults are at an increased risk of under or over screening for problem gambling. For example, items from the South Oaks Gambling Screen (Lesieur & Blume, 1987), such as whether respondents have missed work due to gambling, may not apply to retired older adults (Wiebe & Cox, 2005). Furthermore, the SOGS has been used for assessing problem gambling prevalence in older adults ten times out of 25 in previous gambling studies (Subramaniam et al., 2015). Therefore, the results of existing gambling tools used amongst older adults are subject to considerable criticism as it is probable older adults may be an over or under-represented group of problem gamblers, not just within Great Britain but internationally.

However, development of the Windsor Screen for Older Adults (WSOA: Fraser, Frisch & Govoni, 2004), has provided a suitable platform to identify those at-risk of problem gambling and represents another important beginning in the generation of a screen specific to this demographic. Subsequent research is required to identify more precisely the psychometric properties of the WSOA (Fraser et al, 2004), highlighting validity concerns in existing screens. The WSOA currently has methodological limitations, it has not been tested beyond its initial validation study yet the authors advocate for it to be used alongside other gambling screens. Current knowledge consists of attempts to adapt existing measurement tools used within general populations that currently do not appear to represent the characteristics underlying problem gambling among older adults (Williams et al., 2012). Due to the highlighted validity concerns and methodological limitations of current measurement tools, the need for the development of a reliable and valid measurement tool is clearly evident. However, in order to develop a sub-population specific measurement scale for problem gambling a detailed understanding is required of relevant age-specific gambling behaviour, including motivation, patterns, frequency and

preferences for type of gambling activity. At present, little is known about problem gambling in British older adults, particularly when problem gambling begins in later years (Lister & Nower, 2013). The onset of late life gambling for this demographic appears to be associated with unique factors such as bereavement, retirement, socialisation and physical degeneration (Subramaniam et al., 2015).

Therefore, it is perceived that emotionally vulnerable older adults are likely to be motivated to gamble to fulfil psychological needs associated with factors related to specific types of motivation including social isolation, bereavement and loneliness (Lister & Nower, 2013; Martin, Lichtenberg, & Templin, 2011; McNeilly & Burke, 2002; Southwell, Boreham, & Laffan, 2008). It is proposed these types of vulnerabilities may increase the likelihood of problem gambling, for example, specifically among older adult EGM players by increasing their use of gambling as a way of escaping negative emotional states (MacLaren, Ellery & Knoll, 2015a). The repetitive and continuous nature of EGMs may be a critical attraction for 'escape gamblers' (MacLaren et al., 2015a). Harrigan, Brown and MacLaren (2015) stated that electronic bingo games have structural characteristics that make them similar to modern EGMs that feature multiline slots games. The features include a fast and continuous gaming experience, with player adjustable win size and reinforcement rate, a high frequency of losses disguised as wins, and highly salient near misses. Some of these games also have bonus rounds and provide players with a list of recent wins. They concluded that gambling authorities should be aware that the inclusion of bingo EGMs in existing bingo venues have potential to increase problem gambling among established communities of bingo enthusiasts.

Potenza (2013, 2014) stated that researchers have learned a great deal in recent years about the nature of gambling disorder, as well as the features and characteristics of types of gambling activities. Certain types of games are more likely to increase problem and pathological gambling among different types of players (Dixon et al., 2015). It is argued that gambling in association with specific age-related vulnerabilities, and a tendency for type of gambling activities such as EGMs and electronic bingo (traditionally played in pen and paper form) is likely to increase risk for problem gambling in UK older adult gamblers because of the structural similarities associated with electronic forms (Harrigan et al., 2015).

This is of concern for emotionally vulnerable older adults (Balszczynski & Nower, 2008) that gamble regularly for leisure. In comparison to behaviourally conditioned pathological gamblers (whom have no existing pre-morbid psychopathology), emotionally vulnerable gamblers are prone to pre-morbid states including anxiety and depression (Blaszczynski & Nower, 2008). Therefore, it is probable that the treatment of emotional older adult problem gamblers is more complex compared to younger aged treatment groups. Furthermore, across the literature, older adults are identified as a group that less likely to access to treatment compared to other age groups (McKay, 2005).

An inductive approach was suitable for this study as it is proposed that the variables included within current international older adult gambling studies may not include relevant motivational factors specific to those aged 65 years and older. As the term older adult is not clearly defined across the gambling literature (Petry, 2002) it is proposed that

motivations may vary across specific age categories, including cultural variations within gambling behaviour (Tse et al., 2012).

Therefore, the first stage of the research was to gain understanding why UK older adults participate in gambling; moreover, the motivational factors that drive frequent gambling. This information will inform, develop and direct research in subsequent studies of the research programme.

2.2 Hypotheses

A Grounded Theory approach was utilised to enable an emergent theoretical framework to conceptualise the motivational gambling behaviours for British older adults. Grounded Theory enables theory to emerge inductively. Strauss and Corbin, (1990, p.24) described it as *“a qualitative research method that uses a systematic set of procedures to develop an inductively derived Grounded Theory about a phenomenon”*.

Literature in developing theoretical propositions regarding older adult gambling behaviour and cognition is limited. It is relevant to understand the gambling behaviour of older adults in order to understand increased prevalence rates. Strauss and Corbin (1990) stated that Grounded Theory is effective in generating knowledge of a social phenomenon that is under-researched because it produces a conceptualistic understanding of the individuals, interactions and interrelationships. Therefore, the most appropriate methodology to achieve this objective is Systematic Grounded Theory (Strauss & Corbin, 1990) in which theoretical propositions must emerge inductively.

2.3 Methodology

This study adopts the Straussian approach, a constructivist grounded theory based upon an emic position, (referring to an inductive or bottoms up approach; Strauss and Corbin, 1990). The process involves co-constructing the data through adopting a position of mutuality and partnership between participant and researcher and creates the theory of a social process using their own perspectives, values, privileges, interactions and understanding of the social realities (Levy, 2006). However, it is noted that a complete etic approach risks blinding oneself to potentially new and ground-breaking concepts, yet, considering it is likely researchers approach studies with some previous ideas, perspectives, and commitments it may be impossible to be purely emic (Levy, 2006).

Adopting an appropriate grounded theory approach is dependent upon understanding the philosophical foundations of the social processes and structures (Taghipour, 2014). Based upon a coherent understanding of the philosophical foundations and while adopting an appropriate grounded theory approach this study rejects the objectivist approach as research data surrounding British older adult gambling behaviour is insubstantial.

Therefore, theory cannot be driven from something that has no valid existence.

Furthermore, current older adult gambling literature is limited and is not British in nature.

It was relevant to determine whether British gambling motivations differed significantly from other Western populations. Francis et al. (2015) observed that gambling motives appear to differ according to socio-demographic factors, such as sex, age, employment status, and highest education qualification.

Grbich (2007) proposed that grounded theory methodology is appropriate “*when there is a need for new theoretical explanations built on previous knowledge to explain changes in the field*” (p. 70). The ultimate aim of a grounded theory study is to produce new theory

that is grounded in data collected directly from participants on the basis of their lived experiences (Fassinger, 2005).

An objectivist view assumes an external reality awaiting discovery and an unbiased researcher who records facts about it (Charmaz, 2000). A constructivist approach acknowledges grounded theory is not free from bias yet considers how the researcher collects and processes the data. Constructivist grounded theorists take a reflexive approach towards the research process and consider how their theories evolve and understand that any analysis of data is contextually situated in the time, place, culture and situation. In this view grounded theorists may import pre-conceived ideas into their research.

Fundamentally, the researcher may remain unaware of any starting assumptions.

However, constructivists are aware of these presuppositions and consider how these may affect their research and therefore rely on their deep understanding of both method and the process. These include an understanding of their ontological (view of social reality) and epistemological (validity of knowledge) position. Glaser (2002) refers to data as something separate from the researcher and implies that data are untouched by researcher's interpretations. The outcome of a grounded theory study is an emergent theory "*from the data that accounts for the data*" (Charmaz, 2008a, p. 157).

Strauss and Corbin (1990) stated that the research question should take the form of identifying the phenomena that is to be studied and also take existing knowledge i.e., what is known about the area of research already either through past experiences or culture. Adopting Strauss and Corbin's (1990) approach by using external sources and creating

theoretical sensitivity created knowledge to develop hypotheses to understand British older adult gambling behaviour.

Glaser (1998) argued that literature should be introduced once the emergent theory is fully developed. At present there is no existing literature available to affect the clarity of developing the emergent theory as within this study knowledge specific to British older adult gambling behaviour was unavailable. Therefore, theoretical propositions remain grounded in the data. External sources of knowledge were used as additional data before the emerging theory was developed to stimulate theoretical sensitivity. Theoretical sensitivity is the ability to recognise what is important in data and to give it meaning. It helps to formulate theory that is faithful to the reality of the phenomena under study (Glaser, 1978).

Systematic Grounded Theory (Strauss & Corbin, 1990) was employed to enable an emergent theoretical framework to construct theory about British older adult gambling behaviour such as motivation and reward. This is achieved through a process of data collection that is inductive in nature. The study has no preconceived ideas to prove or disprove regarding British older adult gambling behaviours. To date, literature and theoretical positions regarding the effects of gambling-related harm in late adulthood are limited, therefore, theoretical positions must emerge inductively. Moreover, it is not justifiable to commence the study with a predetermined theory.

This study adopts an interpretive tradition and follows the constructivist approach placing priority on the phenomena of study and views both data and analysis as created through shared experiences and relationships with participants (Charmaz, 2001). Constructivists

study how and why participants construct meanings and actions in specific situations. Social interactionist Blumer (1969) stated meanings are not innate in concepts. For example, increased prevalence rates inform us British older adults are participating in gambling more but does not explain causation. An objective is to identify this population's underlying behaviour or motivation to gamble in order to establish cause for increased prevalence. The semi-structured interview method utilised in this study was designed to facilitate social interpretations by prompting older adults to talk about their gambling experiences.

Constructivist approaches to grounded theory recognise that people create and maintain their own realities by seeking understanding of the world in which they live, and by developing subjective meanings of their realities. Grounded theory researchers can only claim to have interpreted a reality, dependent on their own experience and participants accounts of their own experience, rather than a uni-dimensional, external reality (Charmaz, 2000).

An objectivist approach to grounded theory contrasts with the constructivist approach. Objectivist grounded theory resides in the positivist tradition attending to data as real and does not attend to the process of the production of the data. Objectivist grounded theory erases the social context from which data emerge, the influence of the researcher and interactions between researcher and participants. Objectivist grounded theorists assume that data represents objective facts about a knowable world. Stating that data already exist in the world; researchers find them and discover theory from them (Charmaz, 2000).

Taghipour (2014) highlighted that grounded theory has two different perspectives and that objectivist grounded theory is deep rooted in post-positivist epistemology; whereas constructivist grounded theory has its roots in an interpretive tradition and relativism. The constructivist epistemology rejects the objectivists' view of human knowledge contending that there is no objective truth waiting to be discovered, contending that truth therefore exists only through interaction with the realities of the world. This view assumes that meaning is constructed rather than discovered (Levy, 2006). Constructionism, by definition, permits the researcher to explore the views and comprehension of the different participants within the subject context and identifies that each individual may have experienced a different understanding of the same situation (Charmaz, 2006).

Participants

In total 17 participants were interviewed via semi-structured interviews until theoretical saturation was achieved. The *mean age* of participants was 76.82 (*SD*=6.32). The study sample consisted of 3 males and 14 females. Purposive sampling was applied to reach a targeted sample to gather rich data (Patton, 1990). Patton argued that "*Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research, thus the term purposeful sampling*" (Patton, 1990, p.169).

Participants were located via non-commercial and commercial gambling venues across a mixture of rural and urban districts including cities, towns and coastal resorts. The recruitment strategy achieved a varied sample of British older adult gamblers. Participants were not selected on demographics or intensity of gambling involvement. Inclusion criteria specified adults needed to be aged 65 years or above, and be able to provide informed consent.

Procedure

An internet search identified older adult commercial and non-commercial gambling venues. Gate-keepers of non-commercial and commercial gambling establishments were contacted via telephone, e-mail or in person. Recruitment strategies included contacting gate-keepers of non-commercial community groups via social clubs, friendship clubs, lunch clubs, non-commercial bingo halls and church groups. Gate-keepers were fully briefed about the research study including the procedure. The format of visiting a venue included introductions, a presentation explaining the objectives of the investigation and ethical rights of participants if they decided to take part. It was clearly explained that if participants decided to take part they would be asked to talk about their gambling behaviour and experience of gambling as an older adult.

If participants decided they would like to be interviewed about their gambling experiences, at a location of their choice, they were able to inform the researcher during the visit or contact the researcher at a later date. Prospective participants provided their contact details and arrange a convenient time for the researcher to call them. During this contact an appropriate and convenient time and location was arranged for the researcher to interview the participant. Alternatively, a card was passed on with the researcher's details if the prospective participants needed time to consider if they wanted to participate.

Expression of interest

Upon receipt of interest in participating in the study, participants were briefed both verbally and in written format regarding what would be expected of them, their responsibility during the study, their ethical rights as participants and the study objectives.

Informed Consent

The hard copy of the informed consent sheet provided details of the study aims, inclusion criteria, type of information to be discussed and acknowledgement of participant's rights throughout the entirety of the study. This was also reiterated in verbal format. After the procedure of informed consent in which the participant read, understood and signed the informed consent document the data was able to be collated. Participants were reminded that they were able to withdraw from the study at any time. Furthermore, participants were able to remove their data up to four weeks after participation.

Confidentiality

All interviews were conducted in participants' homes and were recorded via Dictaphone. Audio recordings were destroyed after verbatim transcription of the data. All participants were assured anonymity, and identifiable data would be changed such as names and locations. After the interview all participants were fully debriefed. Participants were provided with an identification number during their debriefing, to be retained to identify and remove data of participants wanting to withdraw from the study at a latter date. The researcher left full contact details including the researcher's supervisor's details included on the debrief sheet if the participant wished to discuss a matter within in higher authority.

Commercial and Non-commercial recruitment

Non-commercial legal gambling venues are non-profit clubs serving communities run by volunteers. Gambling profits were often raised for charitable causes. Venues provide older adults with social interaction, affordable entertainment, food and beverages with ease of

access. In contrast, commercial gambling is a profit based industry therefore, gambling and services such as food and drink and high frequency gambling are priced at a profitable rate.

A commercial gambling company permitted use of their venue as a recruitment site under specific conditions. These included not prohibiting customers from play and not asking questions directly related to how much they spend on gambling. The commercial research manager contacted their allocated recruitment venue prior to an arranged visit, informing the club team leader to introduce the researcher to potential recruits. Older adult gamblers were familiar with team leaders, therefore, strengthening the recruitment process. It is probable that collaborating with the commercial gambling industry will strengthen recruitment strategies and data collection. A verbal non-disclosure agreement between the research manager and researcher was instigated to protect the operator's anonymity.

Ethical considerations - Beneficence and Non-Maleficence

The semi-structured interview schedule was monitored to observe for any possible discomfort which questions may create. During the interview if any discomfort was observed via verbal or nonverbal cues, in the interests of the participant the interview would be terminated. There were no physical demands on participants although the researcher was aware that older adults may tire easy or be slowed up due to physical illness related to their age. All participants were monitored closely for signs of discomfort, if any was detected this was acted up on by taking time out or refraining from the interview. Within the study all participants were able to complete the semi-structured interview comfortably. The interview design caused limited psychological distress due to the nature of talking about emotive topics relating to their gambling behaviour.

2.3.2 Data collection and analysis

Participants were interviewed within their home, providing a safe and comfortable environment for participants to disclose their gambling experiences and express their opinions. Semi-structured interviews were chosen as the appropriate primary method for data collection. Interviews are a widely used tool to access people's experiences, perceptions, attitudes, and feelings of reality (Patton, 2002). A semi-structured technique instead of an unstructured approach was applied in order to probe older adult gambling experiences. The use of semi-structured interviews, consisting of open-ended questions encouraged the interview to unfold organically. Participants were interviewed with subsequent questions being developed in line with the information from participants' responses, until theoretical saturation was achieved. In Grounded Theory, data analysis has a well-defined process that begins with basic description and moves to conceptual ordering and then on to theorising (Patton, 2002).

The Straussian approach for data analysis was adopted due to the clearer guidelines for data analysis (Strauss & Corbin, 1990). Analysis of the data commenced with open coding as transcripts were systematically analysed sentence by sentence to allow grounded codes to emerge from the data by putting aside any presuppositions and previous knowledge. Coding was not simply part of data analysis; rather it was the "*fundamental analytic process used by the researcher*" (Corbin & Strauss, 1990, p. 12). The objective of open coding is to identify behavioural patterns grounded in the data and generate a multitude of categories to aide in the identification of important concepts in the data that require further investigation. The categories were sometimes words elicited by the participants themselves, what Strauss and Corbin (1998) called "*in vivo*" language. The conceptual

patterns that emerged from open coding guided the researcher where to further focus the study therefore directing the study to the next stage.

Glaser (1998) stated "*memos are the theorizing write-up of ideas about substantive codes and their theoretically coded relationships as they emerge during coding, collecting and analysing data, and during memoing*" (p.121). Theoretical memos were written in the early stages of data collection and during the open coding process. Theoretical memos tracked ideas that develop via conceptual comparison.

Theoretical sampling was directed by the emerging theory. It was evident from open coding the majority sample consisted of older adult female bingo players. To maintain a varied sample of older adult gamblers it was considered important to include both sexes and alternative types of gambling such as slot machines and horse racing. A further three older adult male gamblers agreed to participate in the study, making a sample of 17 in total.

The second stage of data analysis is axial coding, achieved through systematic analysis and constant comparison of the data. In axial coding, four analytical processes occur: (1) continually relating subcategories to a category, (2) comparing categories with the collected data, (3) expanding the density of the categories by detailing their properties and dimensions, and (4) exploring variations in the phenomena. Strauss and Corbin (1998) described axial coding as "*the process of relating categories to their subcategories... linking a category at the level of properties and dimensions*" (p. 123). A coding paradigm involving conditions, actions and interactions, and consequences actualises this process.

The focus of axial coding in this study was to create a model that details the specific conditions that give rise to a phenomenon's occurrence (Strauss & Corbin, 1990).

The final stage of the three stage coding process was initiation of selective coding.

Primarily, selective coding is a commitment to coding data in relation to the identified core variable. The purpose of selectively coding around a core concept is to pull everything together in order to offer an explanation of the behaviour under investigation. The theoretical proposition to emerge from the analysis were concluded as theoretical saturation was achieved. Finally, the field notes, memo cards, and final theoretical propositions of the first author were evaluated by the second author to observe whether they were representative of the data transcripts.

2.4. Grounded Theoretical Framework of British Older Adult Gambling

Table 1 <i>Emergent Categories from Selective Coding: Core Motivation and Experience of Gambling for British Older Adults</i>	
Limited Deterrents Facilitation of Gambling Increased Availability and Accessibility	Psychological Stress Reduction Temporary Escape for Psychological Discomfort Social Isolation Reduction
Physical Stress Mediation Temporary Escape from Age-Related Physical Degeneration	Physiological Need Satisfaction Source of Cognitive and Emotional Stimulation

2.4.1 Theoretical findings

The core concept of the emergent theory presented in Table 2.1 proposed that British older adults participate in gambling as a mechanism to alleviate distress experienced from psychological and physical lifestyle changes associated with the ageing process.

Grounded theory identified that gambling motivation to include the need to be cognitively and emotionally stimulated, and to escape, temporarily, age-related psychological and physical stress. Furthermore, it was observed that gambling environments were highly accessible and the gambling venue, including both commercial and non-commercial types, provided feelings of well-being through familiarity and a sense of community in an age appropriate environment.

2.4.2 Theoretical Propositions:

As theoretical saturation was achieved, four theoretical propositions emerged in relation to understanding gambling motivation for British older adults. The emergent theoretical propositions presented a framework of behavioural processes accounting for data observed.

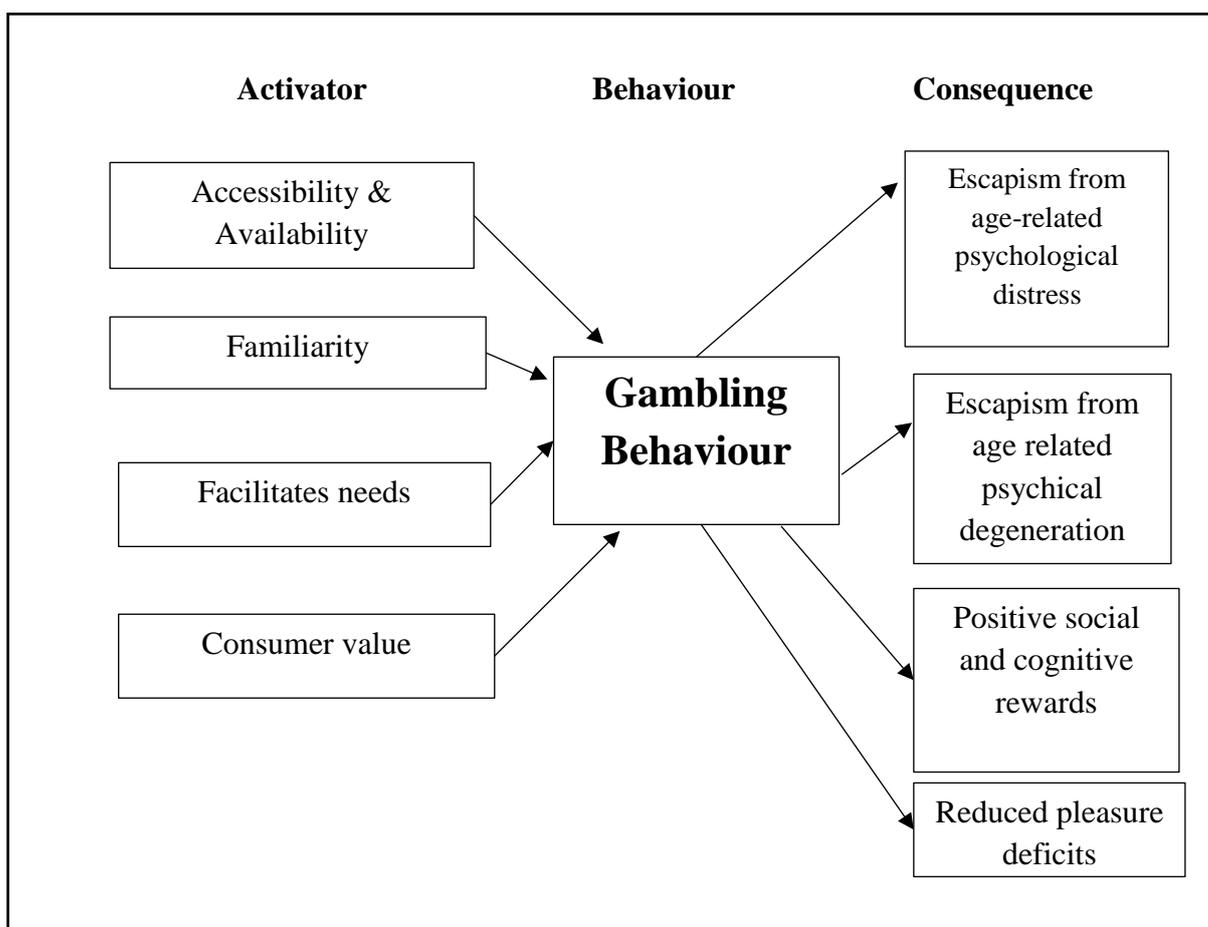
Theoretical proposition 1: Gambling has limited deterrents in participation because of high accessibility and availability in comparison to alternative leisure activities.

Theoretical proposition: 2 Gambling motivation provides temporary escape from psychological stress caused by social transition associated with ageing; with specific reference to loneliness, bereavement and retirement.

Theoretical proposition 3: Gambling motivation comes from the need to escape discomfort associated with physical degeneration.

Theoretical proposition 4: Gambling motivation is an attempt to reduce social and cognitive deficits, including peer group interaction and esteem as customer and stimulating cognitive processes including information processing.

Table 2 Significant concepts to emerge in relation to motivation increasing gambling participation in British older adults.



2.4.3 Theoretical proposition 1: Gambling has limited deterrents in participation because of high accessibility and availability in comparison to alternative leisure activities.

Patterns emerged from the data showing the central reason that British older adults choose to gamble is reduced barriers to participation, including: high availability, ease of accessibility and familiarity. Gambling behaviour was determined by various motivational factors that encourage older adults to become actively involved in different types of gambling activities. Analysis of the data revealed that availability and accessibility to gambling was multifaceted.

British older adults described how location, opening hours and public transportation elevated their gambling involvement and their capacity to attend gambling venues using their physical aides. Alternatively, transport was arranged with peers and family. This concept is explained in Extract 1:

“I have told my son he’s to fetch me at 4 o’clock, which quite often he does because I don’t like paying £3 for taxis. You know I hate it but I have to do it if I want to go. I have to do it, but he’s going, he picks me up at 4 o’ clock when he comes out of work”
[Participant N4, female, age 82].

Other factors that contributed to motivation to attend gambling venues was the provision of affordable hot meals and refreshments, mixed in with entertainment and socialisation.

Extract 2 shows this:

“There is a lot of elderly that go there on their own and they can get a proper dinner and everything” [Participant N5, female, age 77].

Some older adults with limited disposable income did however describe purchasing food and drink as being out of their budget. As a consequence of being unable able to afford food a female commercial gambler described how she avoided being hungry whilst gambling. Extract 3 illuminated how she improvised in order to gamble affordably.

“To tell you the truth I have even gone to the toilet and ate my sandwiches, which is a horrid thing to do” [Participant N4, female age 82].

British commercial and non-commercial gambling venues are situated in a wide variety of urban and residential areas. Preston, Shapiro and Keene (2007) stated that older adults are motivated to gamble because gambling venues are local and gambling patrons rarely travel to venues unless bus trips are provided to distant venues. British older adults used public transit as their primary mode of transportation to their nearest gambling venue, regardless if they lived in rural or urban areas. Extract 4 describes how transport is accessed within close proximity to the home.

“They sit there and catch a bus to the top of the road and they get of that bus on a 16 to go up to the bingo hall” [Participant N2, female, age 76].

The Lotto’s large jackpot potential motivated older adults to gamble, and it was not considered social gambling in comparison to the other forms of gambling that they

participated in. Purchasing lotto tickets including scratch cards was routine and incorporated into their daily schedules, as illustrated in Extract 5:

“Well it is easy to buy your ticket it. Sometimes it’s a nuisance if you got to go up get it and it’s raining or cold, so I usually try and get the tickets on a Monday when I get my pension” [Participant S7, female, age 74].

Gambling online was not as common as visiting venues in person, as older adults have limited access to a computer or smartphone and were largely computer illiterate. However, the computer illiterate older adults stated that if they did have access to a computer they would consider learning how to purchase a ticket online. Participants were asked if they knew how to gamble online. Extract 6 illustrated their attitudes to accessing online gambling;

“No, but I can find it, I would just put in, go into Google and put in National Lottery and it would come up you know, it will tell me everything I need to know, I have never done it but I know it will” [Participant N1, male, age 77].

Internet gambling provides many benefits including convenience of play within a safe, familiar environment. This may appear attractive to older adults as participants disclosed many restricting physical disabilities associated with ageing. A consequence of internet gambling for this demographic is that it reduces the social nature of gambling, however, to an extent, internet gambling has the capacity for social facilitation via computer mediated communication such as chat rooms. It is probable that future older adult generations will

have higher engagement with online gambling as they have been brought up in an era where computer technology is laden.

Ease of access and high frequency gambling were also relevant to commercial venues. Older adults stated that their primary motivation to gamble was for social interaction. However, EGMs were identified as having fewer opportunities for social interaction. The negative impact as a result of EGM activity is limited social interaction. Data revealed the negative costs associated with ease of access to EGM gambling and appeared aimed at this low socioeconomic demographic. EGMs were positioned near cash dispensers, in entrances and exits where it is probable older adults will wait for transport. Extract 7 suggested a pattern between type of gambling activity available in commercial gambling venues and ease of opportunity to gamble to *fill time*.

“He picks me up at 4 O’ clock when he comes out of work, now till he comes I am probably on the machine, so I am still spending my money” [Participant, N4 female, age 82].

Bingo players reported continuous accessibility to gambling, speakers providing bingo numbers were even situated in toilets and outside commercial venues. Themes emerging from the commercial venue data highlighted that they were perceived as an expensive form of gambling associated with ease of access and availability. Risk factors associated with problem gambling for this demographic appeared to be an opportunity to spend over a limited budget, as the opportunity to gamble was overwhelming and there was no respite in-between gambling as it was everywhere including outside.

For example, Extract 8 stated:

“There are machines out there (outside the building) and it is over the mike (microphone), just as if you are inside” [Participant N4, female, age 82].

In contrast, the positive impacts associated with non-commercial venues that were reported included reduced exposure to EGMs and low frequency gambling (e.g. bingo and raffles). Non-commercial venues were described as value for money including affordable entrance fees, refreshments and food. Extract 9, demonstrated that a significant element associated with community based gambling is socialisation:

“A couple of hours socialising with friends and I enjoy it. There is no other reason really, not with the money that they pay out, I mean it is nice winning a couple of bob, but it’s not like going to a massive bingo hall where you go for the money side. This is just a get together” [Participant S8, female, age 73].

Older adults reported spending more money gambling commercially compared with non-commercial gambling. McNeilly and Burke (2000) also found older adults in a commercial venue were more likely to access several different types of gambling with greater frequency and reported spending on average more on gambling each time they gambled compared to community venue gambling. They also observed community venue gambling activities were associated with low frequency gambling, cheaper entrance fees, beverages and food.

It appears from the data that British older adults are motivated to gamble due to external factors including increased availability and accessibility and appears to be a central reason

for gambling for leisure. Convenience may be considered as a central factor in gambling engagement which may have implications for the location of British gambling establishments.

2.4.4 Theoretical proposition 2: Gambling motivation provides temporary escape from psychological stress caused by social transition associated with ageing; with specific reference to loneliness, bereavement and retirement.

British older adults encountering major life social transitions including retirement, bereavement and the consequences of loneliness were motivated to gamble as a temporary psychological escape. Data revealed a different type of gambling motivation associated with emotional escape, identifying British older adults were experiencing emotional dissatisfaction. Many participants reported to experience loneliness, as well as experiencing distress in relation to various social processes related to ageing, such as retirement and changes in the family structure.

Fundamentally, as a result of various social processes related to ageing, their social network and social support was diminishing. For the participants, gambling was a distraction from perceived stress, providing social interaction and a form of leisure activity.

Extract 10 provides an illustration of the process:

“Going out to bingo was the thing that saved my life, I will tell you, because I have got nothing else. I didn’t go anywhere else” [Participant N4, female age 82].

British older adults gamble to experience the emotional escape they desire; therefore, it is probable they will learn to desire to gamble based on negative reinforcement. Achieving mood modification through social interaction was a powerful reinforcement to continue to gamble for many participants. Gambling is known to be effective in modulating emotion including escape from negative emotions. (Rockloff, Greer, Fay, & Evans, 2010). This is described in Extract 11:

“It’s, it’s an escapism really. If you are a lonely person it is an escapism. You go down the bookies have a chat have a look at the horses and sit there and study them. Sit there and watch them if you want because they have all the races on their little screens. It is escapism if you are old yeh but I don’t think it would make you a gambler, a heavy gambler” [Participant S2, male, age 79].

Southwell, Boreham and Laffan (2008) stated that in contrast to younger adults, life experiences such as financial problems, health decline, and a loss of significant relationships are common in elderly populations, potentially causing emotional distress, loneliness and despair. Loneliness was identified as an intrinsic motivator for this demographic. Motivation is a combination of internal and external factors which initiate, direct and give strength to behaviour (Clarke, 2004). Intrinsic motivation is based on needs, cognitions, and emotions (Chantral, Vallerand & Vallieres, 1995; Reeve, 2009) whereas extrinsic motivation generally stems from the environment, and social and cultural factors (Reeve, 2009). These motivations were identified as the underlying mechanisms that initiate, intensify, and maintain British older adult gambling behaviour. Gambling

alleviated loneliness and provided social interaction and initiated friendships as demonstrated in Extract 12;

“I met my new friends, made all these other friends [through gambling]”

[Participant S6, female, age 78].

Psychological motivational factors exceeded the need to gamble for financial gain. British older adults did not identify themselves as gamblers, rather as shown in Extract 13 stated that gambling was their only form of socialising; thus highlighting an absence of alternative social and leisure activities and is concisely explained:

“It’s a bonus, I don’t go there for the win, and it’s solely a bonus. I don’t go there to win, I go for the company. I go for the laugh and I go to participate with the rest of the people” [Participant S4, female, age 70].

Loneliness is commonly associated with ageing and the consequences of loneliness are mainly decreased well-being and depression. *‘Thus loneliness is seen to involve the manner in which the person perceives, experiences, and evaluates his or her social isolation and lack of communication with other people’* (Gierveld, p. 73, 1998). Loneliness and social isolation appear to be prominent negative issues for British older adults and this is illustrated in Extract 14:

“It can be very lonely especially in the winter months I mean summers I try and get out in the garden at least for a couple of hours and I go Saturday afternoons (to bingo) for the company and that gets me over the weekend” [Participant S7, female, age 74].

Patterns emerged across the data identifying ageing, loneliness and depression were variables associated with motivation and it was observed that gambling alleviated such psychological discomfort and it helped older people manage their health and social well-being, such as coping with the symptoms of depression, as summarised in Extract 15:

“It makes you feel you know sort of wanted if you know what I mean. I mean if you’re in the house, I have depression as well you see. I have had that for years and years, depression. I mean some days; I could just physically sit in the corner all day” [Participant L2, female, age 71].

Boreham, Laffan, Johnston, Southwell and Tighe (2006) observed older adults gambled to escape problems, ease loneliness and to pass time and are predominant factors associated with problem and pathological gambling behaviour. Furthermore, gambling is a complex phenomenon associated with a variety of positive and negative health outcomes. British older adult gamblers were prone to emotional vulnerability due to loneliness, age related disturbances, anxiety, depression and boredom. Fundamentally, this suggests they are at risk of developing problem gambling behaviour based on their types of motivation for participation as it is perceived participants were tempted to turn more frequently to

gambling to ease their burdens for a while. McNeilly and Burke (2001) stated people who gamble as a leisure activity focus more on the social, entertainment, and fun aspects of gaming, whereas pathological gamblers place emphasis on the escape aspects of gambling. The following quote illustrates the conscious choice to ‘switch off’ in Extract 16:

“Well it does bring you out of yourself sometimes if you’re feeling a bit down. You might sort of have one of them down days you think oh well I will go to bingo and meet a few people that you know and you can have a laugh then can’t you? Well you can talk to someone” [Participant S7 female, age 74].

Visiting the gambling venue enabled interaction with peers; it lifted mood and gambling appeared to be a particularly effective method to achieve this. In Extract 17, an inner city, female gambler summed up her mood if she is unable to attend bingo and it represents that low mood is present before the gambling experience and not a direct consequence following play, outlining a type of motivation to engage in gambling.

“Depressed” [Participant N4, female, age 78].

This highlights a motivation related to the pleasurable mood states derived from an opportunity to gamble. This demonstrates that the gambling environment is a distraction from the feelings associated with poor psychological well-being that British older adults professed they were experiencing.

Bereavement

Bingo was regarded as a pastime that allowed those who are experiencing grief or worry over something significant in their life to escape from it all. Engaging in simple conversation with peers and participating in a gambling activity was an effective deterrent to cope with bereavement. Whilst many participants revealed they did not commence gambling until they were bereft, whilst for some, their gambling participation increased since they lost a significant other, as explained in Extract 18:

“Well I started going last year after my husband died” [Participant S4, female, age 70].

Gambling appeared to add something valuable to their life, while patterns across the data suggested that gambling filled a void and replaced time previously spent shared with a partner, as explained in Extract 19:

“It was just for something to do because once you have lost your partner you know you have lost your other self and you have time for things to do” [Participant S4, female age, 70].

Motivation to gamble amongst this demographic suggested that gambling problems may occur along a continuum. Some British older adults had not experienced gambling until the age of 65 years. Primarily they become acquainted with gambling through peers, for

example, visiting a gambling venue for entertainment. It was reported that gambling turned into their main form of leisure and socialisation. In turn, this may eventually create a pathway into problem gambling, especially when gambling becomes an escape from problems. For instance, a male city gambler, in Extract 20 described a moment of realisation, identifying his reason to gamble and need for social contact:

“I think I began to realise that I did need other people, it wasn’t the bingo. I need social contact” [Participant, N1, male, age 77].

Wood and Griffiths (2007) in 50 qualitative interviews examined problem gambling, reporting it is probable that gambling is used as an alternative method to cope utilised by individuals to distract themselves from dealing with their problematic lives. Their data suggested mood modification was a primary motivator and was identified as a means to cope with other psychological and psychosocial states consisting of filling the void and/or avoiding problems. In line with findings from this study it is probable that, for this demographic, frequency of gambling may increase to facilitate positive psychological effects associated with escapism, including dissociation and mood modification (arousal states). Jacobs (1986) stated if the problem gambler uses gambling to block out certain negative thoughts and feelings in their lives, then it seems feasible they will engage in the behaviour at an increased frequency.

Retirement

One of the fastest growing populations of gamblers is retired older adults, and in comparison to adults they have more free time in which to gamble (McNeilly & Burke,

2002). Older adults facing later life transitions that include retirement may lack opportunities to socialise which may lead to gambling as a distraction from these types of age appropriate changes (McNeilly & Burke, 2000). Munro et al., (2003) found older people gamble because it facilitates a sense of escape, pleasure, excitement, social enjoyment, independence and empowerment as well as offering a means to financial gain. British older adult recreational gamblers reported that decreased loneliness and an increase in social interaction supported their mental well-being. Furthermore, predictors of problem gambling and pathological gambling disorder amongst older adults include low income, retirement, single or widowed status, poor self-rated health, low level of optimism and poor quality of social support network (Lai, 2006; McVey, 2003).

British older adults appeared to be motivated to gamble due to an increase of unstructured lifestyle after retirement. Gambling motivation from an economic perspective was considered irrational for many. Primary motivation to gamble was to alleviate psychological and physiological stress associated with factors related to retirement.

With regard to financing their gambling, money was reported as limited as pension income resulted in strict budgeting. Older adults did not fund gambling by loans or credit cards however access to these were limited as a consequence of their age compared to adult gamblers. This demographic valued and respected money, and budgeted for their gambling. Extract 22 provides an example of how British older adults feel about spending limited amounts of money on gambling:

“It’s alright if you win but if you go on loosing you have to, you have got to have a cut-off point, otherwise it’s just, you just end up throwing money away”

[Participant S9, male, age 70].

Economical situational factors appear relatively important in understanding gambling behaviour as they suggest older adults may differ from other age groups in respect to managing finances accordingly to keep gambling under control.

2.4.5 Theoretical proposition 3: Gambling motivation comes from the need to escape discomfort associated with physical degeneration.

British older adults experiencing some form of physical degeneration were also identified as escape gamblers. Gambling provided an analgesic effect for some participants, as opposed to a euphoric effect. Analgesia (reduction of pain) was induced by gambling, and in effect, some older adults felt temporarily free of emotional and physical pain, as explained in Extract 23:

“I could spend ages on that [EGM]. I quite enjoy it you know sort of just anything around me [poor physical and psychological health] doesn’t exist you know. I am just able, and quite happy standing there and I put my pennies in seeing what I get out” [Participant S7, female age 74].

In line with Jacobs' (1989) four-item dissociative scale, whilst gambling, British older adults accessed a psychological dissociative state providing a temporary level of distraction from physical and psychological stress. It is probable that gambling to temporarily remove pain related to ageing through dissociative states may negatively reinforce gambling behaviour. It is proposed that psychological factors involved in problem gambling amongst this demographic may significantly differ from other gambling age groups. Consistent with the Gambling Behaviour Completion Model (McConaghy, Armstrong, Blaszczynski & Allcock, 1983), once gambling is established as a habit, gamblers acknowledge they can gamble independently of pain. Extract 24 relates to an elderly lady recovering from a double mastectomy;

“Oh my god it, everybody said how different you are, you know, my son knows the signs with me. But it just brought me back to life to go play [bingo] and I was making a joke, like I have not got them on now (prosthetics), because they are a bit heavy, what not, so I don't wear the false things very often. And when I was able to go back it was great you know” [Participant S6, female, age 78].

Blaszczynski and Maccallum (2001) presented a single case report of a male in which arousal associated with gambling invoked a dissociative-like state that induced analgesia for chronic back pain. In line with the principles of operant conditioning (reduction of pain as a negative reinforcer) his gambling participation increased because it was an effective strategy in distracting from physical pain. Physical pain and debilitation associated with age-related degeneration was identified across the data as visual impairment, ability to care for oneself independently, effects of surgical procedures and symptoms associated with physical frailty for example, feeling *slowed up* and pain related disease.

Frailty is a term extensively used to denote a multidimensional syndrome of loss of reserves such as physical ability, cognition, energy and health, all of which give rise to vulnerability (Rockwood et al., 2005). Older adults are likely to experience a range of symptoms (Pel-Little, Schuurmans, Emmelot, Vonk, 2009), and the most distinguished symptom of frailty is a diminished ability to care for one's self (Puts, Lips & Deeg, 2005). Bortz (2002) stated ageing is predominantly an internal process; an individualistic lifestyle consisting of social isolation or frequent socialisation contributes in a positive or negative fashion to the ageing process. Accumulation of these deficits were identified across the data and related to mortality, admission to hospital or to an institution.

It is probable British older adults are a population segment that receives considerable health benefits from participating in gambling activities. Positive affect is associated with inducing psychological well-being and is increasingly recognised as having protective benefits against poor health outcomes (Fredrickson, 2003). It was demonstrated that behavioural and cognitive effects of gambling are related to factors associated with positive affect. Older adults gamble for social reasons and to participate in social relationships and therefore gambling is more likely to be associated with positive affect (Fredrickson, 2003).

Ostir, Ottenbacher and Markides (2004) reported high positive affect was found to significantly lower the risk of frailty. In line with these findings patterns emerged from the data suggesting positive health correlates of recreational gambling amongst older adults. Positive affect associated with gambling including social interaction, may be protective against functional and physical decline associated with the ageing process. In contrast,

problem gambling among older adults may be a cause for concern given the putative association between gambling, medical problems, and psychiatric problems (Petry, 2002). The following Extract 25, is exemplary of how participating in gambling is achieved in relation to physical degeneration.

“I mean we are really alert, [husband] and I. There is a lot of people that just sit around, my friend can’t read, she’s going blind, she can’t listen to tapes anymore she is going deaf, I will introduce you to her today the lady I sit beside I play her bingo for her and I keep knocking her and saying you want two, you want one, you want seven” [Participant N2 female, age 76].

This information identifies age-related motivations to gamble for this demographic and distinguishes older adults gambling behaviour compared to other ages. Often gambling was perceived as a mechanism to help oneself and one’s peers to combat their physical degeneration; and playing bingo was perceived to help them have some quality of life in the face of age-related physical frailty (Rockwood et al., 2005).

2.4.6 Theoretical Proposition 4: Gambling can satisfy unmet psychological needs for pleasurable arousal and cognitive stimulation.

Participants explicitly stated that they experienced limited stimulation within their lifestyles without gambling. They frequently stated that life was monotonous and devoid of regular cognitive stimulation and hedonistic pleasure. British older adults identified that since retirement and changes in family structure of their immediate family, there was a decrease in opportunity for excitement and stimulation. Participants perceived that they

had little opportunity to engage in numerous leisure activities because of either geographical or physical constraints. It was clear from the data that regular participation in gambling was effectively satisfying their psychological needs for excitement and to be challenged and stimulated cognitively, without being restricted by their physical and mobility debilitations, as illustrated in Extract 26:

“Oh I do get the adrenalin lifted when I am waiting for a number. It is exciting. It’s a lot of fun and it’s lovely to see those old people winning. I say old people being so young myself but you see no one from one Friday to the next Friday, so this gambling is, is laughter and fun and friendships it’s, it’s wonderful for us all”

[Participant N2, female, age 76].

It was observed that a key motivation to gamble was for fun and participants considered gambling as a considerable part of their recreational activities. It was perceived that participants were welcoming to alternative forms of recreational activity other than gambling, yet the majority stated that there were no leisure activities that were locally accessible and that could provide the excitement and stimulation they received when gambling. Pietrzak, Morasco, Blanco, Grant and Petry (2007) observed that risk for problem gambling among older adults, who considered gambling as a significant part of their recreation activities was four times higher compared to older adults that did not. From the data, it is apparent that motivation is related to providing physiological stimulation, initiating reward based behaviours, and reinforcing gambling motivation including physiological arousal and mood elevation.

Problem gambling is often co-morbid with significant disturbances of mood including depression, anxiety and bipolar disorder. For example, Black and Myer (1998) found that dysphoria and anxiety can be attributed to the life consequences of excessive gambling in affected individuals. Extract 27 provides a quote showing how gambling was motivated by both its hedonic value and by attempts to manage dysphoric or uncomfortable mood states:

“Well you can’t wait to get there, it’s exciting to go. All of us are the same. It does, you look forward to it, look forward to a game of bingo even if you don’t win or you do. Even a little bit you win you get excited because you’ve won” [Participant, S5, female, age 68].

Motivation to gamble was related to self-esteem and emotional states, including elevating esteem as a customer, which may be problematic in a number of ways. Baumeister (1997) stated that gambling is a self-defeating behaviour in at least two ways. Gambling has a direct negative monetary consequence, and secondly, gambling undermines the personal program of self-regulation that is designed to avoid self-defeating behaviours. As an outcome, self-defeating behaviour affects self-appraisal and self-esteem. Decreases in self-esteem are often accompanied by negative affects including anxiety and depression. Symptoms of emotional disorders may influence motivation and gambling behaviours, and in turn they are likely to modulate the symptoms of emotional disorders (Kim, Grant, Eckert, Faris & Hartman, 2006). In line with this study self-esteem was reinforced via social relations with staff including familiarity and as an outcome stimulated gambling behaviour as illustrated in Extract 28:

“They know us now, we get them every day and we just say ‘blackcurrant love’ coming up” [Participant, N4, female, age 82].

Gambling for recreational purposes suggests a potential cause for concern, particularly as little is known about the relationship between recreational and problem gambling amongst this age group (Desai, Maciejewski, Dausey, Caldarone & Potenza, 2004). Staying socially active and maintaining relationships are an important part of healthy aging. For example, Reichstadt, Sengupta, Depp, Palinkas and Jeste (2010) found that older adults revealed that *‘a feeling that somebody cares’* played an important role in their sense of well-being. Social interaction with spouses, family and friends can provide older adults with an acceptance of self and lead to a decrease in mortality (Antonucci, Birditt & Webster, 2010). It is noted that positive relationships with peers are a significant factor in the overall health and well-being of older adults (Antonucci et al., 2010). However, as people age, support systems tend to decrease and it is important for older adults to remain socially active (Antonucci et al., 2010). Reichstadt et al. (2010) stated those that give of themselves to others possess a positive self-attitude and maintain a social support system are key evidence as to how one can age successfully.

Laditka et al., (2009) observed that engaging in a type of cognitive activity, such as gambling, helped keep older adults’ brains active and was a sign of ageing well. It was evident in the grounded theory that UK older adults were motivated to participate in gambling activities for cognitive stimulation as stated in Extract 29:

“Well actually it does exercise your brain a bit because you have got to listen to what they are saying. You’ve got to work these numbers out you see. You have got

to watch and listen and it's not, hum, you can't be talking to somebody and doing it you have to concentrate, the same as if you were doing a puzzle. Like you have got to concentrate on that, you have got to" [Participant, L1, male aged 87].

When compared with other motivational factors such as socialisation, cognitive stimulation was not identified by participants as an initial motivator, rather it was part of the gambling process or experience. British older adults were aware of alternative cognitive tasks not associated with gambling such as crossword puzzles and jigsaws. These activities were unpopular activities because of limited hedonic stimulation available in comparison to gambling. When asked about non gambling leisure activities that were available, the participants maintained a preference for gambling as shown in Extract 30:

"Tuesday club, I think that is in the village hall they have a couple of games of bingo so I have heard. But it doesn't interest me because they apparently play cards and scrabble and I am not into them" [Participant, S7, female, age 74].

Fundamentally, it is apparent that gambling participation has potential to provide both negative and positive health rewards for this age group, including a desire to *exercise the mind*. As older adult gamblers reach later years they are more likely to experience changes in their cognitive performance (Boggio et al., 2010; Denburg, Tranel & Bechara, 2005). Hong, Sacco and Cunningham–Williams (2009) found older adults may try to seek multiple opportunities, either at a conscious or unconscious level, to improve their cognitive functioning. Cognitive stimulation and inexpensive excitement provided in a safe

environment have been identified in several studies as preferences to gamble among older adults (McNeilly & Burke, 2002; Southwell, Boreham & Laffan, 2008).

2.5 Discussion

The aim of study one was to produce a substantive representation of behavioural and cognitive patterns of British older adult gambling behaviour, in order to provide a platform to inform future empirical research. This study was highly exploratory, specifically in terms of the key variables to observe for this demographic. In order to identify specific types of behaviour including motivation and reward for gambling participation, it was relevant to employ an inductive methodology because of the absence of current UK older adult gambling research literature. There is a wider international literature exploring older adult gambling and problem gambling. However, due to cultural variations in terms of social factors and regulatory structures it may be erroneous to assume that the findings can be generalised directly to UK specifically British populations (Medeiros et al, 2015; Raylu & Oei, 2004).

Evaluating the key motivations from the four theoretical propositions, it is proposed that British older adults continued participation in gambling as a coping mechanism for negative age-related experiences, and therefore has potential to result in increased risk in this subgroup for problem gambling. It was important to observe age-specific motivations to gamble from the grounded theory to observe vulnerabilities for risk for problem

gambling unique to this age group. This is critically relevant to the process of developing suitable problem gambling interventions and screening tools for older aged gamblers.

Fundamentally, existing diagnostic tools used within general populations currently do not represent the unique characteristics underlying problem gambling among this age group (Williams et al., 2012). Data emerged from the grounded theory identifying that British older adult's perceived gambling participation as a mechanism to satisfy psychological needs. For participants, vulnerability was also related to the ageing process in terms of the family structure, as often children had left home, and family members had deceased. Social structures had also changed as a consequence of retirement, with many unable to socialise with work colleagues anymore, and in addition, income structures were different with many now receiving a pension or other limited income. Other factors were related to changes in health status such as physical degeneration.

British older adults appeared to be motivated to gamble as it was an efficient method to cope with these types of age related changes. A category to emerge from the grounded theory was that gambling environments were widely available and highly accessible. This is of high relevance to this specific demographic as they reported that using public transport was not always accessible and they had limited access to private transport. Furthermore, participants stated that gambling environments, either commercial or community-based, provided a safe social place to interact with peers, and ultimately, it was an affordable and they could pass time during the day.

When evaluating the types of motivations specific risk factors were illuminated. Factors such as elevated mood states indicated that gambling had the ability to temporarily enhance well-being. In contrast, gambling also appeared to have the potential to diminish their future well-being with potential negative consequences. However, the participants in the study did not disclose information indicating problematic behaviour in relation to problem gambling and it may be construed that gambling is a positive source of leisure for British older adults. However, in line with current literature, gambling to escape negative factors is associated with risk for/and problem gambling (MacLaren et al., 2015a).

This demographic presented a limited awareness of their gambling behaviour as being problematic, however, it is noted that gambling is not on the public health agenda in the UK (Rigbye & Griffiths, 2011). From this finding it is apparent that current UK treatment services would be limited in providing relevant support to British older adults experiencing problem gambling. Information on responsible gambling aimed at this specific demographic needs to be more readily available. Identifying a tool to accurately measure older adult problem gambling behaviour is much needed, however, if there are no readily available services to treat this demographic, disseminating an appropriate tool will be challenging. Third sector treatments are available; although this demographic may be particularly difficult to treat due to unique gambling motivations related to age. Their treatment needs may not apply to the standard uniform approach used within younger aged subgroups of gamblers. Put simply, amalgamating older adults within the general population may not identify distinct understandings of the causal mechanisms of this population's gambling behaviour.

Overall, the current study has provided direction for a future research program that will empirically investigate gambling behaviour in British older adults. This study was highly explorative. However, it was a necessary first step to developing an understanding of the gambling behaviour and age-specific vulnerabilities and risk factors for development of disordered gambling for this demographic. Given that all participants revealed escape motivations, escapism is a prominent risk factor for the development and maintenance of problem gambling in older adults.

Limitations

It was relevant to apply an inductive methodology due to limited existing knowledge on British older adult gambling behaviour, however, having employed a qualitative design the sample size was small by default. In addition, participants were self-selected and therefore may not be fully representative of the target population. Fundamentally, caution must be applied at this stage of the thesis when applying findings. Therefore, it is relevant to conduct further research using a large, representative sample to determine to what extent the motivations observed in the current study are reflective of the wider UK older adult gambling population and if they are predictive of risk for problem gambling.

2.6 Implications for future research

Study one has provided a platform, it has broadened understandings of behaviours associated with British older adult gambling involvement. The second study will employ a survey design to examine risk factors for gambling-related harm, with specific emphasis on physical and psychological health variables that emerged from this study. It is important to

determine risk factors for problem gambling specifically, as escape motivation is a prominent risk factor (Cookman & Weatherly, 2015; Subramaniam et al., 2015) and was a key motivation related to British older adult gambling participation in this study.

Chapter 3

Study 2: Risk Factors for Problem Gambling Behaviour in British Older Adults

3.1 Introduction

This study asserts that later life gambling over the age of 65 years is a precursor to an increased risk of vulnerability for problem gambling compared to adult gamblers aged 16 years and above. Older adult gamblers are more likely to give rise to financial problems, health decline and a loss of significant relationships, causing emotional distress, loneliness and despair (*Boreham, Laffan, Johnston, Southwell & Tighe, 2006; Subramaniam et al., 2015*). As a result of the variation in these specific age-related psychological and physiological processes, it is probable that the differences in gambling behaviour such as motivation, preferences for types of gambling activity and risk associated with problem gambling vary substantially between older adult and adult populations.

Furthermore, there is also concern that existing research uses different age classifications of the term older adult not specific to those aged 65 years and older (Petry, 2002, 2008). Therefore, it is complex to compare and evaluate relationships between gambling and problem gambling behaviour and psychological and physiological functioning in older adults. Therefore the inclusion criteria in this study will sample British adults aged 65 years and older. By conducting research within the context of older adult's age 65 years and above, it will be possible to make steps towards understanding specific risk factors and vulnerabilities for gambling, and problem gambling, for this specific demographic.

3.1.1 Classification of an older adult gambler

Tse, Hong, Wang and Cunningham-Williams (2012) identified older adult gamblers as 'young-old', (i.e. between the ages of 60 and 65 years of age), and defined 'older-old' adults as 65 years and older. However, Suzman, Willis and Manton (1992) defined those aged up to 55 years as the 'young-old'. Therefore, how an older adult is defined across existing studies is inconsistent making it complex to compare existing studies based on age and gambling behaviour. Pilver, Libby, Hoff and Potenza (2013) observed that 55 years of age was referenced as a liberal classification of old and is consistent in many gambling studies (Black & Buckwalter, 2008; Kerber et al., 2008; Petry, 2002; Pilver et al., 2013).

However, it was observed that sampling older adults ranging from the age of 55 years was caused by an inability to achieve sufficient sample sizes for older adult problem gambling research. Pilver et al (2013) stated that older adult participants in their study ranged from 55 in order to maximise the sample size and thus increase the power of the study.

Developing a consistent age classification of an older adult gambler would enable more accurate comparisons across existing gambling studies and develop clearer understandings of the gambling behaviour specific to those aged 65 years and older (Kerber et al, 2008; Petry, 2002; Pilver et al., 2013; Potenza, Steinberg, Rounsaville & Malley, 2006). Potenza (2006) stated that clustering individuals as older adults does not consider potential heterogeneity among this population, therefore, ideally, stratification of the sample into the young-old, old, and oldest-old would enable an understanding that better accounts for cohort and age effects.

Reaching a consensus on age classification across gambling subgroups is useful because although different aged subgroups of gamblers share some common features, fundamentally, older adults aged 65 years and older often contain specific vulnerabilities that are different to younger gamblers (Kausch, 2004; Potenza, et al., 2006). Older adults have been observed to show a shortened period of one to three years to reach a crisis stage in their gambling behaviour compared to younger aged gamblers (Fowler, 1997). In comparison to younger gamblers, older adults admitted to a residential gambling treatment program were as likely to have a lifetime history of serious suicidal ideation and were also likely to have a psychiatric diagnosis, such as depression (Kausch, 2004). However, Potenza et al., (2006) stated that older adult problem gamblers were less likely to report gambling-related mental health problems compared with younger adult problem gamblers.

Potenza et al. (2006) also observed a lack of consensus regarding age categorisation in gambling research, addressing the question, what age constitutes the term 'older adult'. Furthermore, the older adult period may be characterised by significant life changes including retirement, a decreased participation in occupational activities and increased leisure time (Potenza et al., 2006). Individuals may encounter these changes at different times, complicating the definition of a discrete cut-off point for defining an age for entering older adult status (Potenza et al., 2006). Essentially, a sample consisting of those aged 55 – 64 years may differ in lifestyle, including economic and social factors, compared to individuals aged 65 years and older, therefore, future investigations should examine for these types of differences and mediating factors (Potenza et al., 2006).

In addition, inconsistencies categorising age groups and methodological limitations in older adult gambling studies include sampling those in hospital primary care settings and

therefore potentially magnifying associations between gambling behaviour, problem gambling and poor health status (Levens, Dyer, Zubritsky, Knott, & Oslin, 2005). Furthermore, sampling-treatment seeking pathological gamblers (Petry, 2002) and self-excluding gamblers (Nower & Blaszczynski, 2008) also has potential to significantly skew data. Those seeking treatment are more likely to experience extreme negative consequences in comparison to problem gamblers in the general population (Reith, 2006). The utilisation of single subjective measures of health and self-report may prompt participants to be less realistic, or more optimistic, regarding their health (Desai, Maciejewski, Dausey, Caldarone & Potenza, 2004).

3.1.2 Prevalence of older adult gambling and disorder

Gamblers are a population hard to identify, and furthermore are reluctant participants based primarily on the social undesirability of gambling (Parke & Griffiths, 2002). Older adult gamblers may be more reluctant to participate in gambling studies compared to younger gamblers; they are more likely to hide or deny their gambling behaviour due to age-related perceptions of how older adults should morally and ethically behave (McKay, 2005). This may affect prevalence rates of older adult gamblers, highlighting that this age group are not identified as much compared to adult gamblers. Gambling prevalence surveys epidemiological in nature provide estimates about the rate of gambling participation, and gambling disorder in the general population and are more likely to report lower levels of problem gambling in older adults compared to younger adult gamblers (Wardle et al., 2011). However, in comparison, regional studies where gambling opportunities are available to older adults report increased rates of prevalence for older adult gamblers and disordered gamblers (Erickson, 2005; Levens, McNeilly & Burke, 2000). Furthermore (Erickson, Molina, Ladd, Pietrzak & Petry, 2005; Ladd, Molina,

Kerins & Petry, 2003; Zaranek & Lichtenberg, 2008) have identified prevalence figures upwards of 10% among older adults which are higher compared to prevalence rates of older adults that are amalgamated within general adult populations (Subramaniam, et al., 2015).

Comparing older adult prevalence rates globally is difficult due to a lack of standardisation in measurement across reports (Tse et al., 2012), different types of recruitment venues (Shaffer, et al., 1999), type of sample (e.g. telephone samples; Potenza, Maciejewski, & Mazure, 2006) and different national age classifications defining the term older adult (Petry, 2002).

The prevalence of problem gambling in British older adults aged 65-74 years measured using the DSM-IV (APA, 2000) showed that 0.4% of men and 0.2% of women were experiencing a level of problem gambling (Wardle et al., 2011). The same survey also employed the Problem Gambling Severity Index (PGSI: Ferris & Wynne, 2001) and this tool identified no problem gambling in adults aged 65 years and over. Furthermore, no adults over the age of 75 years were identified as problem gamblers when measured by both tools. This clearly highlights limitations in older adult gambling research, specifically, that current sampling approaches for older adult problem gamblers is inadequate.

Fundamentally, gambling research requires the development of problem gambling tools to effectively measure older adult gambling subgroups.

The publication of the British Gambling Prevalence Surveys (BGPS: Sproston, Erens & Orford, 2000; Wardle et al., 2007; Wardle et al., 2011) has increased knowledge regarding the participation rates of British older adult gamblers. The BGPS enables comparisons to

be made with participation rates and problem gambling prevalence internationally, and across different age groups. International data shows that prevalence rates of problem gambling among older adults are often lower than those reported for adolescents and younger adults (National Opinion Research Centre, 1999; National Research Council, 1999). However, many studies either fail to detail findings by age or do not sample adequate numbers of older adults (Petry, 2002). Fundamentally, if older adults aged 65 years and above are not adequately sampled in prevalence studies they remain unidentified and vulnerable to the adverse impact of problem and pathological gambling, overall constituting a specific risk group.

3.1.3 Gambling behaviour and older adults

Southwell et al., (2008) observed that gambling behaviour and motivation of Electronic Gaming Machine (EGM) players aged 60 and above were influenced by personal circumstances or characteristics. The study identified that participants were more likely to be high time low spend gamblers, placing low credits to extend the amount of time they gamble. Overall, it was observed that older adults were more likely to spend longer periods of time gambling and to use additional facilities, such as the restaurant, compared to younger aged gamblers. While 41% of participants self-reported that ‘making friends and socialising’ were reasons for their EGM play (Southwell et al., 2008). A similar gambling pattern of high time gambling has been observed in British older adults aged 65 years and older when compared with Adult British gamblers. Fundamentally, 24% of those aged 65 years and above were more likely to be high time gamblers compared with 13% of younger gamblers aged 45 – 64 years, while 17% were aged 16- 24 years (Wardle et al., 2011). Furthermore, 27% of high time gamblers were retired, suggesting that this age group have

more available time to gamble and spend less money on gambling compared to younger gamblers.

Mok and Hraba (1991) observed that older adults were more likely to gamble on one or two different types of gambling activities, therefore, increasing their exposure to limited types of gambling activities. It has been observed that spending more than one hour per week gambling is associated with more than a three-fold increase in gambling related problems. Southwell et al., (2008) found that older adults play EGMs to alleviate boredom or to forget about problems when feeling stressed or depressed and were more likely to demonstrate moderate-risk/problem gambling rather than low-risk/non-problem gambling. British adult gamblers aged 16-64 years of age have been reported to prefer both online and offline slot machine style games, sports betting and a lotto (Wardle et al., 2011). Older adults also prefer to gamble on these types of activities therefore they are as likely to develop problem gambling behaviour as other age groups although prevalence is recorded as much lower (Wardle et al., 2011).

McNeilly and Burke (2000) sampled older adults aged 65 years and older at gambling venues and found they were more likely to access several different types of gambling with greater frequency and to spend on average more on gambling each time they gambled compared with community dwelling older adults. The study also found older adults sampled at gambling venues were more likely to gamble more than they had intended, to feel guilty about gambling, to argue over money and gambling, compared with community dwelling older adults. These findings suggest that older adults may be vulnerable to commercial marketing including availability and accessibility of commercial gambling

environments, and that their gambling behaviour is problematic when compared to a community/non-commercial gambler.

It has been observed that growth in gambling participation is related to more time to gamble because of retirement and access to a regular disposable income including life savings (Wiebe & Cox, 2005). Understanding gambling behavioural patterns that coincide with disposable income may show differences in older adult gambling behaviour compared to younger aged gamblers. McNeilly and Burke (2000) found that a combination of increased disposable time due to retirement and increased disposable income suggests that older adults have an accessible path to gambling opportunities compared to younger aged gamblers.

The Productivity Commission (2010) stated that gambling amongst women is of concern, specifically given their preference for EGM play and the established link between problem gambling and this type of gambling activity. McKay (2005) identified that the majority of *escape* gamblers are women. Chrostowski (1997) observed that women in a treatment programme were likely to be categorised as emotional, relief or escape gamblers, thus gambling to relieve their negative, dysphoric feelings of isolation, boredom, depression, or to avoid difficult situations.

Prevalence surveys have also shown greater proportions of women are now gambling (Wardle et al., 2007; 2011). The 2010 BGPS reported an increase in gambling participation since the 2007 BGPS (68% to 73%) however, this increase was greater among women than men (65% in 2007 and 71% in 2010). Online gambling participation had also increased

since 2007; again, with a greater increase among women than men. Since online gambling participation seems to be increasing faster among women than men, there may be differences in motivations for gambling that need further examination. From a technological viewpoint, British older adult females appear at risk to the development of problem gambling because of the growth in the availability of remote gambling via the internet (Corney & Davis, 2010).

Females are attracted to online gambling as it is observed to be less of a male domain and a place where women can learn to gamble, and they generally prefer games of chance and games involving continuous forms of play (Corney & Davis, 2010). Furthermore, studies have suggested that women have a more rapid progression into problem gambling compared to men, although this could be a result of women generally starting gambling at a later age (Blanco et al., 2006; Nower & Blaszczynski, 2006; Potenza, Steinberg, McLaughlin, Wu, Rounsaville & O'Malley, 2001; Shaffer, LaBrie, LaPlante, & Kidman, 2002; Tavares, Zilberman, Beites, & Gentil, 2001).

Tse et al., (2012) observed that internet gambling was rarely reviewed in older adult gambling research, however, with increased availability of online gambling and ease of accessibility, older adults may access a game online while at home. This indicates that future studies should include alternative forms of gambling to reflect the lifestyle changes of older adults, and in particular, older adult women. Differences in reasons for gambling between males and females may reflect differential comorbidities between genders, which in turn may be important for understanding etiology and treatment (Petry et al., 2005). Observing relationships across age and gambling behaviour will identify age group gambling preferences including rates of gambling participation. It is possible older adult

gambling behaviour is different when compared to the gambling behaviour of adults because of age related needs and financial resources related to different age categories (Waiman, Mok & Haraba, 2001). Although behaviour appears to differ between adult and older adult gamblers, it has been observed there are two different groups of older adult gamblers. For example, 24% of British older adults prefer to gamble high time only (i.e., those who spend increased amounts of time gambling) compared with 21% of British older adults aged 65 years and above that prefer to gamble for short periods yet gamble at higher stakes (Wardle et al., 2011). Older adult gamblers (12%) were less likely to be high time and high spending gamblers compared with 45% of younger gamblers aged 25-34 years. These findings indicate that, overall, older adults appear to have less disposable income yet more disposable time to gamble compared to younger aged gamblers. Across marital groups, widows were more likely to be high time only gamblers (Wardle et al., 2011).

Gambling involvement includes measurement of gambling frequency, the number of activities undertaken and broad estimates of money and time spent gambling (Wardle et al., 2011). The BGPS 2010 reported that British older adult gambling involvement had increased over the past year although the rise in older adult gambling involvement was less when compared with younger aged gamblers; 2% versus 10% for those aged 16-26 years (Wardle et al., 2011).

These figures indicate that British older adults are increasing their gambling involvement similar to younger aged gamblers, but at a lower rate. Fundamentally, British older adult gambling behaviour is increasing, therefore this subgroup is likely to be an at-risk population for problem gambling as are younger aged gamblers. Furthermore, an increase has been identified in particular in female older adults aged 65 years and over gambling

more frequently than younger adults. The BGPS (Wardle et al., 2011) showed this subgroup had a higher mean number of gambling days per year (146.9) compared to women younger than the age of 35. Those aged 16-24 years gambled for 66.2 days, and 67.0 days was reported for those aged 25-34 years.

Older adults may be impacted by gambling problems due to restricted incomes, the inability to work to recover gambling losses, and poorer baseline health as a function of advanced age (Desai et al., 2004; McNeilly & Burke, 2002; Pavalko, 2002). This greater vulnerability in older adults, coupled with increasing access to gambling, highlights a need to understand age-related differences in the types of risks associated with gambling (Fessler, 1996; Grant Stitt, Giacomassi, & Nichols, 2003; Ladd et al., 2003; Levens, Dyer, Zubritsky, Knott, & Oslin, 2005; McNeilly & Burke, 2002).

Older adults are generally less healthy than adults, and mental and physical illness frequently co-occur with problem gambling (Desai et al., 2004). Consequently, older adults with pathological gambling are more likely to experience disruptions in multiple life domains (Desai et al., 2004). Older adults who incur large gambling debts may experience higher levels of stress and shame (Argo & Black, 2004; Yi & Kanetkar, 2011) and detrimental effects on interpersonal relationships (Grant & Kim, 2001), compared to older adults without gambling debts. Pilver et al., (2013) stated specific health factors may contribute to the development of anxiety and depressive disorders among older adults, furthermore, problem gambling in older adults warrant further attention.

Ladd et al., (2003) evaluated rates of gambling participation and problems in 492 older adults aged 65 years and older and found that gambling frequencies and expenditures

indicated significant financial stress in older adults. Whilst financial problems may apply to all age groups they are likely to be more difficult to identify in older age groups of 65 years and above (Ladd et al., 2003).

Exploring this concept further, Potenza et al., (2006), using data from problem gamblers aged 55 years and above in treatment, observed that, compared to younger adult problem gamblers, older adults calling a gambling helpline would be less likely to report their problem gambling. The most pertinent findings of the study showed older adult problems gamblers (versus younger adult problem gamblers) reported having lower incomes, longer durations of gambling, fewer types of problematic gambling, problems with casino slot machine gambling and were less likely to report gambling-related anxiety (Potenza et al., 2006).

3.1.4 Older adult mental health care in the UK

Studies exploring correlates between older adult gambling behaviour including problem gambling and comorbidity have been well documented across international studies yet remain limited in terms of UK context. For example, substance use disorders, depression, suicide, personality disorders, and social consequences often co-occur with probable pathological gambling (National Research Council, 1999). Zaranek and Lichtenberg (2008) stated that analogous with studies recently examining older adults gambling behaviours, research has only begun to explore such correlates among elders. An estimated 3 to 6% of older adult US citizens experience mental health problems while depression is the primary emotional disorder (Craven & Parker, 2002; Hooyman & Kiyak, 2002).

UK mental health statistics identified that substance use disorders, depression, suicide and personality disorders were associated with those aged 65 and above in the general population (Mental Health Care Foundation, 2009). Older adults are less likely than younger adults to seek mental health services, or professional treatment, when faced with such challenges and they are more likely to have underlying gambling problems when presenting themselves for treatment of an affective disorder (Atchley & Barusch, 2004; Govoni, Frisch & Johnson, 2001; McNeilly & Burke, 2000). These factors identify that older adults are vulnerable to risk for problem and pathological gambling compared to younger gamblers (Petry, 2005).

Older adults with mental health problems in England do not receive the same level or quality of care as adults under 65 years (Mental Health Care Foundation, 2009). The Royal College of Psychiatrists stated that the existence of age discrimination against older people can be strikingly demonstrated with mental health care, as older people do not have access to the range of services available to younger adults despite having the same, and often greater, need (Royal College of Psychiatrists, 2007a).

Guidelines and policies (Age Concern, 2007; Care Services Improvement Partnership, 2005; Department of Health, 2005a; Healthcare Commission et al., 2006; Joint Committee on Human Rights, 2007; Mental Health & Older People Forum, 2008; Royal College of Psychiatrists, 2005) emphasised the importance of equality in mental health care regarding direct and indirect age discrimination occurring within services (Mental Health Care Foundation, 2009). Divisions have been created between working age adults (under 65 years) and older adults within social care and mental health services. As a result, adults aged 65 years or above do not qualify to access a range of services available to younger

adults (Mental Health Care Foundation, 2009). Older adults are exposed to age discrimination and almost half of doctors specialising in the care of older people stated that the UK National Health Service (NHS) experiences high levels of ageism (Help the Aged, 2009).

While gambling is not a problem for all, it can become an addiction and be harmful to an individual's mental health, specifically through the social meaning and psychological relief that it offers (Lister & Nower, 2013). If the UK NHS are unable to meet the mental health needs of their elderly patients, due to factors such as age discrimination (Royal College of Psychiatrists, 2007a), fundamentally it appears that UK older adults may not receive adequate care, making them vulnerable to the psychological relief that gambling can provide in old age (Lister & Nower, 2013).

Furthermore, older adults also face barriers to problem gambling treatment within the NHS (Rigbye & Griffiths, 2011). Access to problem gambling treatment is not discriminated by age it is across all adults, and adolescents, that barriers to treatment exist. However, problem gamblers may get treatment via the NHS if they present with other co-morbid disorders as the primary referral problem (e.g., alcohol or drug addiction and mental health disorder) because problem gambling is marginalised as a secondary issue from the beginning of the referral pathway (Rigbye & Griffiths, 2011).

Older adults with mental health problems and the integration of problem gambling are further complicated by increasing figures. It is predicted that over the next fifteen years there will be 4.3 million older adults with mental health problems (Age Concern and Mental Health Foundation, 2006). The largest increase in numbers of any mental health

problem will be seen in the rise of the numbers of older adults with depression and also significant increases will be observed in the number of older adults with dementia and likely to reach 1.8 million by 2050, (King's Fund, 2008). This is an indication that increased numbers of older adults will have a mental disorder and this will place additional strain on existing, already limited, older adult care services.

3.1.5 Mental disorders, comorbidity and older adult gambling behaviour

An estimated 1 or 2% of over 55-year-old adults currently have alcohol dependence, rising to 23% in clinical settings (Royal College of Psychiatrists, 2006). Substance misuse is usually regarded as a problem affecting younger adults, where there are increasing levels of co-morbidity involving mental disorder and drug/alcohol misuse problems.

Gonclaves, Coelho and Roy-Byrne (2014) analysed the contact with health care professionals for mental health problems from a representative sample of Australian community dwelling adults aged 55 years and above. Aims of the study were to understand the main forms of help participants received from their mental health provider and identify obstacles in accessing mental health services. Results showed that older adults were at risk for deterioration because half of all participants meeting full DSM-IV (APA, 2000) criteria did not receive a consultation with any health care provider. From the sample, 9.60% of adults fulfilled criteria for a 12 - month DSM-IV mental disorder and 8% reported they had visited a practitioner over that period. Therefore, older people are susceptible and vulnerable to further mental decline as result of not receiving treatment. As age increased, the numbers of older adults likely to seek help reduced, with 12% aged between 55 and 64 years likely to seek help compared to 5% aged between 75 and 85 years old. This

identified that older adults over the age of 75 years are highly vulnerable compared to adults. However, those that did ask for help did not receive adequate services (Gonclaves et al., 2014). As a result of self-management older adults are less likely to receive adequate medication, receive information about their illness, access psychotherapy or counselling services, therefore inhibiting their ability to achieve successful aging (Gonclaves et al., 2014). A consequence of self-management is that treatment is not delivered by practitioners and this approach will reduce the numbers of older adults presenting for treatment. Ultimately, international and UK prevalence may be higher than current prevalence estimates regarding the severity of problem gambling and psychiatric comorbidity in older adults, yet remaining undetected because of self-management.

3.1.6 Barriers to UK mental health services and treatment from the age of 65 years

UK adults accessing mental health services change care pathways when they reach age 65 years, and move into an older adult specialist services, in the process losing key services and important relationships with previous staff and service users if they are current patients. Immediately, it seems that when older adults reach 65 years there is a barrier to services. Protocols that manage the transition from adult to older age services are not consistently used and practiced across all services (Mind, 2005). The framework that exists uses age to differentiate access to services. Age discrimination against older people may be defined as any '*action which adversely affects the older people because of their chronological age alone*' (Age Concern, 2007, p.34-35).

Beecham et al., (2008) stated that age discrimination occurs indirectly because of how UK mental health services are organised. The way in which access to mental health services is

structured may result in indirect discrimination because the framework that exists uses age to differentiate between services. Although specialist mental health services for older people are available and designed to specifically care for vulnerable people with mental health needs, it is important to consider if older adult specialist's services are appropriate for every older person with a mental health problem. Furthermore, containing care within specialist old age services discriminates and unfairly differentiates the old from the young. It is important to consider whether current specialist services are equipped to reflect societal and generational change. The expectations of new generations of older people, especially those more technologically advanced (computer literate, using gambling apps or smartphones), are likely to require a dual diagnosis, including older adult problem gambling, substance misuse, alcoholism and other mental health comorbidities including depression and anxiety.

A report commissioned by the Department of Health (2008) focusing on age discrimination in mental health found that generally it is people aged over 65 years who are receiving lower cost support packages compared to younger adults (Beecham et al, 2008). The report stated that it is in relation to common mental health problems such as depression and anxiety where the discrepancy is most notable; furthermore, it is noticeable because the service is needed. The Royal College of Psychiatrists (2007b) reported that at a time when services are facing large increases in numbers older peoples' mental health services have seen cuts. For example, the number of people with anxiety disorders in England is substantial and will grow over time, although this is due to demographic change rather than changes in prevalence rates. The Psychiatric Morbidity Survey; PMS (Singleton, Bumpstead & O' Brien, 2001) observed that population estimates for people with anxiety disorders was an estimated 2.28 million in 2007 and 13% were aged 65 years or over.

Furthermore, figures are anticipated to increase to 2.56 million by 2026, and increases are expected to be greatest in the older age groups, with an increase of 66% for those aged over 85 years (Singleton et al., 2001).

Chou and Afifi (2011) stated stress related to disordered gambling may create significant affective and anxious feelings, possibly leading to some incident mood, anxiety, and substance use disorders. Gambling may be a maladaptive coping mechanism for dealing with emotional problems, including depressed or anxious feelings, exacerbating problems and symptoms leading to meeting criteria for other Axis I disorders (APA, 1994), including schizophrenia, bipolar disorder, autism spectrum disorders, anorexia nervosa, bulimia nervosa, and schizophrenia (Chou & Afifi, 2011). Stewart and Oslin (2001) stated that older adults rarely seek mental health services and many are likely to suffer from untreated or undertreated psychopathology (Kerber et al., 2008).

Because of the strong focus on specialist dementia care in mental health services for older adults, this focus may limit services for less age specific mental health problems including depression and anxiety and substance misuse across older adults (Mental Health Foundation, 2009). Accessibility is difficult to services including talking therapies, assertive outreach, crisis teams, home treatment teams, occupational therapy and alcohol services that are more easily available to younger adults (Age Concern, 2007). The British Geriatric Survey found that two thirds of doctors specialising in older adult care and treatment agreed that older adults were less likely to have their symptoms investigated and be forwarded for further treatment compared to younger adults (Help the Aged, 2009). Therefore, UK mental health services appear structured to care for the needs of younger adults more when compared to older adult services.

Godfrey, Townsend, Sur, Boyle and Brooker (2005) stated that life events common amongst older adults include death of a spouse or partner, increasing social isolation, role confusion following retirement, relocation to assisted living facility or retirement community, financial strain, and onset of chronic illness; all highlighting specific age-related vulnerabilities. Furthermore, these factors are likely place older adults at risk for depression, anxiety, and other mental illness compared to younger adults (Godfrey et al., 2005). Therefore, a provision of older adult specialist services is required and structured to account for age-related vulnerabilities and provide tailored interventions and treatment strategies.

Cross-sectional studies have observed that at-risk problem and disordered gambling is associated with adverse psychiatric correlates yet the directionality of these associations are not determined (Desai et al., 2004, Kerber et al., 2008; McCready et al., 2008; Pietrzak et al., 2007; Pilver et al., 2013). There is evidence to suggest that mental illness may contribute to the development of problem gambling, and alternatively problem gambling may contribute to the development of mental illness (Pilver et al., 2013). Hodgins, Peden and Cassidy (2005) investigated the prevalence and age of onset of lifetime and current alcohol, other drug and mood disorders in a naturalistic sample of pathological gamblers that recently quit gambling. They also examined the association between these disorders and achievement of stable abstinence during a one-year follow-up period. Their results demonstrated that depression was as likely to occur before the development of gambling problems as afterwards, indicating that some individuals may use gambling as a poor coping mechanism to relieve dysphoric mood, whilst alternatively some individuals become depressed because of their gambling problems. However, the study does not

provide any stratification of the sample into ages. It was noted the sample did reach those aged 65 years and older however, the mean age of participants was 39 years.

Chou and Afifi (2011) in their study of community-dwelling respondents from a nationally representative US sample stated past-year problem pathological gambling (PPG) was associated with elevated odds for incident generalised anxiety disorder in a general adult population, suggesting that findings were not any more specific to older adults. The study had severe limitations, firstly from a sample of over 30,000 participants only 7.1% of the sample was aged over 65 years. These findings may further understandings of mood, anxiety and other clinical disorders and disordered gambling in a general adult population but does not provide insight into how old age predates, if at all, the onset of disordered gambling and its temporal relationship, if any, with psychiatric disorders.

Pilver et al., (2013) found distinct mechanisms in the gambling-related development of specific forms of psychopathology in older adults. This was the first study to sample older adults from a large, nationally representative population examining the prospective relationship between past-year problem-gambling severity and incident psychopathology of those aged 55-90 years of age. The results showed that compared to older adults exhibiting no or low-frequency gambling, those acknowledging one or more inclusionary criteria for problem gambling were more likely to develop other mental problems. At risk problem gamblers, with a mean age of 64 years, were positively associated with age, gender, marital status, employment, income, the incidence of any substance misuse, tobacco use, alcohol consumption and drug use, and generalized anxiety disorder (all $p < .02$).

It has been observed that specific psychological disorder and demographic factors are associated with problem gambling in those approaching the age of 65 years (Pilver et al., 2013). The specific psychological disorder identified are likely to continue or progress into older adulthood and at a stage where older adults are more vulnerable because they are less likely to have their symptoms investigated and referred for treatment compared to younger adults under the age of 65 years (Help the Aged, 2009). Pilver et al., (2013) stated that many factors may contribute to these relationships; as at risk older adult problem gamblers are more likely to incur financial difficulties as a result of their gambling behaviour, and are more likely to experience relationship difficulties. Difficulties in other life domains may create stress which may exacerbate generalised anxiety disorders (Beekham et al., 1998). At risk older adult problem gamblers are more likely to drink alcohol, take drugs, or smoke tobacco to cope with stress (Wills & Hirky, 1996). Pilver et al., (2013) stated that maladaptive coping strategies may contribute to the development of substance abuse and dependence for at risk older adult problem gamblers.

Leeman and Potenza (2012) observed that individual differences in impulse disorders are linked with substance use disorder and problem gambling in older adults. Overall there is a need to create a better understanding of the gambling contexts under which mental health conditions may emerge and how future studies are needed to further investigate gambling behaviour of older adults and how it may relate to psychopathology amongst problem/at risk/low risk gamblers, non-gamblers, low and high frequency gamblers to enable a clear comparison of all gambling subgroups. Older adults are vulnerable for late onset of psychiatric problems compared to younger age groups.

Kessler et al., (2008) found that older adults were more likely to report a late age of onset for psychiatric disorders. Older adults are more likely compared to younger adults to be at risk for late-onset mood, anxiety, and substance use disorders (Chou et al., 2011; Kessler et al., 2005a). Problem gambling is associated with numerous different types of mental disorders making establishing causality across studies problematic as it is a complicated process to disentangle each disorder and determine what effects gambling alone accounts for (Reith, 2006).

3.1.7 Psychopathology and older adult gambling

Numerous studies have demonstrated links between disordered gambling and Axis I disorders (APA, 2000) including: anxiety, mood, substance, personality and other clinical mental disorders (Blanco, Hasin, Petry, Stinson, & Grant, 2006; Desai & Potenza, 2008; Kessler, et al., 2008; Petry, Stinson & Grant, 2005). Like many cross-sectional studies, the data does not identify which variable is the cause and which is the effect, making it difficult to establish the temporal order in which disorders occur (Chou & Afifi, 2011).

Jason, Boglioli and Taff (1990) examined the causal relationship between disordered gambling and psychiatric or health correlates of older adult gamblers. They found that 83% of nearly 400 casino-related deaths in Atlantic City were associated with sudden cardiac deaths and the majority were elderly retired men. Although it was not conclusive if older adult disordered gamblers suffered from more severe health, psychiatric, substance use and social problems than older adults without a gambling disorder (Pietrzak et al., 2005).

Morasco and Petry (2006) found disordered gambling has high associations with impaired functioning and reduced quality of life and specific medical conditions. Shaffer and Korn

(2002) observed that disordered gambling is associated with specific medical conditions, stressful life events including employment, divorce and bankruptcy and all factors have high associations with clinical psychiatric disorders (Saarni, et al., 2007).

Pietrzak, Molina, Ladd, Kerins and Petry (2005) observed that disordered gambling is a clinically significant problem among older adults aged 60 years and older. Their study evaluated health, psychiatric, substance use, familial and social problems of older adults with a mean age of 67 years with a gambling disorder and compared them to older adults without a gambling disorder. Results showed that disordered gamblers began gambling around 26 years of age and experienced gambling problems for a mean total of seven years. Compared to non/infrequent gamblers, disordered gamblers gambled more days a month prior to their interview and preferred to play the slot machines, lotteries and scratch cards. Disordered gamblers were more likely to meet lifetime diagnostic criteria for pathological gambling. Non/infrequent gamblers reported they gambled less days in the month before interview and none were diagnosed as disordered gamblers. Results of their study concluded that older adult disordered gamblers were more likely to experience increased severity of health and psychosocial functioning including severe medical, family, social, psychiatric, and alcohol problems, scored higher on measures of depression, anxiety, paranoid ideation and psychoticism and scored lower on measures of general health and overall physical health compared with non/infrequent older adult gamblers (Pietrzak et al. 2005).

Their study may not maximise the generalisability of the findings to older adults because the sample was drawn from outpatient medical centers and senior centers and not the general adult population but it does show that excessive and problematic gambling is

significantly related to psychiatric disorder. Pietrzak et al. (2005) observed how excessive gambling contributed to an unhealthy inactive lifestyle and older adults were likely to gamble as it suited any physical incapability. The design of the study precluded understandings of the temporal relationships and causal factors between disordered gambling and physical and mental health factors associated with older adults. Pietrzak et al. (2005) suggested that longitudinal studies of disordered gambling are needed to determine temporal and causal relationships amongst these variables.

Gambling has associations with elevated consumption of substances such as alcohol and tobacco (Petry et al., 2005). Reasons include to cope with gambling-associated guilt or anxiety consistent with previously reported gambling-related motivations in older adults (McNeilly & Burke, 2000; Southwell et al., 2008). However, smoking tobacco is not permitted inside UK gambling venues, therefore, customers are asked to smoke outside the building (Health Act, 2006).

Pilver et al. (2013) suggested longitudinal studies examining this possibility are warranted to better understand gambling-related drinking motives and the temporal progression of substance consumption related to gambling in older adults. Adults aged 65 years and older who engaged in past-year 'recreational gambling' (i.e., non-problem/pathological gambling) were more likely than past-year non-gamblers to report past-year alcohol use (Desai et al., 2004).

Pietrzak, et al. (2007) analysed relationships between gambling behaviour and psychiatric comorbidity of adults aged 60 years and older. When compared with older adults without a history of regular gambling, recreational gamblers had significantly elevated rates of

alcohol, nicotine, mood, anxiety, personality disorders and obesity but were less likely to have past-year diagnoses of arteriosclerosis or cirrhosis. Disordered gamblers were significantly more likely than older adults without a history of regular gambling to have alcohol, nicotine, drug, mood, anxiety and personality disorders, and to have past-year diagnoses of arthritis or angina (Pietrzak et al., 2007). Lifetime disordered gamblers were more likely to report angina and arthritis compared to those without a regular gambling history (Pietrzak et al., 2007).

A fundamental research concern is that older adult problem gamblers over the age of 65 years are not represented as a unique subgroup of gamblers different from adult gamblers. The current literature provides theory on motivation, behaviour and disordered gambling either in treatment seeking samples or in general adult population samples. Moreover, there is no solid theoretical account or model identifying specific risk factors for those aged 65 years and over in a British sample. Nower and Blaszczynski (2008) stated there is a lack of systematic research in this area, studies have yet to apply an existing conceptual framework to older adult problem gamblers.

It is relevant to explore how older adults differ to adults and to determine what makes them a more vulnerable subgroup of gamblers. A logical reason in proposing a model that specifically identifies older adult gamblers at risk for problem gambling is warranted and may provide a first step toward early identification, aiming to inform intervention, and treatment strategies. As the current literature suggests, older adults appear vulnerable for late onset of psychiatric problems (Chou et al., 2011; Kessler et al., 2005a; Kessler et al., 2008). Additional factors include lack of mental health services (Mental Health

Foundation, 2009) and decreased physical and psychological well-being has shown to negatively impact gambling behaviour (Pietrzak et al., 2007).

Investigating older adult gambling based upon these factors may lead to a more comprehensive picture of the development of gambling problems amongst older adults. Some older adults have gambled over a course of their lifetime, and consequently if gambling started earlier in life they are more susceptible to the later development of problem and pathological gambling, psychiatric illness and comorbidities (Winters, Stinchfield, Botzet & Anderson, 2002). Alternatively, older adults may not begin gambling until the age of 65 years because of age related changes including more disposable time to gamble as a consequence of retirement, including socialisation and entertainment (McNeilly & Burke, 2000). Burge et al., (2004) stated that those who initiate gambling later in life move quickly to regular gambling and problem gambling, and are unlikely to seek help for their gambling problems.

Age of gambling initiation and severity of gambling and health problems is a reminder of how different older adults over the age of 65 years are compared to adult gamblers. Fundamentally, this age group have different preferences and motivations to gamble and are unlikely to seek treatment. However, it is a combination of specific vulnerabilities that highlight older adults are a unique high risk subgroup for developing problem gambling compared to adults. The first steps in developing a valid model of risk factors for older adult problem gambling behaviour will be to determine which behaviours through descriptive analysis are statistically integral to the construct. These include psychological and physical health variables, gambling behaviour including preferences, frequency, duration and demographics.

3.1.8 Aim

The aim of the study is to evaluate psychological and physical health variables as predictive risk for problem gambling behaviour in British older adults aged 65 years and older.

3.1.9 Hypotheses

Based on the findings from study one it is predicted that the psychological health variables, depression, anxiety and loneliness are significantly related to predictive risk for problem gambling behaviour in British older adults. It is also predicted that physical health variables, frailty and pain are also significant predictive risk factors for problem gambling behaviour.

3.2 Methodology

3.2.1 Design

A quantitative observational design employing a cross-sectional survey method was employed to explore relationships between psychological and physiological constructs and patterns of gambling behaviour including problem gambling. Mental disorder including anxiety and depression, and physical health relating to frailty and pain, as well as loneliness were measured.

3.2.2 Sampling Procedure

A stratified opportunity sample from diverse British regions within the UK were visited to include different sociodemographic areas and different types of gambling and non-gambling social groups. Data was collected from 5 UK cities including Hull, Leeds, Nottingham, Lincoln and Enfield (London) including British Towns and villages. This was

to engage wider social frameworks in terms of socio-economic status and culture.

Collating data from these specific geographical locations increased ratios of British older adult gamblers, non-gamblers and problem gamblers and older adult general populations.

The researcher also accessed commercial gambling venues to increase the sample variation of older adult gamblers. Including gambling venues was vital to achieve a suitable sample of older adult gambling and problem gambling to achieve clear comparisons of three subgroups of British older adult gamblers, problem and non-gamblers. Gambling environments such as bingo halls, casinos, amusement arcades and betting shops are not homogenous but are distinguished by a range of factors including size, price of gambling activity, accessibility and availability to different types of gambling activities based on their geographical location (Reith, 2006). Therefore, it was important to visit all types of locations because these factors can affect gambling behaviour, as some gambling venues offer limited gambling opportunities whereas large bingo halls, for example, often provide a larger opportunity for other types of gambling, specifically slot machine play.

Commercial gambling venues often offered a complete gambling experience including dining and free caffeinated beverages. The rest of the sample included general older adult populations from non-clinical communities that did not gamble in commercial environments or were non-gamblers located in older adult community centres.

3.2.3 Inclusion Criteria

The specific vulnerability of the elderly population was acknowledged and cognitive capacity was an important part of the research design. British older adults aged 65 and older that were cognitively intact and retain mental capacity to independently give valid informed consent were invited to participate in this study. The clock-drawing test (Shua-

Haim, Koppuzha, & Gross, 1996) helped identify individuals that were cognitively intact and it is recognised as a valid screening tool for Dementia and early Alzheimer's disease. The researcher used this tool on occasions when it was difficult to observationally gage the cognitive state of the older adult.

3.2.4 Participants

Table 3 reports that a sample of ($N = 695$) UK older adults participated in this study. Gender demonstrated weak equivalents (528 females Versus 167 males) and was skewed towards females aged 65-69 years.

Table 3. *Sample demographics across age*

Age	Male ($N = 167$)	Female ($N = 528$)
65-69	41	199
70-74	37	95
75-79	40	93
80-84	32	71
85-89	11	37
90+	6	33

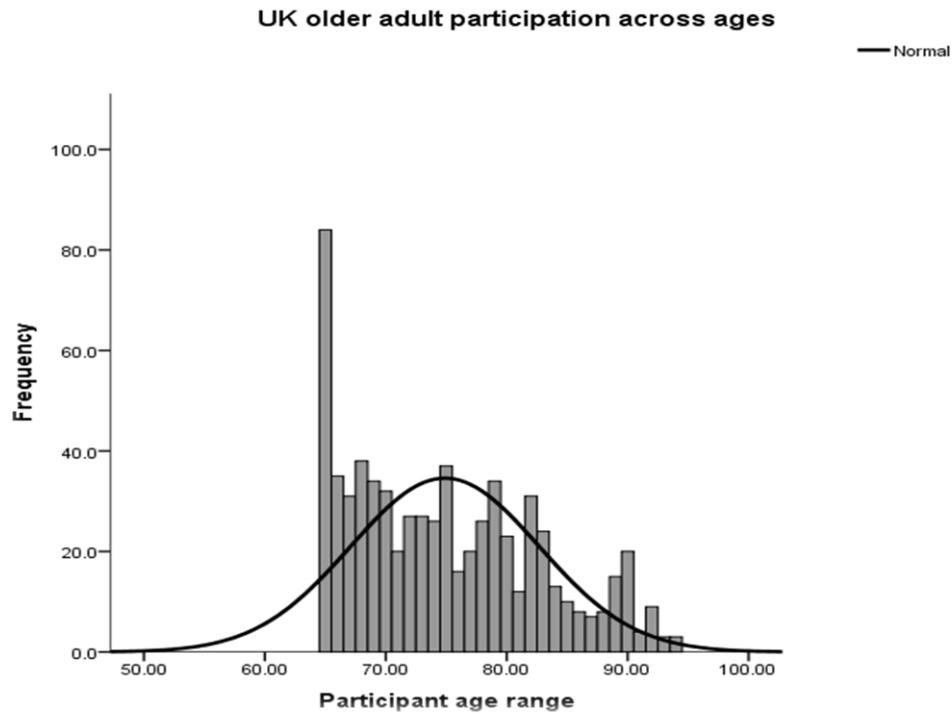


Figure 2 Shows a relatively evenly weighted distribution across each of the age categories ranging from 65-94 years of age, $M = 74.4$, $SD = 8.46$ (Normal distribution of the age ranges of participants).

This study focused on three demographics including age, marital status and gender to understand gambling behaviour with in specific demographic subgroups. Demographic data included marital status because the study was interested in the lifestyles of British older adults specifically types of marital status and if this was related to gambling behaviour. The majority of the sample were married or widowed as shown in Table 4.

This study did not examine gambling behaviour in minority ethnic groups. It was anticipated the dominant culture would be British in the survey. Culture, including values and beliefs of an individual influences the understandings of gambling behaviour and the propensity to seek treatment for problem gambling (Majamaki & Poysti, 2012). Poysti (2013) stated the practice of gambling in itself does not contain the meaning of gambling

and meanings are rather negotiated in social interaction. Therefore, people in one culture can have different understandings of the idea of gambling as well as problem gambling than people in another.

This suggests that how gambling is understood as a cultural phenomenon, is not individually rational, but is intersubjective and therefore specific to a cultural group (Poysti, 2013). From this cultural perspective, individuals from different ethnic origins are likely to share the same gambling culture, influencing the same understandings of gambling behaviour. This study was focused on exploring the gambling behaviour of British older adults regardless of their ethnicity.

Table 4. *Sample demographics across marital groups*

Marital Status	(N =694)
Single	33
Married	311
Widowed	272
Divorced	70
Separated	8

This study employed a purposive sample and did not ask the general population therefore data was skewed towards problem gambling behaviour (PGSI) as data was collected within gambling environments, with skewness of 5.960 (SE .094) and kurtosis of 42.319 (SE.189).Table 5 provides a detailed summary.

Table 5. *Sampling distributions from type of psychological and physical measure including type of gambling activity and participation level (N = 695).*

Measure	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Pain Total	.478	.094	-1.315	.188
Anxiety Total	1.591	.095	2.660	.189
Depression Total	1.298	.093	1.493	.186
Loneliness Total	.965	.093	-.253	.185
PGSI Total	5.960	.094	42.319	.189
Frailty scale	.433	.093	-.605	.185
Bingo Participation	1.857	.093	2.814	.185
Lotto Participation	2.065	.093	7.574	.185
Race Participation	12.900	.093	175.072	.185
Slots Participation	5.235	.093	31.833	.185

3.2.5 Instruments

A total of 7 self-report instruments measured the psychological and physical health and gambling behaviour of UK older adults aged 65 and older. The instruments are not clinical diagnostic tools but rather they are screening tools appropriate for use in non-clinical populations. Therefore, the researcher was able to administer these self-report measurement tools effectively. The Canadian Study of Health and Ageing 7-point Clinical Frailty Scale (CSHA; Rockwood, et al., 2005) and the Geriatric Anxiety Inventory (GAI; Pachana, et al., 2007) have permission granted by the authors to use for research and all other instruments were available freely online for educational and research purposes only.

3.2.5.1 Physical Frailty

The Canadian Study of Health and Ageing 7-point Clinical Frailty Scale, (CSHA; Rockwood et al., 2005) is a self-report measurement tool and is scored on the basis of illness and activity level. Level 1 acknowledges the individual as fit, active and well-motivated, whereas level 7 indicates those severely frail and/or terminally ill. Those at level 6 or 7 are completely dependent on others for instrumental and non-instrumental Activities of Daily Living (ADL; Rockwood et al. 2005). Older adults at levels 3, 4 or 5 are well with treated disease or may experience being ‘slowed up’ or have disease symptoms and limited dependence.

The CSHA Clinical Frailty Scale is a valid and reliable measurement of frailty when correlated with other established tools; correlation with the Frailty Index (Jones, Song, Mitnitski & Rockwood, 2005) was high and reliability was very high (intraclass correlation coefficient 0.97, $p < .001$). The CSHA Clinical Frailty Scale mixes items such as comorbidity, cognitive impairment and disability and does not solely focus on physical

frailty; unintentional weight loss, slow walking speed, subjective exhaustion, low grip strength and low levels of physical activity was also measured (Fried, Ferrucci, Darer, Williamson & Anderson, 2004).

3.2.5.2 Pain

The 12 item Geriatric Pain Measure Short Form (GPM SF-12; Blozik et al., 2007) is a multidimensional valid and reliable measure of pain for use in community-dwelling older adult sample. It is a practical, short, easy to administer self-report assessment instrument and addresses aspects of pain likely in the development of functional status decline. This abbreviated version of the 24 - Item Geriatric Pain Measure; GPM-24 (Bruce, Ferrell, Stein & Beck, 2000) was developed to reduce respondent burden. The GPMSF-12 concurrent validity was evaluated using data from the GPM-24 original sample and results indicated that the measure is highly reliable. In the validation sample the Cronbach's α for the GPMSF-12 was 0.92 (individual subscales range 0.77- 0.92) and the Pearson correlation coefficient (r) between the GPMSF-12 and the original GPM -24 was 0.98. When correlated with other established tools the correlation coefficient between the GPMSF-12 and McGill Pain Questionnaire (MPQ; Melzack, 1975) was reliable as was the correlation between the original GPM-24 and the MPQ. There is no established criterion standard to compare a pain scale in older adults and therefore comparisons rely on other existing commonly used and validated pain scales (Blozik et al., 2007). The GPMSF -12 did not investigate test retest reliability, yet this was highly reliable in the original GPM-24 (Pearson's coefficient $r = 0.90 <.0000$; Ferrell, Stein & Beck, 2000). Cronbach's α for current study = 0.91.

3.2.5.3 Gambling behaviour

The Problem Gambling Severity Index; PGSI (Ferris & Wynne, 2001) is nine item self-report instrument designed to measure a single gambling construct and designed for use in general populations rather than in a clinical context and was suitable for a non-clinical community sample of older adults. It is a valid tool for assessing degrees of problem gambling and is a viable alternative to other gambling self-report instruments like the South Oaks Gambling Screen; SOGS (Lesieur & Bloom, 1987) designed for use in a clinical context. The PGSI has adequate internal consistency and test–retest reliability (Ferris & Wynne, 2001). Unlike the SOGS that classifies the extent of problem gambling in to limited risk groups (non/problem or pathological; Lesieur & Bloom, 1987) the PGSI assesses the extent of gambling risks (e.g. low- moderate,) based on the PGSI score; no problem (0), low problem (1-2) moderate problem, (3-7) and severe problem, (8-9). Furthermore, UK older adult gambling behaviors including gambling frequency, duration, along with gambling preferences were also recorded via direct self-report questions. Cronbach's α for current study = .82.

3.2.5.4 Loneliness

The Six Item Loneliness Scale (De Jong Gierveld & Tilburg, 2006) is a self-report likert scale and is a reliable and valid instrument for measuring overall, emotional, and social loneliness and is suitable in large surveys of older adults. Validated on a broad range of ages, reliability coefficients did not differ according to age. All items have five response categories (no! / no / more or less / yes / yes!). Higher scores indicate greater levels of loneliness. The Loneliness Scale can be used as a unidimensional tool to measure total loneliness or to distinguish those that are emotionally and socially lonely. Cronbach's α for current study =.81.

3.2.5.5 Depression

The 15 - Item Geriatric Depression Scale (GDS 15; Sheikh & Yesavage, 1986), consists of 15 self-report items, has a yes or no format and assesses affective and behavioural symptoms of depression specifically amongst older adults (Sheikh & Yesavage, 1986). Scores range from 0-4 no depression, 5-9, mild depression and 10-15 more severe depression, and because it is brief, non-somatically focused, and can be either observer- or self-administered, the GDS-15 is a practical, valid instrument suitable for a survey design. The GDS-15 is a simple dichotomous yes or no response, whereas the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and the BDI-11(Beck, Steer & Brown, 1996) endorse multiple responses as each item consists of 4 statements that range from a mild/neutral (mild=0) to severe (severe=3). Schneider, Eaton, Zemansky, and Pollock (1992) observed that depressed older adults with a mean age of 64 were more likely than were controls to endorse multiple responses per item on the BDI than on the GDS. This may reflect difficulties older adults with higher levels of depression have in making decisions on the multiple-choice format of the BDI compared to the GDS-15 (Norris, Gallagher, Wilson & Winograd, 1987). Olini and Zesknski (1991) observed that psychometric properties and the reliability of a screening instrument may decrease as a function of psychometric instability (e.g. false positives). The sensitivity and specificity of the GDS-15 have been evaluated in a variety of elderly populations, geriatric inpatients, primary care outpatients, elderly medical patients, and amongst subjects older than 85 years (Sheikh & Yesavage, 1986). The GDS-15 demonstrated good divergent validity with measures of anxiety among older adults (Snyder, Stanley, Novy, Averill & Beck, 2000). Cronbach's α for current study = 0.79.

3.2.5.6 Anxiety

Generalised anxiety disorder is characterised by excessive and uncontrollable worry accompanied by three or more of the following; hyper - arousal symptoms, restlessness, fatigue, concentration problems, irritability, muscle tension, and sleep disturbance (American Psychiatric Association, APA; 1994). The Geriatric Anxiety Inventory (GAI; Pachana, Byrne, Siddle, Koloski, Harley & Arnold, 2007) is self-report measure of anxiety with a 20 item response of agree or disagree. It was developed to assess the symptoms of anxiety specifically among older adults. Receiver operating characteristic analysis indicated a cut-off point of 10 or 11 for the detection of Generalized Anxiety Disorder (GAD; APA, 1994) in a psychogeriatric sample. The cut-off point correctly classified 83% of patients with sensitivity (recall rate) of 75% and a specificity of 84%. Concurrent validity with a variety of other measures was demonstrated in both normal elderly populations and the psychogeriatric sample. Inter-rater and test-retest reliability were found to be excellent. The GAI has high reliability and convergent validity, Cronbach's α for the GAI was 0.91 when tested amongst ordinary elderly people and 0.93 in a psychogeriatric sample. The GAI cut-off point to identify patients with any anxiety disorder found an optimum cut-point of 8/9, correctly classifying 78% of patients with a sensitivity of 73% and a specificity of 80%. Participants GAI cut-off point within this study was scored to any anxiety disorder (8 or above). Cronbach's α for current study = 0.91.

3.3 Procedure

Before data collection, ethical approval was awarded from the Health Life and Social Science Faculty Ethics Committee, the University of Lincoln. The survey consisted of 74 questions and took approximately 15-30 minutes to complete. The survey was either self-

administered in paper format if the respondent was confident to complete on his/her own. Alternatively, the researcher assisted with completion on a one to one basis.

3.3.1 Ethical considerations

Informed consent

The ability to understand and make a decision when it needs to be made is referred to as mental capacity, and this study excluded elderly participants who lacked mental capacity to make their own decisions. The Mental Capacity Act (2005) states that people must be given appropriate help and support to enable them to make their own decisions or to maximise their participation in any decision-making process. The act aims to balance an individual's right to make decisions for themselves with their right to be protected from harm if they lack capacity to make decisions to protect themselves. Furthermore, those working with adults who lack capacity to make valid decisions have an ethical duty to consider the code of practice (Mental Capacity Act, 2005). For participants unable to give their informed consent they were thanked for their interest in the study and were sensitively informed they were unable to continue.

When the researcher was confident the participant was able to give informed consent, the consent form was explained verbally and it was read by each participant and signed. For those able to give valid informed consent the researcher was able to ethically ask questions from the survey and write down the participant's responses. In the format of a dyadic group there was face to face verbal communication between the researcher and participant. All reasonable steps were adhered to safeguard the security of any records; all surveys were filed, stored and transported in a locked filing cabinet.

All participants were fully briefed at the start of the data collection and debriefed when data collection was completed or interrupted. The researcher left contact details if they wished to discuss the study.

The survey design asked questions related to psychological, physical health and gambling behaviour specifically problem gambling, therefore some questions have the potential to raise emotive issues. Talking about personal behaviour, and why some people gamble is difficult for some and this survey may be the first time older adults have evaluated their gambling behaviour or psychological and physical health. The researcher continuously observed for discomfort and the data collection ended if this was identified. All participants were left in a positive state. The researcher was able to take action if participants required additional support or counselling and help was provided in the form of a gambling helpline number that the participant could contact immediately and it was suggested that participants should visit their GP if they were feeling unwell. The researcher also had previous experience with vulnerable older adult populations when serving a role as a National Health Service researcher.

3.3.2 Pilot Study

The survey questionnaire was piloted and pre-tested ($N = 50$) older adults aged 65 years and older visiting a local Age UK center to obtain a sample that was reflective of the overall study target population. An aim was to observe if the survey posed risk to the older adult population, specifically to establish if questions were emotive or distressing.

It was important to gain information to aid the researcher collate data effectively. This included observing for problems with implementation of the survey and specifically collecting data effectively and efficiently causing minimal disruption to older adult groups. The survey was piloted in gambling and non-gambling venues as it would be in the study. The researcher observed for questions that did not make sense to participants and evaluated the length of time it took to complete. It was important to identify if the survey design was suitable for older adults. A main consideration was the duration of data collection for the survey, specifically if participation was challenging. The researcher asked participants if they found the survey challenging and no ethical or design concerns were observed. The survey used language that was easy to understand although this did not affect measurement validity and was printed in a larger font size of 14 making it easier to read.

3.3.3 Online Survey

An online survey was created using the computer software package Qualtrics and the first five were observed for problems to potentially identify limitations in the survey design. A handful of participants completed the survey online. Access to the Internet by single UK adult households varies considerably depending on age, and it was observed where the adult is aged 65 years or over, only 40% of households had an Internet connection. In contrast, 74% of households had an Internet connection where the adult was aged 16 to 64 years (Office for National Statistics; ONS 2013). Thirty-seven percent of adults aged 65 years and older reported using a computer daily compared with 88% of 16-24 year olds (ONS, 2013). Furthermore, accessing the Internet 'on the go' using mobile phones and/or portable computers by age within the last three months, only 17% of those aged 65 years and older accessed the internet compared with 94% aged 16-24 years (ONS, 2013). Therefore, low online survey participation levels were expected for this age group.

Online data collection options were made available to broaden the stratified sample and recruit older adults that may be more inclined to gamble on line and general older adult populations that access the internet or are house-bound. The survey was advertised through social media, including ‘Twitter’, and was advertised in poster format on older adult community group notice boards (i.e., Age UK), providing a web link and the researcher’s contact information.

3.3.4 Older adult commercial gamblers

The researcher coordinated commercial gambling recruitment sites to visit with the assistance of a commercial gambling manager. The manager supplied contact details of the gambling clubs that were specifically selected by the researcher in order to reach diverse geographical recruitment locations. The manager informed the researcher of commercial gambling sites with increased potential for recruitment following high survey response rates from their internal research. Sampling was conducted on weekdays between ten and four pm as these were busy periods where availability and accessibility to this age group was most probable.

3.3.5 Recruitment: Commercial and non-commercial gambling sites

The Age UK network comprises 170 local Age UKs reaching most of England. It is a charity and provides free advice to adults aged 55 years and older about health care, financial concerns, community, travel and lifestyle, work and learning. Many UK centres have a shop and restaurant/cafe and run social activities at their centres. Age UK played an over-seeing supporting role to assist in reaching non-gambling and non-commercial gambling older adult populations. They operate daytime gambling related recreational

activities such as bingo and card games and accommodate for older adults with a range of different needs including varying levels of cognitive capacity and mental and physical health. These factors created a diverse sample of general older adults and strengthened psychological and physiological health comparisons and gambling behaviour across the data.

Age UK helped collaborate with other external older adult networks independent of age UK overall increasing recruitment opportunities. Older adults were more inclined to participate in a study if it is recommended to them by their health care/recreational provider, in whom they have instilled trust (Stevens & Pletsch, 2002). Conversely, older adults may be concerned that their care may be threatened if they refuse to participate or some participate because they are lonely and lack social contact Steinke, (2004).

Throughout (this study all potential participants were informed that this research was independent of Age UK, the commercial gambling chain in which they are a customer and all other independent activity groups that participated. It was explained this study was funded by the Responsible Gambling Trust and the student researcher was from the University of Lincoln. Potential participants were informed that non-participation in the study would not affect their access to any recreational activities including commercial and non-commercial gambling environments and services provided by Age UK.

Age UK are located in most UK cities enabling older adults to attend from surrounding rural and urban areas. The charity often transported the home-bound elderly to the centres enabling the researcher to access those likely to stay at home.¹ Conducting research in the

¹ It was not considered appropriate for the researcher to approach vulnerable elderly people at home. In seeking advice on this method of collecting data from home-bound older adults, Age UK suggested that this approach was perceived as an invasion of privacy to the older adult and may cause distress to the elderly person if strangers are visiting the home without prior invitation.

home setting with home-bound older adults presents distinct ethical and practical challenges that require special consideration (Locher, Bronstein, Robinson, Williams & Ritchie 2006). Therapeutic misconception and researcher role conflict are ethical issues that are particularly salient in studying home-bound older adults (Locher et al., 2006). Therapeutic misconception is likely to occur when participants do not understand that research and treatment are different and believe they are to receive some form of treatment or care when the researcher arrives (Locher et al, 2006). Researcher role conflict may occur if the researcher observes a situation in the home setting that is immediately or potentially harmful to the well-being of the older adult participant. Potentially there is the obligation of the researcher to remain objective and not do anything that could interfere with the data. Alternatively, there is an obligation as a professional/health care provider or simply as a human being to act in response to perceived abuse, neglect, or exploitation of the study participant (Locher et al., 2006). Further ethical issues include the home setting as the interview site, as particular care is required on the part of the researcher to address these ethical issues (Locher et al., 2006).

3.3.6 Day-care services for UK older adults

Day services help older people maintain their independence, by helping them to care for themselves, carry out tasks of daily living and maintain and improve personal skills. They assist in maintaining links with the community avoiding social isolation. They provide recreational activities such as arts and crafts and mental stimulation games. The centres provide carers with an opportunity to have relief from the stress of caring and time for themselves. These services are usually offered in day centres. Day centres specialise in assisting people with either mental frailty or physical disability. Older adult day centres were visited to enrich the sample with data from populations that can no longer independently structure their daily activities, are isolated, desire companionship and cannot

safely be left at home alone for long periods because of physical incapacity including frailty.

3.3.7 Survey completion

Gatekeepers for this study were either employed commercial gambling staff or volunteers running community bingo groups (e.g. in community village halls). They were contacted via e-mail or phone and provisions were made for the researcher to visit to talk about the study. The researcher when arriving at the recruitment site provided a verbal presentation providing full details of the research study's aim and design. The researcher explained all ethical procedures, specifically the procedure of informed consent, informing all participants about their ethical rights to withdraw from this study at any time and that all the information provided is confidential and anonymous. Following the presentation participants had an opportunity to express their interest in participating and to ask the researcher questions away from other members of the group. Participants were also informed that a survey was available to complete online if they had internet access, particularly if they felt more comfortable completing the survey online.

3.4 Results

3.4.1 Descriptive analysis

The primary aim was to evaluate psychological disorder, physiological health, loneliness and gambling behaviour of British older adults as predictive risk factors for problem gambling. Descriptive data informed on the gambling behaviours of this population, providing insight and enhanced understanding of gambling participation levels, patterns, type of gambling activity preferences and frequency, and also to identify demographic, physical and psychological health differences of gamblers, non-gamblers and problem gamblers.

3.4.2 Sex differences in Problem Gambling Behaviour and Gambling Activity Type:

An independent samples *t*-test found there was no significant difference between sex and problem gambling behaviour. Older adult male [$M = 0.94, SD = 3.66$] and female [$M = 0.71, SD = 2.72$] PGSI scores were not statistically significant, $t(667) = .850, p = .396, d = 0.22$. Although there were some significant variations in PGSI levels and type of gambling activity participation, with female bingo players [$M = 5.46, SD = 7.59$] producing statistically significantly higher PGSI scores than males [$M = 3.92, SD = 6.70$], $t(691) = -2.34, p = .013, d = 0.31$. In contrast, male lottery gamblers [$M = 2.86, SD = 3.45$] produced significantly higher PGSI scores, $t(693) = 2.39, p = .018, d = 0.27$ compared to females [$M = 2.13, SD = 3.28$]. Likewise, sports betting produced significantly higher PGSI scores amongst males [$M = 1.88, SD = 6.37$] compared to females [$M = 0.03, SD = 0.24$], $t(693) = 3.75, p = .001, d = 0.17$. There was no statistically significant difference in PGSI level across male [$M = 1.59, SD = 4.89$] and female [$M = 1.50, SD = 5.57$] slot machine gamblers, $t(691) = .844, p = .833, d = 0.22$.

3.4.3 Sex Differences across Session Length and Gambling Activity Type:

An independent samples *t*-test was conducted to explore sex differences across session length and type of gambling activity. Analysis of the data revealed that older adult females played bingo for a significantly longer period per gambling session compared to males $t(693) = -3.34, p = .001, d = 0.28$. Male older adults engaged in sports betting for statistically significantly longer sessions compared to females $t(693) = 3.16, p = .001, d = 0.19$. No significant sex difference was reported for slot machine session length $t(693) = 1.55, p = .074, d = 0.23$ or indeed across lottery session length, $t(693) = 1.35, p = .140, d = 0.33$.

3.5 Sex Differences in Gambling Behaviour:

3.5.1 Sex Differences across Gambling Frequency and Gambling Activity Type:

An independent samples *t*-test identified differences between sex, amount of days likely to gamble over the past month and type of gambling activity. Females statistically significantly gambling on bingo more days than males $t(691) = -3.94, p = .001, d = 282$. Female older adults were also more likely than males to participate in casino style games, $t(693) = -2.24, p = .025, d = 0.53$. However, there was no statistical difference with respect to slot machine gambling frequency $t(691) = 1.32, p = .187, d = 0.25$ for females compared to males.

3.5.2 Sex Differences and Psychological Health Descriptives.

A quarter of the total sample ($N = 161$) was experiencing anxiety whilst $N = 256$ were at risk of experiencing anxiety. Older adults aged 65 - 69 ($N = 51$) were more likely to report experiencing anxiety compared to all other age groups. Females were more likely to report having anxiety ($N = 124$) compared to males ($N = 21$). Females were also more likely to report severe depression ($N = 21$) compared to males ($N = 9$). Nearly a quarter of females ($N = 152$) were lonely compared to $N = 54$ of older adult males.

3.6 Sample Characteristics, Sex Differences and Problem Gambling

3.6.1 Problem gambling behaviour

Table 6 shows that British older adult women are predominantly more at risk for a level of problem gambling behaviour ($N = 76$) compared to males ($N = 26$). The descriptive data shows a high percentage of low level problem gambling older adult women ($N = 41$), suggesting female gamblers are a vulnerable group likely to develop moderate and/or

higher level problem gambling compared with males. Those that were widowed ($N = 272$) were more likely across marital groups to report severe problem gambling behaviour (Table 4).

3.7 Sample Characteristics including Physical and Psychological Health

3.7.1 Table 8 shows the majority of the sample reported being in good physical health and were fit, well or well with treated disease ($N = 441$), however older adult women ($N = 134$) were more likely to be experiencing severe pain compared to males ($N = 30$).

3.7.2 Sample characteristics and Psychological wellbeing

The sample showed that many older adults were depressed, anxious and lonely.

Psychological health data patterns revealed that $N = 161$ older adults were anxious compared with $N = 30$ that were severely depressed, and nearly a third of the sample ($N = 206$) reported they were lonely.

3.8 Descriptive Statistics: Problem Gambling

Table 6 demonstrates 15.3% ($N = 102$) of the sample met criteria for at least some level of problem gambling. Overall 3.44% ($N = 23$) reported severe problem gambling, 3.74% ($N = 25$) were moderate while 8.10% ($N = 54$) were identified as low level problem gamblers.

Table 6. *Characteristics for Problem Gambling Severity Index; PGSI (Ferris & Wynne, 2001).*

PGSI Level	<i>N</i> = 669	% of total sample
No problem	567	84.8
Low problem	54	8.10
Moderate problem	25	3.74
Severe Problem	23	3.44
Total	669	100.0

Table 7 shows that females (*N* = 76) were more likely than males (*N* = 26) to report any level of risk for problem gambling behaviour. By age group, female older adults aged 65-69 (*N* = 40) were predominantly more likely compared to other age groups, to report a level of problem gambling behaviour.

Table 7. *PGSI level of problem gambling behaviour by age group and gender.(N= 669)*

Age	Severe problem gambling		Moderate problem gambling		Low problem gambling		No problem gambling	
	% of total sample (N=)		% of total sample (N=)		% of total sample (N=)		% of total sample (N=)	
	Male	Female	Male	Female	Male	Female	Male	Female
65-69	0.45 (3)	0.60 (4)	0.30 (2)	1.35 (9)	0.60 (4)	4.03 (27)	4.63 (31)	23.2 (155)
70-74	0.000 (0)	0.45 (3)	0.30 (2)	0.30 (2)	0.45 (3)	0.59 (4)	4.48 (30)	12.4 (83)
75-79	0.000 (0)	0.45 (3)	0.30 (2)	0.30 (2)	0.45 (3)	1.34 (9)	5.08 (34)	11.2 (75)
80-84	0.15 (1)	0.45 (3)	0.000 (0)	0.89 (6)	0.30 (2)	0.14 (1)	3.88 (26)	9.12 (61)
85-90	0.15 (1)	0.30 (2)	0.000 (0)	0.000 (0)	0.14 (1)	0.000 (0)	1.34 (9)	4.03 (27)
90+	0.30 (2)	0.15 (1)	0.000(0)	0.000 (0)	0.000 (0)	0.000 (0)	0.59 (4)	4.78 (32)
Total	1.00 (7)	2.40 (16)	0.99 (6)	2.84 (19)	1.94 (13)	6.13 (41)	20.0 (134)	64.7 (433)

3.8.1 Problem Gambling and Marital Status

Those married or in a domestic partnership or widowed ($N = 20$) were more likely to report severe gambling behaviour compared to those that are single, divorced or separated ($N = 3$). The majority ($N = 31$) of low-problem gamblers were also married or in a domestic partnership when compared to all other categories.

3.8.2 Physical health. Frailty: Table 8 shows that a large portion of the sample ($N = 441$) was physically fit, well with no disease or well with treated disease. The rest of the sample ($N = 249$) were either vulnerable to frailty, experiencing frailty or were severely frail or terminally ill. All levels of frailty (1-7) were evenly distributed across the sample.

Table 8. *Level of physical frailty across sample*

Level of Frailty	($N = 695$)	% of Total sample
No level	5	0.72
1-Fit	118	17.0
2- Well-no disease	138	19.9
3-Well-treated disease	185	26.6
4-Vulnerable	105	15.1
5-Mildly frail	63	9.06
6-Moderately frail	69	9.91
7-Severely frail	12	1.73
Total	695	100

3.8.3 Pain

Table 9 demonstrates that over half of the sample ($N = 436$) was experiencing some level of pain, while $N = 326$ of those were either in moderate or severe pain. Female older adults were considerably more likely to report levels of severe or moderate pain compared to male older adults ($N = 255$ versus $N = 71$).

Table 9. *Participants level of pain by gender (N = 675)*

Level of pain	Male % (N=)	Female % (N=)	Sample % (N=)
No Pain	8.44 (57)	27.0 (182)	35.4 (239)
Mild Pain	4.74 (32)	11.5 (78)	16.2 (110)
Moderate Pain	6.07 (41)	17.9 (121)	24.0 (162)
Severe Pain	4.44 (30)	19.9 (134)	24.3(164)
Total Sample	23.7 (160)	76.3 (515)	100 (675)

3.9 British Older Adult Gambling Behaviour

3.9.1 Problem Gambling across Gambling Activity Types.

Approximately a third of the sample gambled on at least one activity out of the last 30 days. Overall, those that take part in a greater number of gambling activities are more likely to report severe problem gambling behaviour as demonstrated in table 10.

Table 10. *Problem Gambling Behaviour across Gambling Activity Type and Participation in last 30 days (N = 664).*

	0 Activities	1 Activity	2 Activities	3 Activities	4 Activities	5 Activities	Total
None (N =)	28.8% (191)	32.8% (218)	17.6% (117)	4.81% (32)	0.45% (3)	0.15% (1)	84.6% (562)
Low	0.60% (4)	3.61% (24)	1.65% (11)	2.10% (14)	0.15% (1)	0.00% (0)	8.11% (54)
Moderate	0.00% (0)	0.90% (6)	1.80% (12)	1.05% (7)	0.00% (0)	0.00% (0)	3.80% (25)
Severe	0.15% (1)	0.15% (1)	0.90% (6)	1.05% (7)	1.20% (8)	0.00% (0)	3.50% (23)
Total	29.5% (196)	37.5% (249)	22.0% (146)	9.01% (60)	1.80% (12)	0.2% (1)	100% (664)

3.9.2 Participants were more likely to spend one hour or more playing types of gambling activities such as bingo ($N=247$) compared to participants more likely to spend less than 10 minutes on high event frequency gambling, with $N = 30$ playing the slot machines and $N = 26$ betting. Many participants spent 10 minutes or less purchasing a lottery ticket ($N = 301$). Table 11 demonstrates these findings.

Table 11. *Participation Time across Gambling Activity Type (N = 695).*

Type of activity	Bingo	Lotto	Casino Games	Betting Session	Slots	Other
No time spent gambling (N =)	48.5% (337)	55.3% (384)	99.0% (687)	94.2% (654)	87.6% (609)	97.1% (674)
<10mins	0.90% (6)	43.3% (301)	1.00% (7)	3.75% (26)	4.32% (30)	1.01% (7)
10-20mins	0.43% (5)	0.86% (6)	0.00% (0)	0.43% (3)	1.15% (8)	0.00% (0)
21-30mins	7.20% (50)	0.28% (3)	0.00% (0)	0.29% (2)	3.50% (24)	1.20% (8)
31-40mins	3.30% (23)	0.14% (1)	0.00% (0)	0.00% (0)	0.72% (5)	0.14% (1)
41-60mins	4.17% (29)	0.00% (0)	0.00% (0)	0.00% (0)	0.43% (3)	0.00% (0)
61mins+	35.5 % (247)	0.14% (1)	0.00% (0)	1.30% (9)	2.30% (16)	0.60% (4)
Total	100% (695)	100% (695)	100% (695)	100% (695)	100% (695)	100% (695)

3.9.3 Problem Gambling and Gambling Activity Participation in last 30 days.

All participants who played a lotto, bingo and the slot machines ($N = 55$) were more likely to be severe problem gamblers. Sample sizes were low for horse racing and card games, although, low, moderate and severe problem gambling behaviour was still observed amongst these types of gambling activities, as can be seen in Table 12. Bingo players were

also more likely to be low problem gamblers ($N = 6$) compared to those gambling on other types of gambling activities (e.g. $N = 10$ that played slots).

Table 12. *Level of problem gambling behaviour and its association with type of gambling activity played out of the last 30 days.*

Gambling Activity	Bingo		Lotto		Casino Games		Sports Betting		Card Games		Horse Racing		Slot Machines	
	(N= 667)		(N=669)		(N=669)		(N=660)		(N=668)		(N= 669)		(N=667)	
Participant's response (%)	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
No PG	46.6	38.1	47.2	37.5	84.0	0.74	83.8	0.89	82.9	1.79	82.1	2.69	81.4	3.29
(N=)	(311)	(254)	(316)	(251)	(562)	(5)	(561)	(6)	(554)	(12)	(549)	(18)	(543)	(22)
Low PG	0.89	7.19	4.33	3.74	8.07	0.00	8.07	0.00	7.78	0.29	7.02	1.05	6.59	1.49
(N=)	(6)	(48)	(29)	(25)	(54)	(0)	(54)	(0)	(52)	(2)	(47)	(7)	(44)	(10)
Moderate PG	0.15	3.59	2.54	1.19	3.73	0.00	3.73	0.00	3.74	0.00	3.28	0.45	1.34	2.39
(N=)	(1)	(24)	(17)	(8)	(25)	(0)	(25)	(0)	(25)	(0)	(22)	(3)	(9)	(16)
Severe PG	0.59	2.84	0.75	2.69	3.43	0.00	3.43	0.00	2.99	0.44	2.24	1.19	0.75	2.69
(N=)	(4)	(19)	(5)	(18)	(23)	(0)	(23)	(0)	(20)	(3)	(15)	(8)	(5)	(18)

3.9.4 Bingo Session Length across Age Group:

Table 13 shows a large portion of the sample played bingo for more than 61 minutes ($N = 247$) compared to those that gambled on a lottery, bet or played the slot machines ($N = 26$). Females aged 65-69 years ($N = 103$) were more likely to play bingo for 61 minutes or more compared to males ($N = 22$).

A gambling session lasting 21 to 30 minutes was the second most popular session time ($N = 50$) compared to 61 minutes or more across all ages, as shown in table 13. Playing bingo for 21 to 30 minutes was not popular amongst those aged 65-69 years ($N = 5$), as this age group were more likely to play for 61 minutes or more ($N = 81$).

3.9.5 Slot Machine Session Length across Age Group

Females across all age groups were more likely to play the slot machines for less than ten minutes per gambling session ($N = 9$) compared to males ($N = 3$). However playing slot machines for 61 minutes or more was favoured amongst females aged 65-69 years ($N = 10$). Table 13 shows UK older adults were more likely to play the slots for less than 10 minutes ($N = 30$).

3.9.6 Lotto Session Length across Age Group

Table 13 shows the majority of older adults played a lottery in ten minutes or less ($N = 301$). Frequency levels were higher amongst females aged 65-84 years ($N = 186$) compared to males aged 65-84 years ($N = 77$) that were likely to play a lotto for less than 10 minutes. However, these findings may be viewed with caution as the sample is skewed towards female participants although lottery participation was relatively evenly weighted for male participants across all ages.

3.9.7 Sports Betting Session Length across Age Group:

The majority of UK older adults that participated in sports betting took ten minutes or less ($N=26$) to place their bet (Table 13).

Table 13. *Gambling Activity Session Length across Age Group*

Bingo ($N = 695$)							
Age	65-69	70-74	75-79	80-84	85-89	90+	Total
No bingo session	112	69	64	51	29	12	337
<10 minutes	2	1	1	1	1	0	6
10-20 minutes	0	0	1	2	0	0	3
21-30 minutes	5	13	11	11	0	10	50
31- 40 minutes	10	1	6	1	1	4	23
41-60 minutes	8	0	6	4	0	1	29
61 minutes +	103	38	44	33	17	12	247
Total	240	132	133	103	48	39	695
Lotto ($N = 695$)							
No lotto session	121	80	76	60	22	25	384
<10 minutes	113	52	57	41	25	13	301
10-20 minutes	4	0	0	1	1	0	6
21-30 minutes	0	0	0	1	0	1	2
31-40 minutes	1	0	0	0	0	0	1
41-60 minutes	0	0	0	0	0	0	0
61 minutes+	1	0	0	0	0	0	1
Total	240	132	133	103	48	39	695

Slots (*N* = 695)

No Slot session	203	119	115	93	42	37	609
<10 minutes	12	7	4	4	2	1	30
10-20 minutes	2	0	3	1	1	1	8
21-30 minutes	11	1	6	3	3	0	24
31-40 minutes	3	1	1	0	0	0	5
41-60minutes+	1	1	1	0	0	0	3
61 minutes +	8	3	3	2	0	0	16
Total	240	132	133	103	48	39	695

Sports Betting (*N* = 694)

No bet session	230	126	120	97	44	37	654
<10 minutes	9	5	7	3	1	1	26
10-20 minutes	0	1	1	0	1	0	3
21-30 minutes	1	0	0	1	0	0	2
31-40 minutes	0	0	0	0	0	0	0
41-60minutes+	0	0	0	0	0	0	0
61 minutes +	0	0	5	1	2	1	9
Total (<i>N</i> =)	240	132	133	102	48	39	694

3.10 Gambling Frequency:

3.10.1 Bingo Participation Frequency across Age Groups.

Level of gambling frequency was measured by how many days out of the last 30 participants spent playing on each specific gambling activity. The 65-69 year age group (*N* = 74) were more likely to play bingo 1-10 days per month compared to all other age groups. The 65-69 year age group (*N* = 16) were more likely to play bingo nearly every day, as demonstrated in

Table 14. However, playing bingo nearly every day (21-30 days) was observed across all age groups ($N = 34$).

Table 14. *Gambling Activity Participation Frequency across Age Groups*

Bingo Frequency (last 30 days) ($N = 693$)							
Age	65-69	70-74	75-79	80-84	85-89	90+	Total
No bingo days	15.7% (109)	10.0% (69)	9.10% (63)	7.21% (50)	4.20% (29)	1.73% (12)	48.0% (332)
1-10 days	10.6% (74)	7.07% (49)	5.48% (38)	5.62% (39)	2.02% (14)	3.17% (22)	34.0% (236)
11-20 days	5.77% (40)	1.30% (9)	3.90% (27)	1.15% (8)	0.58% (4)	0.43% (3)	13.1% (91)
21-30 days	2.31% (16)	0.72% (5)	0.72% (5)	0.72% (5)	0.14% (1)	0.29% (2)	4.90% (34)
Total Sample ($N =$)	34.4% (239)	19.1% (132)	19.2% (133)	14.7% (102)	6.94% (48)	5.62% (39)	100% (693)
Lotto Frequency (last 30 days) ($N = 695$).							
No lotto days	17.4% (121)	11.1% (77)	10.5% (73)	8.63% (60)	3.31% (23)	3.60% (25)	55.0% (379)
1-10 days	16.8% (117)	7.48% (52)	8.48% (59)	5.75% (40)	3.60% (25)	2.01% (14)	44.1% (307)
11-20 days	0.29% (2)	0.29% (2)	0.14% (1)	0.43% (3)	0.00% (0)	0.00% (0)	1.15% (8)
21-30 days	0.00% (0)	0.14% (1)	0.00% (0)	0.00% (0)	0.00% (0)	0.00% (0)	0.14% (1)
Total Sample ($N =$)	35.0% (240)	19.0% (132)	19.1% (133)	14.8% (103)	6.90% (48)	5.61% (39)	100% (695)
Slots Frequency (last 30 days) ($N = 693$)							
No slot days	30.6% (212)	17.6% (122)	16.9% (117)	13.3% (92)	6.10% (42)	5.34% (37)	89.8% (622)

1-10 days	1.44%	0.72%	1.01%	0.72%	0.14%	0.00%	4.03%
	(10)	(5)	(7)	(5)	(1)	(0)	(28)
11-20 days	1.73%	0.14%	1.01%	0.29%	0.58%	0.00%	3.75%
	(12)	(1)	(7)	(2)	(4)	(0)	(26)
21-30 days	0.72%	0.58%	0.29%	0.43%	0.14%	0.29%	2.45%
	(5)	(4)	(2)	(3)	(1)	(2)	(17)
Total (N =)	34.5%	19.0%	19.2%	14.7%	7.00%	5.63%	100%
	(239)	(132)	(133)	(102)	(48)	(39)	(693)

Sports Betting Frequency (last 30 days) (N = 695)

No betting days	32.9%	18.1%	17.7%	14.4%	6.33%	5.32%	94.8%
	(229)	(126)	(123)	(100)	(44)	(37)	(659)
1-10 days	1.01%	0.86%	1.15%	0.29%	0.43%	0.00%	4.00%
	(7)	(6)	(8)	(2)	(3)	(0)	(26)
11-20 days	0.14%	0.00%	0.14%	0.00%	0.14%	0.00%	0.42%
	(1)	(0)	(1)	(0)	(1)	(0)	(3)
21-30 days	0.43%	0.00%	0.14%	0.14%	0.00%	0.29%	1.00%
	(3)	(0)	(1)	(1)	(0)	(2)	(7)
Total (N =)	34.5%	19.0%	19.1%	14.8%	7.0%	5.61%	100%
	(240)	(132)	(133)	(103)	(48)	(39)	(695)

3.10.2 Lotto Participation Frequency across Age Groups.

Table 14 shows that of the sample, $N = 307$ played a lotto 1- 10 days out of the last 30. Older adults were less likely to play a lotto between 11 – 30 days ($N = 9$).

3.10.3 Slots Participation Frequency across Age Groups.

Older adult women were more likely to play slot machines daily ($N = 10$) compared to $N = 1$ of men. Playing slot machines once or twice a week was popular across all ages ($N = 28$) as demonstrated in Table 14 Women aged 65-84 years ($N = 17$) were more likely to play slot machines three, four or six times a week.

3.10.4 Sports Betting Participation Frequency across Age Groups

Older adult men aged 65-89 years showed a consistent gambling pattern, with 0.58% betting once or twice a week. Males aged 65-69 years ($N = 4$) and 80-84 ($N = 2$) were more likely to bet on sports every day. A small portion of females did participate in sports betting, and were more likely to gamble once a month and was popular amongst age groups 65-84 ($N = 10$).

3.11 Correlation of Physical Health and Gambling Activity Type:

3.11.1 Participation across Gambling Activity Type for Older Adults experiencing Frailty and Physical Pain:

Descriptive statistics and Pearson correlations examined the associations between physical health and type of gambling activity. As pain ($r = .160, p = .001$) and frailty levels increased ($r = .094, p = .013$); bingo participation levels over the preceding 30 days also statistically significantly increased. As levels of pain ($r = .081, p = .032$) and frailty ($r = .085, p = .028$) increased sports betting participation levels also increased. Slot machine participation levels were not significantly correlated with frailty levels ($r = .020, p = .601$) or indeed pain levels ($r = .034, p = .382$). In addition, lotto participation levels were not significantly correlated with levels of frailty ($r = .030, p = .424$) or pain ($r = .062, p = .105$). For a detailed summary please see Table 15.

3.11.2 Correlation between Problem Gambling Status and Frailty and Physical Pain:

Problem gambling was not significantly correlated with level of physical frailty ($r = .075, p = .053$). However, the relationship between problem gambling and level of pain was significantly correlated with $r = .105, p = .008$.

3.12 Correlation between Psychological Factors and Gambling Activity Type:

Pearson correlations were conducted to explore the statistical relationships between gambling behaviour, including type of gambling activity, participation level and psychological health variables (anxiety, depression and loneliness; See Table 15). As anxiety levels increased so did participation levels on all types of gambling activities including bingo with $r = .160, p = .001$, including playing slot machines ($r = .129, p = .001$), sports betting ($r = .164, p = .001$) and playing a lotto ($r = .129, p = .002$). As depression levels increased so did slot machine gambling participation ($r = .176, p = .001$), bingo gambling participation ($r = .221, p = .001$), lottery gambling participation, ($r = .100, p = .008$) and sports betting participation levels ($r = .233, p = .001$).

Social loneliness was significantly correlated with slot machine gambling participation levels with $r = .198, p = .001$, bingo gambling participation levels ($r = .163, p = .001$) and sports betting participation levels ($r = .105, p = .006$). In addition, emotional loneliness was significantly correlated with slot machine gambling participation levels ($r = .196, p = .001$), bingo gambling participation levels ($r = .216, p = .001$) and finally sports betting participation levels ($r = .159, p = .001$). Lotto participation levels were not significantly correlated with social loneliness with ($r = .057, p = .137$) or emotional loneliness ($r = .033, p = .378$). See Table 15 for a detailed summary.

3.12.2 Association between Problem Gambling Status and Psychological Factors

Pearson correlations revealed that as problem gambling behaviour increased anxiety levels increased ($r = .324, p = .001$), and depression levels also increased ($r = .285, p = .001$).

Moreover, there was a statistically significant positive correlation between problem gambling behaviour and emotional loneliness with $r = .278, p = .001$ and social loneliness ($r = .271, p = .001$). See Table 15 for a detailed summary.

Table 15. Zero Order Correlation Matrix for Physical and Psychological Health and Problem Gambling across Gambling Activity type

Measures	Mean (<i>SD</i>)	1	2	3	4	5	6	7	8	9	10	
1. PGSI	.7698 (2.968)	-										
2. Pain	13.7244 (14.020)	.105*	-									
3. Frailty	3.1396 (1.615)	.075	.602**	-								
4. Anxiety	4.9834 (6.609)	.324**	.271**	.216**	-							
5. Depression	2.9130 (2.974)	.285**	.364**	.387**	.517**	-						
6. S Lone	.8773 (1.192)	.271**	.038	.095*	.258**	.382**	-					
7. E Lone	.8993 (1.049)	.278**	.296**	.388**	.422**	.521**	.501**	-				
8. Bingo PL	27.6806 (43.326)	.445**	.160**	.094*	.160**	.221**	.163**	.216**	-			
9. Slots PL	4.9381 (19.695)	.567**	.034	.020	.129**	.176**	.198**	.196**	.510**	-		
10. Race PL	1.3007 (12.398)	.238**	.085*	.081*	.164**	.233**	.105**	.159**	.020	.072	-	
11.Lotto PL	2.3482 (3.499)	.179**	.062	.030	.120**	.100**	.057	.033	.202**	.228**	.103**	-

Note. PL = Participation Level, PGSI= Problem Gambling Severity Index. S Lone = Social Loneliness, E Lone = emotional loneliness. * $p < .05$, ** $p < .001$.

3.13 Development of a Prediction Model; Risk for Older Adult Problem Gambling

Table 16. *Regression analyses for Problem Gambling in British Older Adults*

Predictor	Type of gambling activity, level of participation and psychological wellbeing		
	<i>B</i>	SE <i>B</i>	β
S Loneliness	.273	.092	.108*
Anxiety	.085	.016	.188**
Bingo PL	.014	.002	.199**
Slots PL	.014	.005	.418**
Racing PL	.033	.009	.120**
R^2			.450
<i>n</i>			612

Note. * $p < .05$, ** $p < .001$, PL=Participation Level, S= Social.

Multiple regression analysis was conducted to investigate risk for problem gambling behaviour, type of gambling activity, participation level and psychological health. Using the enter method the model was significant ($R^2 = .441$, $p < .001$), $F(10, 612) = 49.240$, $p < .001$). Based upon the theoretical propositions in study one the model supported the hypothesis that significant predictors of risk for British older adult problem gambling include type of gambling activity, psychological health factors and level of participation. The strongest predictor was Slot participation level ($\beta = -.418$, $p < .001$) followed by Bingo participation level ($\beta = .199$, $p < .001$), Anxiety ($\beta = .188$, $p < .001$), Racing participation level ($\beta = -.120$, $p < .001$) and Social loneliness ($\beta = .108$, $p < .05$). Physical health variables, frailty and pain were not significant predictive risk factors for problem gambling behaviour. See table 16 for a detailed summary.

3.14 Discussion:

3.14.1 Main Findings

The primary research objective of this study was to build knowledge and understanding of British older adult gambling and problem gambling behaviour. This was achieved by evaluating the psychological and physiological variables as predictive risk factors for problem gambling amongst British older adults. Through regression analysis the model identified five factors that had predictive value for problem gambling behaviour in British older adults. The strongest predictor was level of slot machine gambling, followed by level of bingo participation, level of anxiety experienced, and racing participation and social loneliness. Fundamentally, the proposed model indicates that specific types of gambling activities, principally playing slot machines, is a relatively strong risk factor for problem gambling in British older adults.

This model is proposed as a progressive step towards developing British older adult gambling research, and specifically informing research aimed at improving screening and prevention for problem gambling in this subgroup. If older adults are informed of these risks, it will increase awareness and draw attention to the prevention of older adult problem gambling. Tentatively the model has implications for responsible gambling education for this population by focusing on types of gambling activity most associated with risk (slot machines) and the maladaptive use of gambling behavioural as a coping strategy for anxiety and loneliness.

This has provided a deeper understanding of physical and psychological factors that may affect the development of problem gambling in British older adults. The analysis provides important information that can help to identify at risk older adult problem gamblers in the

early stages. After further validation and confirmation of these risk factors, it may be possible for older adult public health workers to use these predictive variables as an indication that screening for problem gambling or at least discussing gambling and the associated risks to individuals in their care, may be appropriate. Eventually a responsible gambling strategy may emerge targeting the specific physiological and psychological vulnerabilities for British older adult populations, based on these findings.

Although research is available regarding older adult gambling in Western populations (McNeilly & Burke, 2002; Milosevic & Ledgerwood, 2010), there are multiple cultural and statutory factors specific to certain geographical locations (Abarbanel, 2014; Orford, Griffiths, Wardle, Sproston & Erens, 2009). It is essential to identify gamblers at higher risk of developing gambling-related problems as early as possible (Petry, 2005) and within their cultural context. Specifically, as, to date, unique problem gambling vulnerabilities in older adult populations may not be identified (Nower & Blaszczynski, 2008), therefore a first step is to identify subgroup specific risk factors. However, this is challenging given that older adult gambling research is relatively scarce with respect to the cultural and regulatory context of the UK. With different types of gambling opportunities in the UK, it is relevant to consider the different motivational dimensions of this demographics gambling behaviour.

3.14.2 Comparison with existing literature

The proposed model is supportive of existing theory regarding gambling and problem gambling. For example, it has been previously observed that older adults are likely to report a preference for nonstrategic forms of gambling such as EGMs (Grant, Kim, Odlaug, Buchanan, & Potenza, 2009). Furthermore, the model has also demonstrated that

coping and enhancement motives associated with psychological drives such as to increase low mood, are risk factors for older adult problem gambling (Lee, Chae, Lee & Kim, 2007; McGrath, Stewart, Klein & Barrett 2010; Stewart & Zack 2008; Stewart, Zack, Collins, & Klein, 2008).

The data from this study was comparative with existing literature stating problem gambling is often comorbid with mental health problems such as depression and/or anxiety, as well as with physical disability issues such as reduced mobility (Desai et al., 2004; Lichtenberg & Anderson, 2009). Comorbidity negatively impacts upon gambling treatment therefore harm reduction strategies may be applied to treat underlying psychological or physiological disorders to reduce the risk of developing problem gambling (Lichtenberg & Anderson, 2009). Although, this is problematic as the older age group are unlikely to seek treatment for emotional or gambling problems independently (Stewart & Oslin, 2001). Gambling prevention, early intervention and treatment efforts should be targeted towards this population as older adult problem and pathological gamblers are vulnerable to experience increased physical and emotional problems (Erickson et al., 2005).

Potentially it is the difficult life transitions that may identify older adults as a unique vulnerable subgroup at risk for problem gambling. Furthermore, the association between problem gambling and multiple psychiatric disorders among older adults suggests that gambling problems are likely to exacerbate the impact of mood disorders such as anxiety. Therefore, treatment, prevention and screening for problem gambling have to adjust for these factors and it is important that tailored services to prevent and treat older adult problem gambling be incorporated within UK health systems.

It has been observed that UK older adults accessing mental health care are of least concern when compared to other age groups (Mental Health Foundation, 2009). This suggests that services discriminate on age related grounds creating a division between services for younger adults and those over the age of 65 years. It is probable that improving UK screening for problem gambling and psychiatric comorbidity in those aged 65 years and older will increase treatment numbers placing a demand on services. If screening, treatment and prevention strategies are to be successful in treating and reducing older adults at risk for problem gambling UK mental health services will require significant resources to meet the envisaged demand. Existing difficulties to accessing treatment include incorrect notions that mental health problems are an inevitable part of ageing and older adults will not respond to similar types of intervention as are needed in younger age groups, or that mental health interventions should primarily be focused on the working population (for economic reasons) placing restraints on older adult rights to equitable care (Mental Health Foundation, 2009).

A further likely obstacle to identifying problem gambling behaviour among older adults is their unwillingness to seek treatment, while many prefer to self-manage. Martin et al., (2011) observed a stigma in older adults that is attached to any type of addictive behaviour, specifically behaviours viewed as a moral vice or a failure of willpower. Specific aims or outcomes of further research may be directed at how to access and to engage older adults in problem gambling awareness and treatment-seeking action (Gonclaves et al., 2014).

The British Gambling Prevalence Survey (Wardle et al., 2011) has provided data on prevalence rates of British older adult gamblers but it is combined with general adult populations aged 16 and over. It is acknowledged that gambling behaviour between adults

aged 16 years and above and older adults over 65 years old can differ substantially because of age-related factors including retirement and health decline (Southwell et al., 2008). This study has therefore built on existing data; the BGPS 2010 demonstrated that the prevalence of older adult gambling had risen, suggesting that gambling is an increasingly popular social activity for British older adults. However, the survey did not identify any older adult over the age of 75 years to have a gambling disorder (Wardle et al., 2011). There has been a recognised increase in gambling behaviour of those over the age of 75 years (Wardle et al., 2011). More specifically, past year gambling estimates amongst those aged 75 years and over increased from 52% in 1999, to 57% in 2007 to 63% in 2010 (Wardle et al., 2011). Ultimately, the descriptive data from this study has enabled a closer look at the gambling behaviour of British older adults, even at the higher age brackets. The descriptive data from this study provides an original and important contribution to knowledge because of the limited availability of existing British older adult gambling research.

3.14.3. Results

Gender related differences were observed in patterns of gambling, with descriptive data suggesting older adult females participated in casino style games significantly more than and played bingo over a significantly longer session time than their male counterparts. The pattern of female older adult gambling behaviour showed sex differences in risk for problem gambling, for example, females playing slot machines more days out of the last 30 compared to males. A further qualitative explorative study on why female older adult British gamblers are increasing, and also what can be done to reduce the number of problem gamblers arising from this demographic is required.

Across the literature it has been observed that depression, anxiety and multiple psychiatric clinical disorders combined with poor physiological health and age-related factors such as retirement, bereavement, and loneliness are associated with gambling disorders (McNeilly & Burke, 2000; Petry, 2002; Subramaniam et al., 2015). Existing studies have reported a multitude of different predictors of problem gambling behaviour include being a binge drinker, presence of symptoms of post-traumatic stress disorder, being of an ethnic minority, low income, poor self-rated health, poor quality of social support network, retirement and unemployment, single or widow status, low levels of optimism and being a man of younger age (Clark & Clarkson 2009; Lai, 2006; Leven et al., 2005, Pietrzak et al., 2007; Southwell et al., 2008; Zaranek & Chapleski, 2005; Zaranek & Lichtenberg, 2008). These existing studies reveal disparate findings and identifying different risk factors for harm. Based on existing literature there is no solid conclusion on establishing the unique risk factors for problem gambling in British older adults. The current study has raised awareness on specific age-related vulnerabilities by observing the psychological and physiological health of British older adults and evaluating how these factors are related to problem gambling.

3.15 Limitations

The model currently serves as a practical and informative guide identifying predictive risk for problem gambling in British older adults. Existing older adult gambling studies (Petry, 2002, 2008) have attempted to identify the risks for problem gambling, although they have shown no consensus (Clark & Clarkson 2009; Lai, 2006; Leven et al., 2005; Pietrzak et al., 2007; Southwell et al., 2008; Zaranek & Chapleski, 2005; Zaranek & Lichtenberg, 2008). This may be a result of the variation in age classification in existing gambling research, and the evident lack of representativeness of the samples.

The model shows all variables associated with risk for older adult problem gambling however it is acknowledged that other physical and psychosocial variables may be risk factors. This study has specifically focused on the negative health and psychological outcomes that have shown to have high associations with gambling-related harm and have been reported in international samples in older adults aged 65 years and above (Bazargan, 2001; Erickson et al.; 2005; Pietrzak et al., 2005) and observed in the grounded theory produced in Study one.

Moreover, although problem gambling is associated with clinical disorders and psychiatric correlates the directionality of these associations is still not determined (Pilver et al., 2013). The model identified that anxiety was a risk factor for problem gambling behaviour. However the model does not determine whether anxiety is a pre-morbid risk factor or a consequence of the disorder. Whether affective disorders are premorbid has mixed support. However loneliness may be considered pre-morbid as current literature consistently demonstrated escaping loneliness and to pass the time are predominant reasons for gambling amongst older adult problem gamblers (Boreham et al., 2006; McVey, 2003; Wiebe & Cox, 2005).

In addition, the study observed a relatively small portion of individuals with gambling-related problems. The population of British older adult problematic and pathological gamblers is likely to be more heterogeneous. It is acknowledged that the sample was not representative, however attempts were made to include wide variation through stratified sampling of gamblers and non-gamblers from diverse geographical settings, and commercial and non-commercial venues. Steps were taken to ensure data was observed

from three domains, including cities, towns and villages to include a variety of socioecological living environments.

Research shows that problem gamblers often refuse to participate in population screening surveys and would say they would conceal their problems (Productivity Commission, 2010). Therefore, it is probable that several participants were motivated to provide socially desirable answers rather than conceal the true extent of their gambling behaviour and associated harms.

3.16 Recommendations

Currently British older adult gambling behaviour has been identified in prevalence surveys in which gambling behaviour is not limited to this specific age cohort (Wardle et al., 2011). This study has identified that older adult gamblers may have different behavioural patterns and age-related vulnerabilities associated with problem gambling when compared to other adult gambling age groups. Because of the age-related differences in motivations to gamble and vulnerabilities, such as retirement, it is not appropriate to continue to amalgamate older adult gamblers within general adult populations.

This study has attended to the specific methodological limitations suggested in current literature (Hooyman & Kiyak, 2011) such as target sampling, particularly focusing on older adult wellbeing. The study has taken into account the ageing process in the 21st century (Hooyman & Kiyak, 2011) and identified that the British gambling culture is changing and older adult women are as likely to gamble as much as men, and that over

time, older adults will be likely to engage in more technological forms of gambling including smartphones and the internet (Derevensky & Gainsbury, 2015).

The model will benefit early intervention as it identifies those at risk for problem gambling before it develops as well as those likely to be in need of treatment (Tse et al., 2012). In order to maximise the effectiveness of this approach, there is a pressing need to conduct more theory driven, qualitative studies to examine the complex dynamics of older adult gamblers (Tse et al., 2012).

Collaborating within industry was valuable to enable a varied sample of older adult commercial gamblers, engage with problem gamblers and locate gamblers from diverse different socioeconomic areas, including large inner cities and towns. It is suggested this relationship could be developed further across different UK commercial operators to wider the collection of commercial gambling industry data.

3.17 Conclusions

This study has identified different behaviours amongst specific types of gamblers, including recreational, problem and non-gambling British older adults. Further studies would benefit from additional commercial support to help in obtaining more accurate estimates of British prevalence rates for older adult problem gamblers, and in recruiting a larger sample of UK older adult gamblers that participate in other gambling activities (e.g. fixed odds betting terminals). It is proposed that the findings produced in the current study advances the knowledge and understanding regarding British older adult gambling and problem gambling. Essentially, regularly participating in slot machine gambling is a

substantial risk factor for problem gambling in British older adults, followed by experiencing anxiety and loneliness, and by frequently engaging in bingo gambling and sports betting.

Chapter 4

An Interpretive Phenomenological Analysis of Gambling Behaviour in British Older Adult Women

4.1 Introduction

Women are emerging as a growing subgroup of frequent gamblers (Broughton & Falenchuk, 2007; Delfabbro, 2012; Gordon & Russell, 2014; Hing & Breen, 2001; Holdsworth, Nuske & Hing, 2015; Welte, Barnes, Wieczorek, Tidwell & Hoffman, 2007). Research in problem gambling has recently started to address older women and problem gambling including motivation, risk factors and treatment considerations (McKay, 2005). The feminisation of gambling indicates it is probable that more women are participating in gambling and developing problems (Volberg, 2003). Boughton and Falenchuk (2007) stated that gambling is fast becoming a mainstream activity for women. Gambling amongst women is of concern, given their preference for Electronic Gaming Machine (EGM) gambling and the established link between EGM gambling and gambling problems (Hing & Breen, 2001; Productivity Commission, 2010).

It is emerging that problem gambling is not simply a male-dominated disorder as currently reflected in the literature (Volberg, 2003), as problem gambling literature in the 1990s built a profile of the male gambler to be the norm (Mark & Lesieur 1992; Volberg, 2003). Furthermore, Westphal and Johnson (2003) stated that because of the historical predominance of males with gambling problems, the effect of gender on comorbidity has been insufficiently studied. However, research into gambling and gambling problems

amongst women has not kept pace with the changing feminisation of gambling (Holdsworth, Hing & Breen, 2012).

McKay (2005) stated, based upon the types of factors that influence older adult women's quality of life including health, income, housing, family social support and culture. That late-onset problem gambling is associated with 'escape' gambling and that the majority of escape gamblers are women. Fundamentally, 'escape' gambling in women is associated with psychological comorbidity concerns, particularly depression and anxiety disorders (Pierce, Wentzel & Loughnan, 1997). Women are more likely to commence gambling when older in years, and when children leave home and caring roles decrease (Grant & Kim, 2002; McMillen, Marshall, Murphy, Lorenzen, & Waugh, 2004). Older women often report playing bingo socially without problems throughout their lives, yet as a consequence of ageing, it is proposed older women are likely to gamble more frequently due to retirement, physical health limitations, a break from care-giving responsibilities, and a lack of safe and accessible alternative recreational activities (McKay, 2005).

According to Rich (1988) females who develop problem gambling are likely to have experienced traumatic or difficult life challenges in the past including loss of a parent at an early age, alcoholism and/or emotional neglect from one or both parents. Older female problem gamblers are more likely to describe their childhoods as traumatic and associated with parental alcohol abuse, gambling problems and mental illness (Lesieur & Blume, 1991). Women with gambling problems often have a family or personal history of trauma and abuse including physical or sexual abuse in childhood and these are precipitating factors in the development of problem gambling (Jacobs, 1988; Specker, Carlson, Edmonson, Johnson & Marcotte, 1996).

Male and female pathological gamblers in outpatient treatment completed the Childhood Trauma Questionnaire (Bernstein & Fink, 1998) and there was clear evidence of associated moderate to severe abuse overall, compared with general populations and a sample of substance abusers. Women pathological gamblers have also reported more severe physical neglect, emotional abuse, and sexual abuse compared to men (Petry & Steinberg, 2005).

Research Approach

Qualitative research adopts methods that effectively uncover the meanings of people's experiences of their social world, such as in-depth interviews and other narrative techniques to develop new knowledge (Neuman, 2006). The objective of employing Interpretative Phenomenological Analysis (IPA) is to access subjective experiences of the individual, independent of reality, focusing on making sense of participant's motivations and behaviour (Eatough & Smith, 2006). Holdsworth et al. (2015) stated that in taking a feminist approach, incorporating qualitative methodology such as in-depth interviews enable participants to articulate their personal experiences, concerns and understandings and is conducive to highlighting gender differences, including a woman's shorter progression to problem gambling.

Women are likely to take up gambling when significant life events leave them isolated or traumatised (Holdsworth, Nuske & Breen, 2011; Nixon, Evans, Kalischuk, Solowoniuk, McCallum & Hagen, 2013). The aim of IPA is to explore how participants make sense of their private and social world (Smith, 2003). The central meaning of IPA is concerned with understanding what it is like from the view point of participants the meanings of particular

lived experiences and events (Smith, 2003). Employing IPA will capture a detailed account of the risk factors underpinning problem gambling in British older adult women.

Furthermore, creating greater understandings of the range of complex issues involved for women who gamble problematically also assisting in the identification of moving from recreational to problem gambling.

Tse, Hong, Wang and Cunningham-Williams (2012) stated that there is a need to conduct more theory-driven qualitative studies to examine complex dynamics amongst older adults, specific games individuals play, gambling settings, and the trajectory of changes over time. This has been observed in older adult gambling studies identifying a need to examine older adult problem gambling in a qualitative context (Munro, Cox-Bishop, McVey, Reay, Powell & Sutton, 2003).

Findings from Study Two identified quantitative variables that were predictive of risk for problem gambling across British older adults. Due to few qualitative studies exploring older female gambling and risk factors for problem gambling it makes sense to investigate the gambling experiences employing Interpretative Phenomenological Analysis (IPA; Smith & Osborn, 2003). To gain a deeper understanding about the gambling behaviours of British older adult women. A pertinent concept to explore in older adult female gambling is understanding progression to problem gambling, and specific factors that contribute transition from recreational to problem gambling.

From a gender perspective there are few qualitative studies exploring problem gambling in older adult and female populations (Holdsworth, Nuske & Breen, 2013; Holdsworth et al., 2015; McKay, 2005; Ohtsuka & Chan, 2014; Piquette-Tomei, Norman, Corbin-Dwyer &

McCaslin, 2008). An earlier study stated that most empirical studies in problem gambling are quantitative in nature (Wildman, 1998), and therefore there is an urgent need to understand the phenomenon of disordered gambling in older adults using well designed qualitative and quantitative studies specifically within different cultures and countries (Subramaniam, et al., 2015).

This study aims to gain the perspective of the British older adult female gambling culture and problem gambling from a non-treatment sample. Gambling preferences are culturally based and influenced by the availability and social acceptance of different types of gambling across both genders (Hing & Breen, 2001). Griffiths (2003) stated that because of the multifaceted nature of gambling, multiple levels of explanation of gambling behaviour are necessary including distal factors, such as physical availability of gambling opportunities and social norms with respect to gambling; in addition to proximal factors, such as individual gambling beliefs and values, tendency toward problem behaviours, and socio-demographic factors. Reinhartz (1992) commented that it is appropriate to undertake research that is culturally sensitive by employing an appropriate methodology such as in-depth interviews; enabling women's stories to be told and voices heard.

Few studies have investigated gender differences (Delfabbro 2009; Piquette-Tomei et al. 2008; Toneatto, Bougton & Boris, 2002); particularly research concerning comorbidity amongst women with gambling problems (Desai & Potenza 2008). Holdsworth, Nuske and Breen (2013) have attempted to close this research gap. Given the lack of qualitative literature exploring British older adult female gambling behaviour this study will aim to further close this knowledge gap, and will explore the underlying development of risk for problem gambling emphasising development, maintenance, motivation, co-morbidity;

specifically co-occurring complex needs including social isolation, loneliness, bereavement, caregiving responsibilities, poor health, loss of family connections, retirement and lack of alternative leisure activities (McNeilly & Burke, 2001).

Furthermore, exploring that older adult female gambling behaviour may be a poor coping mechanism for managing emotional problems including anxiety or/and negative feelings which in turn may exacerbate problem gambling leading to other psychiatric disorders (Chou & Afifi, 2011).

Hing et al. (2014) highlighted that gender-specific research into pathways and progression to problem gambling is underdeveloped, although a handful of studies are available.

Kimberley (2005) identified a continuum of commonly shared stages in the development of gambling problems. Eight specific stages were identified in which women problem gamblers aged 45 years and over progress: the social, solo, habitual, secretive, enchanted, turbulent, cognisant and alleviated stages.

A qualitative design will assist in the identification of the temporal sequencing of gambling behaviour, progression and co-morbid problems. For example, participants will have the ability to talk about their depression and anxiety and reveal if they perceive it was present pre - initiation of gambling or post. Determining the temporal sequencing of disorders is relevant in identifying needs for effective treatment (Hing et al., 2014). With reference to treatment and women specifically it is asserted that further gender specific, female focused gambling research will benefit female prevention, treatment and harm minimisation. Without this critical data there is a lack of sensitivity to the unique issues that may be significant to the female population (Toneatto et al., 2002).

Prior studies have acknowledged problem gambling is associated with a broad range of negative health correlates among women and was related with gender-specific risk factors including co-morbidity and co-occurring complex needs (Afifi, Cox, Martens, Sareen & Enns, 2010; Leisuer & Blume, 1991; Hodgins, Schopflocher, el-Guebaly, Casey, Smith, Williams & Wood, 2010; Holdsworth et al., 2013; Jacobs 1988; Petry & Steinberg, 2005; Rich, 1988; Specker et al., 1996). Furthermore, women are more likely to gamble regularly if single, separated, divorced or widowed compared to those married (Sproston, Hing & Palankay, 2012).

Social factors likely to increase the risk of problem gambling are commercial marketing strategies and EGM design which target older women as gambling consumers at the casino (Ravlin, 2004; Holdsworth, Nuske & Breen, 2011). Risk factors associated with age and gender including the feminisation of gambling marketing strategies (advertising aimed at women) and electronic gaming factors (electronic bingo, coin slots, environmental facilitation) expose older women to risk for developing gambling problems (Rivlin, 2004).

EGMs have a tendency to be designed for women over the age of 55 years (Rivlin, 2004). Schull (2002) associated the development of female problem gambling on EGMs with societal gender-role and care giving expectations. McKay (2005) found that 80% of the people providing care in the home or in institutions are likely to be women. Furthermore, Grant (2002) stated that women are more likely than men to experience an elevated need for escapism from care-giving responsibilities for spouses, parents, adult children and grandchildren.

Manzer (2001) highlighted that men and women gamble for different reasons and that women with gambling problems benefit from different treatment approaches. Boughton and Brewster (2002) showed female gamblers preferred women-only groups where they felt comfortable to talk about issues of intimacy and sexuality, body image, their experience of violence, and care-giving demands. Toneatto et al., (2002, p. 3) stated that data concerning gender differences in gambling will benefit treatment and prevention efforts for women and without this critical data there is lack of '*sensitivity to unique clinical issues that may be significant to this population*'. Fundamentally, traditional addiction treatment programs may not suit the needs of older adults, particularly older women (Wiebe, 2000). IPA will assist in uncovering gambling behaviours associated with specific gender and age differences relevant for older adult women gamblers and their implications for prevention and harm reduction strategies.

British women, and widowed older adult women in particular, are a fast growing segment of gamblers (Wardle et al, 2011). Retired women were more likely to gamble on more than four different types of gambling activity compared to women in full time education and those unemployed (National Centre for Social Research; NCSR, 2012). Patterns of gambling vary amongst different socio-demographic groups of women (Hing, Breen, Gordon & Russell, 2014). Hing and Breen (2001) found that women tend to gamble with lower individual bets and a lower outlay than men.

Abbott, Volberg and Rönnerberg (2004) stated that in Canada, the US, New Zealand and Australia, the gap in sex differences in gambling involvement are decreasing or are non-existent. UK women aged 65-74 were revealed as narrowing the gender gap, with 77%

reported gambling at least monthly in 2007 increasing to 80% in 2010 (Wardle et al., 2011).

The Health Survey for England (HSE, 2012) revealed that 0.2% of women aged 75 years and older was classified as being any type of ‘at-risk’ problem gambler. Women aged 75 years and over were more likely to participate in 7 or more gambling activities in the last year. Figures showed that no men aged 75 years and above participated in 7 or more gambling activities in the last year (HSE, 2012). It has been noted across international literature (Berns, 1998) that problem gambling is a “very, very hidden issue” across older adult populations. Increased participation yet low prevalence rates of older adult female problem gambling recorded could provide scope to suggest that female older adult problem gambling is also a *hidden* issue in Britain, and likewise may be a result of poor psychometric properties of measurement tools for this population (Wiebe, 2000).

Aim

This study aims to gain the perspective of British older adult women who are frequent gamblers and understand their motivations and experiences of gambling behaviour, including gambling-related harm. This study will also aim to identify factors that account for frequent gambling with in this population and explore them in their cultural and behavioural context.

4.2 Method

4.2.1 Sample and Design

($N = 10$) British older adult female gamblers took part in the current study, with the mean age of 70.4 years with an age range of 60–80 years. All information relating to the identities of the participants were changed to protect anonymity. Following data collection

participants were given a number. This process also reassured participants of the anonymity of their confidential data. All data and information taken from participants that did not participate further was destroyed.

Participants were recruited via stratified purposive sampling. The specified inclusion criteria were to obtain a sample of British older adult female regular recreational gamblers and low risk/moderate risk problem gamblers that play bingo and EGMs. The researcher engaged in participant observation to identify individuals likely to meet the inclusion criteria, and they were assessed via participants self-report. Participants were screened using the Problem Gambling Severity Index; PGSI (Ferris & Wynne, 2001) and were recruited from a bingo club in the East Midlands; UK.

Table 17 *Summary of participant information*

Mary	65, widowed, cares full time for son who has Huntington's Disease.
Maria	78, retired, moved to coast, is lonely and plays bingo to fill time
Jackie	63, widowed, retired to care for her late husband that had Dementia.
Dora	80, lives with her son, in remission from cancer.
Doris	60, lives with her husband, self-reported Obsessive Compulsive Disorder, recovering alcoholic, in sobriety for previous 25 years.
Josie	63, divorced, lives alone, experienced past abusive relationships.
Harriet	78, recently widowed, has physical mobility problems due to arthritis
Sandy	69, widowed, plays bingo for company as her family are always busy.
Vera	76, gambles with her husband.
Doreen	72, married, enjoys gambling with her husband on holiday.

4.2.2 Interview Procedure

All participants completed an ethical consent form and were briefed and debriefed.

Interviews were recorded and lasted approximately 60 – 120 minutes with breaks.

Participants were informed of the types of question they would be asked and data were collected via semi structured interviews to accumulate rich data. The interview was outlined into specific areas of interest although the questions were designed to be open.

Talking over gambling experiences may have evoked emotive topics therefore the questions in the interview were approached delicately. Smith (2008) stated that the aim of IPA is to explore in detail how participants are making sense of their personal and social world. Murray and Homes (2014) stated this procedure involves a detailed examination of the participants' lived experience and the goal is to have the participant recall his/her bodily orientations and the sensations that were immediately experienced. The researcher interviewed most participants at their home although one lady asked to meet in a café.

The interview questions were organic, this means the researcher selected further lines of questioning based on participant responses to earlier questions. This method of interviewing was beneficial to collecting personal data, as the interviewer was able explore and further investigate each answer. Data collection focused on allowing participants to discuss their interpretations of gambling experiences and understandings of their behaviour. Following the interview, participants were asked if they wanted to add more information. Each participant positively stated that their interviews adequately explained their gambling behaviour and reflected true accounts of thoughts and feelings.

4.2.3 Data Analysis

Qualitative approaches provide the researcher with an opportunity to develop an idiographic understanding of participants, and what it means to them within their social reality to live with a particular condition or be in a particular situation (Bryman, 1988). It facilitates an understanding of the complexity of biopsychosocial phenomena and, as such, affords possibilities for informing clinical practice (Boyle, 1991).

Interpretive Phenomenological Analysis (IPA) was specifically developed to allow a rigorous exploration of idiographic subjective experiences and social cognitions (Smith, Harré, & Van Langenhove, 1995). IPA's theoretical underpinnings stem from the phenomenology that originated with Husserl's attempts to construct a philosophical science of consciousness, with hermeneutics (the theory of interpretation) and with symbolic interactionism, which posits that the meanings an individual ascribes to events are of central concern but are only accessible through an interpretative process (Smith et al., 1995).

IPA explores how people ascribe meaning to their experiences in their interactions with the environment (Smith, Jarman, & Osborn, 1999). How people perceive and talk about their gambling experiences is likely to vary, one to another, and may well differ from research professionals' perceptions. IPA analysts do not claim they can access the 'lived experience' of the participant directly, but instead acknowledge that the analyst must draw from their own existence and experience for successful interpretation (Willig, 2001).

IPA relates to the ontological idea that knowledge always comes from an '*evolved perspective or point of view*' (Raskin, 2008; p. 13). Realists argue that the natural, and social, world does exist independently from human action and observation (Blaikie, 2007).

Furthermore, this reality can be objectively measured, methodologically limiting personal biases (Ramey & Grubb, 2009). Put simply, subjective reality is our 'take' or interpretation; the set of understandings and knowledge that we work out or decide. The researcher employed a double hermeneutic technique, in which the participant interpreted the significance of their own experience and the researcher, in turn, made interpretations about what was represented in the interview. Therefore, throughout the interpretative process the researcher maintained reflexivity and considered the potential of individual bias in making interpretations.

All transcripts were read and re-read as each reading has potential to produce new insights (Smith, 2008). Each transcript was analysed in an idiographic nature before commonalities across all the transcripts were retained to gain the experiences and understandings of older adult women gamblers. The researcher transformed the initial notes into concise phrases aiming to capture the quality of information in the text.

4.4.4 Connecting themes

This stage involved a more analytical ordering as the researcher made sense of the connections between themes which emerged. Some themes clustered together whilst others emerged as super-ordinate concepts (Smith, 2008). The researcher produced a table of themes listing the subthemes in line with each super-ordinate theme. An identifier was added to each theme to aid the organisation of the analysis and facilitate finding the original source of text. The thematic structure of each transcript had now merged into a more coherent model that maintained the phenomena being studied. The final model of the super-ordinate and their sub-ordinate themes were independently checked by the Director

of Studies for account of fit. The final stage of analysis was concerned with the structure of themes being presented in a narrative account supported by verbatim extracts which are important to retain the accounts of the gambling experiences of the older adult female gambler.

4.2.5 Ethical Considerations

On approaching the gambling venue, a gatekeeper of the venue informed members that a researcher from the University of Lincoln would be visiting. Participants were approached in groups and the researcher briefly explained who they were and the aims of the study and handed out a card with the researchers' contact details. After the researcher provided contact details they retracted from the group to remove any feelings of obligation or pressure to participate. This created a situation in which the potential participant could independently call the researcher at a later stage to consider participating. It was explained to the group that the study involved responding to questions about their past gambling experiences and behaviour including their physical and psychological health.

4.3 Results

Three super-ordinate themes emerged from the analysis that enhanced understandings of experiences of British older adult women gamblers at risk for problem gambling within the context of gender and age.

Superordinate theme 1, labelled '*Filling voids*', outlines how the participants develop motivation and maintain their gambling behaviour. Secondly, superordinate theme 2

'Emotional effective escape', outlines the impact of gambling on participants' psychological state, with each participant identifying gambling as an effective coping mechanism. Finally, superordinate theme 3, labelled *'Spending too much'*, suggests how the absence of responsible gambling awareness, and environmental facilitation of gambling, increase the participants' willingness to exceed pre-determined research budgets.

Each of the 3 super-ordinate themes to emerge in the analysis is constructed of component subordinate themes. The thematic structure of the phenomena is presented in Table 18.

Table 18. *Listings of superordinate and superordinate sub themes.*

Superordinate theme	Component subordinate themes.
1.Filling Voids	<p>I am stuck in these four walls</p> <p>A place a woman can go alone</p> <p>A reason to get dressed up</p> <p>It is not about the game</p>
2.Effective Emotional Escape	<p>Disengaging from discomfort</p> <p>Peer Understanding and Support</p> <p>Evoking Positive States</p>
3.Spending Too Much	<p>Environmental Facilitation of High Expenditure</p> <p>Lack of Responsible Gambling Awareness</p>

4.3.1 Super ordinate Theme 1: Filling voids

Filling voids was a prime characteristic of the older adult female gambling experience that fulfilled a need by alleviating loneliness through providing a means of socialising that was currently lacking. The concept of filling voids referred to participants having a reason to dress and avoid negative thoughts of staying in the house. From the transcripts it emerged clearly that gambling was a way to counteract the experienced loss of socialisation and the lack of reason to venture outside of the home.

4.3.1.1 *'Stopping in the four walls'*

Essentially, participants felt confined to the home as they felt they had little reason to go outside. Furthermore, it is perceived that increased levels of gambling exposure are related to maximising entertainment value when they ventured out of the house. They participated in and prioritised gambling activities that involved human interaction, and escaped negative experiences associated with perceived confinement. For example, Mary expressed how gambling helped her emotionally and temporarily escape the home.

Extract 1:

"Interviewer: How do you feel when you play bingo?"

Mary: Yeah it takes my mind off it you know and a bit like because I don't go out otherwise. I would be stopping in the four walls which I have been doing you know, even before I had cancer. With all the problems I got losing my mum, losing my step, my real dad, my husband and everything."

Gambling facilitated a strong need to relieve social isolation, and in particular the loneliness associated with bereavement. Mary proposed that gambling was her psychological escape, and that it prevented feelings of entrapment. Fundamentally, gambling is an excuse to leave the house as it is perceived to be an enjoyable leisure pursuit. Extract 2, Vera spoke about how she felt visiting the community centre to play bingo.

Extract 2:

“Interviewer: You felt down. Has it helped you going to the community hall bingo still?”

Vera: Yeah it does get you out doesn't it? You push yourself in the end and you think stop being so stupid you know you can spend so long indoors, but then you look and think, oh I will be climbing the walls in a minute you know.”

In Extract 3 Sandy expressed similar perceptions regarding her experience of being confined to the home because of illness and the escape that gambling provided.

Extract 3:

“Interviewer: Did that make you feel isolated (your illness)?”

Sandy: Oh yeah I was looking at the four walls all-day and night and you know I never went out at all Maisie [daughter] used to do all my shopping.

Interviewer: So it has been a godsend to have Maisie help you?

Sandy: Yeah when I have got to have my right one done [Shoulder] I will come down here [daughter's house] straight away so she can look after me.... So the bingo to me is a good outlet to meet people and have a natter with the same age group."

Retrospectively, participants perceived their behaviour as rational with the driving force of gambling behaviour proposed as an escape from loneliness and social isolation. Whilst initiated in gambling, the filling of the void is reinforced by the realisation that gambling is a good outlet to meet people of the same age. However, at this initial stage of the gambling experience participants did not gamble to win money; it was about achieving a different goal.

4.3.1.2 *'Bingo is a safe place a woman can go alone'*

For some participants, filling the void required an environment where they felt welcome and safe. The bingo environment was described as a safe place and somewhere women can go alone, frequently, and an environment where everybody is there for the same reason. Essentially, it is perceived as an age appropriate entertainment venue where older women feel comfortable.

Extract 4:

Harriet: If you go in a pub you feel a bit uncomfortable, a woman going in on her own, but no because there is men there as well, elderly men there as well you know. I think some of them they are grumpy old buggers. They don't want to talk; I think

well good it's your loss. But yes I feel comfortable; I don't feel as though I have to go with somebody."

Jackie stated that how she was brought up affected her perception of where was appropriate for a woman to be on her own, and this was key in her decision to participate regularly in gambling

Extract 5:

Jackie: Well the way I was brought up; I would never walk in to a pub on my own. I would meet somebody in a pub. It would take me a long time to go to the bar because the husband does that."

A safe environment, familiarity, high potential for socialising and a sense of belonging were prominent reasons for bingo gambling. The participants appeared to organise their time around gambling; and have discovered an activity that not only removes negative experiences but produces positive rewarding experiences, creating an inner confidence.

Extract 6:

"Harriet: Before, I was, I didn't have enough confidence to talk to people about certain things because I used to think oh my God they will laugh, and I won't know what how to express myself. That's the top and bottom of the things. With going there, it has given me confidence and it has given me the strength to ask anything I want to ask anybody...there are a lot of people that have the same thing as what happened to me [violent past marriages, bereavement, loneliness] but some camouflage it."

The majority of participants reported similar past life experience; frequently including violent marriages and mentally abusive relationships. With many participants experiencing significant personal losses, experiencing abusive relationships and struggling with giving up their careers and entering this new stage of adulthood. Participants frequently reported experiencing poor physical and/or psychological health, with limited support, and some participants were currently in remission from cancer. Participants appeared to value highly the ability to interact and develop relationships with peers who have experienced or are experiencing similar events.

4.3.1.3 A Reason to Get Dressed Up

The context of why older adult women are motivated to gamble was also interpreted as a reason to get 'dressed up'. In Extract 7, Maria expressed that gambling was a reason to wash and dress and if she did not go to bingo that day she would not bother doing so. Although it is perceived that washing and dressing carries a higher significance related to self-esteem, for many it was concerned with getting ready to face society as an older adult woman.

Extract 7:

“Maria: You have got to have a shower it gets you motivated instead of sloping around in this like I have been in this all day, ...to play bingo I noticed some do dress up, but maybe that is the only way they can be dressed up. I mean instead of just wearing another pair of trousers and a top I have my nails and eye brows done Thursday and my hair done on a Friday”.

Unique gambling motivations were perceived to be in line with patterns of regular gambling behaviour and it is understandable how pleasures of gambling are derived to fill

numerous voids. In order to continue filling voids gambling regularly enhances and continues positive feelings associated with having a role in society and building self-esteem. In an attempt to fill voids by adopting alternative mood altering behaviours such as gambling, participants are more likely to increase frequency of gambling for fulfilment during retirement years.

The rewards from the gambling experience including getting dressed, putting on make-up and giving themselves attention outweigh the negative outcomes associated with financial implications. These motivations change their perspectives toward their gambling behaviour creating a distinction between gambling for socialisation and gambling but *not real gambling*.

Extract 8:

“Vera: Yeah I have always liked bingo, but then we go out as well, I mean we go down, get ready, go shopping then we have a little dabble in the arcades so it’s we have always been partly gamblers, we don’t ‘gamble gamble’ if you know what I mean?”

It is perceived participants have developed an understanding of their motivation and personal circumstances that influence patterns of gambling behaviour. Interpreted further, this indicates participants receive rewards when gambling via facilitation of needs and entertainment value, therefore winning money may not be considered a primary motivator for this cohort. Gambling for socialisation is not perceived as an act of gambling across British older adult women gamblers therefore attitudes towards gambling behaviour may impact patterns of behaviour. Motivational factors for gambling such as socialisation may

conceal their reality that they are gamblers and it appeared to effect responsible decision making abilities such as accurately evaluating what they could afford to spend, and high frequency play. Furthermore, this illuminates the relative importance of older women's' situational motives for gambling and the effect on gambling behaviour.

4.3.2 Superordinate Theme 2: Effective Emotional Escape

It has emerged clearly from the transcripts that the participants often participated in gambling to *emotionally escape* from negative experiences related to loneliness, retirement, bereavement, family relocating, ill health and past child and adulthood trauma. Gambling provided temporary emotional respite from full time caring and domestic responsibility.

4.3.2.1 Disengaging from Reality

The participants appeared to make a conscious decision to gamble because they identified that they can disengage from reality. Certain gambling activities including bingo and EGMs allow for dissociation and escape, which temporarily alleviate psychological and physical discomfort (Ledgerwood & Petry, 2006).

Extract 9:

“Sandy: Yeah you do switch off. You just concentrate on the games themselves you know? It is just a nice thing of not sitting there on your own and thinking oh well and worrying about this that and the other you just go out and just enjoy yourself.”

The following extract illustrates this conscious choice, as in Extract 10, Mary explains that she gambles more frequently for ‘a break’.

Extract 10:

“Mary: Yeah when I got depressed and fed up though I will just go in and I was looking after my stepdad and you know just going in on the off-chance like then like you know.

Interviewer: What do you think draws you in is it the light the sound the music?

Mary: I don’t know; I don’t know it’s just a break.”

For Mary, the break she gets from gambling on EGMs is tied in intimately with her responsibilities of caring, the significant loss in her life and the need for a ‘break’.

Gambling disengages Mary from her reality of caring responsibilities. The term break has a strong meaning in that Mary is not gambling continuously; she is trying to manage her emotions by entering in and out of gambling when she requires her ‘break’. The consequences of this behaviour hint at an inability to control gambling behaviour to the extent that one would like, for example, ceasing gambling sessions after a relatively large win. Fundamentally, Mary’s respite is gambling.

Extract 11:

“Mary: If I have not been in for a bit it kind of lifts you up you feel a bit better like but it was same whilst Mark was away [son she cares for at home]. I went Mablethorpe for the morning and I had a go in the slots and that I won. About £20 I think it was and it was only on normal 10p games like. Normally I put a pound in or whatever. Anyway I won 20 quid, I thought, I aren’t putting any more in [but] you keep going and going then you realise it has all gone you think you stupid idiot you know.”

From the data it is apparent that Mary's gambling has escalated from social to potentially at-risk gambling based on accounts of losing control when gambling. Older adults are often living on fixed incomes with limited opportunity to earn back their losses, and this increases the potential negative outcomes from their social gambling (McNeilly & Burke, 2002). Furthermore, older adults face later life transitions such as retirement, lack of opportunities to socialise, death of a spouse and friends, and chronic illness, which may lead them to turn to gambling and other behaviours (e.g., drinking) as a distraction from the age-related changes they experience at this time in their lives (McNeilly & Burke, 2000).

Essentially, as negative experiences related to aging increased it appeared that the level of gambling participation in the participants also increased. In Extract 12, Harriet describes the experience of needing to retire from a job that she gained a lot of satisfaction from. In addition, Harriet reported that she was able to manage her feelings of loneliness and social isolation because playing bingo and EGMs was an opportunity to socialise, lift mood and escape from problems. Talking to staff and meeting people in the same situation appeared to be an effective mechanism to improve her sense of mood and self-esteem.

Extract 12:

Harriet: Yes that's right when I left Birdseye I felt isolated, because no friends, nothing to get up for and all that lot you know, you lose all contact and that's the point you know... I think myself, as I say to you, when people are on their own you know somebody talking to you nicely makes you feel good. Yeah that's what it is, it's, you're on your own all the time and the staff over there they are so kind. They

are, so you can't fault them and if you are feeling down they will come and sit with you whilst you are waiting for a taxi and it is the staff they give you a lift. They really do and of course you meet people that are in the same situation as you... [At bingo] You are amongst company. Your dog is everything. You can talk to the dog but the dog can't talk to you. So it makes you lonely, it really makes you lonely."

Harriet's feelings are reflective of other participants' accounts across the sample, demonstrating feelings of loneliness, whilst her words provide a solid example of the process of being lonely, the role of gambling and the need for relief. An implication of gambling for reasons such as loneliness is that it exposes older adults to an increased risk of developing problems with gambling than if there was a different mechanism for meeting one's emotional needs. Furthermore, with respect to the current example, if Harriet's gambling behaviour became excessive or problematic there are no adults regularly present in her life to notice and intervene and discuss the behaviour with her. For this cohort, there appeared to be a limited impact on family, relationships and employment patterns (due to retirement), meaning there were less immediate punishments for losing money through gambling, which may increase the value of the positive reinforcement being experienced.

The older adult female gambler can avoid deception and lies and does not have to account for her time, specifically her social time, as existing friends were also gamblers. For many participants, problem gambling did not have to be undertaken in secret. It was perceived the only *breakdown* was with oneself with many participants becoming disillusioned.

When gambling behaviour was divulged to family members they perceived playing bingo and gambling as a harmless recreational activity.

Harriet lives alone and cried during the interview about how lonely she felt, sharing that gambling enables her to 'talk to people'. However, conversely she describes how she still needs time to be on her own. At face value this may be contradictory, however it highlights the multiple benefits that are experienced by the cohort through gambling. Essentially, this apparent contradiction highlights how gambling also facilitates disengagement from emotional psychological discomfort.

For Harriet it is perceived that her gambling behaviour helps with her feeling of loneliness and past trauma. Many participants reported experiencing a traumatic event during adulthood. For example, Doris spoke about past childhood trauma and the impact it had on her life regarding alcoholism, addiction and Obsessive Compulsive Disorder [OCD]. In the current literature it has been observed that "*dating violence, marital violence and severe child abuse victimisation were associated with increased odds of gambling problems*" (Afifi, Brownridge, MacMillan & Sareen, 2010, p.331). However, there remains a significant paucity of research that addresses this connection between trauma and female pathological gambling (Boughton & Brewster 2002).

A common theme illuminated that some participants had experienced emotionally abusive and violent relationships. Put simply, participants have derived perceptions of themselves through what past partners have said to them and the implications of their behaviours towards them. Harriet speaks about how her confidence was taken away and how gambling brought it back after a divorce, and a separation, from violent and abusive partners.

The lived experience of the participants in this study and serves to further illuminate the particular roles that trauma plays in the initiation, development, and progression of

problem and pathological gambling amongst older adult women. Harriet's past relationships made her feel powerless and her gambling has made her feel strong and she is now able to show this power physically by asking 'anything'.

Within the transcripts there is an apparent connection between past trauma, coping with loss, grief and the negative experience of retirement. Participants describe their psychological aftermath with the most common consequence expressed as '*It/he took my confidence away*'. There was an undercurrent of past trauma affecting the self-worth of these older adult female gamblers, particularly regarding self-esteem and confidence. Josie elucidates her experiences of mental abuse and how she has dealt with these feelings indirectly through gambling.

Extract 13:

"Josie: I give that [confident] aura off but I am not underneath believe it or not that is the reason when I came here I needed time on my own and because I thought it was my partner that was bringing me down I needed time on my own we separated and I will just tell you quickly I have had two relationships both long relationships and both times the men sent my confidence plummeting, so I found I needed 'my own space.'"

The experiences of the participants affirm the temporary reprieve that gambling offers, referred to as '*my own space*.' However, what becomes evident is that the undercurrent of past trauma along with coping with retirement, feeling lonely, having a break from caring responsibilities and coping with illness, continues to drive the participants' desire for a sense of purpose and self-worth. An important finding within this theme is the emergence

of escape through gambling. Although acknowledged as unwise financially, gambling remains a safe place facilitating the psychological needs of this cohort.

Psychosocial theory provides a broad framework from which to view development throughout the entire lifespan. It enables emphasis of the social nature of human beings and the important influence that social relationships have on development. Erikson's (1980) psychosocial final stage of development 'ego integrity versus despair' is a phase occurring during old age and is focused on reflecting back on life. Those who are unsuccessful during this stage will feel that their life has been wasted, and will experience many regrets, feeling bitterness and despair, whilst success at this stage leads to positive feelings of wisdom. For many participants, describing their current gambling behaviour involved reflection on life. Gambling created an opportunity to re-establish perceived autonomy, leading to development of self-confidence and temporarily disengaging from despair.

4.3.2.2 Peer understanding and support

Another subordinate theme to emerge is that because of the aging process, both physically and socially, participants found increased need for peer support, to assist dealing with problems that are related to their disengagement from reality. In Extract 14, Dora highlights the supportive nature of the gambling community where an atmosphere is created where *'everybody speaks to everybody'*.

Extract 14:

"Dora: The atmosphere, the people and we are all friendly because they know that they have got somebody to talk to. You can sit on your own until they get there we sit on a table and there is lots of people that have the same table. So you know, oh

it is so and so over there, it's what's it, you know. It is marvellous and everybody speaks to everybody. How are you? If anybody is poorly like Peggy, she has got lung cancer, she is terminal but she makes the effort to come and a Saturday she comes on a little buggy. Lives in the village at the minute. Lives in Skegness with her daughter. But on a Saturday they bring her over and she comes and she hasn't been for a long time we heard she had been quite poorly. The lady that runs it, Chris, on Thursday told all she was not well on the Saturday, Peggy hadn't been for weeks, on the Saturday Peggy come and we give her a big cheer, so you are involved with what is going on with people you know and you can talk to them it's just that."

Bingo is a specific type of gambling activity that goes beyond recreation; bingo appears to enhance female friendship and gives purpose to life for those that are terminally ill and lonely. The gambling environment is perceived as psychological therapy in the form of talking treatment for older women. Older female gamblers share their problems amongst peers by talking and this helps individuals develop better coping strategies in later years. Peers pass on personal experiences offering advice regarding gender specific age related problems including bereavement, divorce, illness, low-self-esteem, loneliness and retirement.

Attending the gambling venue provides a regular time and space to talk about their troubles. Gambling is a regular commitment across British aging women and being a female member has social responsibilities including 'cheering' ill members back in to the group, saying hello, sharing and keeping fellow gamblers informed about the health of peers.

Harriet [extract 15] describes why engaging with those who have got ‘the same problem’ are in a stronger position to offer suitable and practical advice to peers. It is perceived that for aging women talking with peers may feel good specifically to receive a level of support and validation when discussing problems whilst these interactions have potential to build stronger relationships and create self – esteem.

Extract 15:

“Harriet: Exactly I think [peer support] is important because I think elderly people that have got more problems and the other person has got the same problem they discuss their illnesses they discuss you know how they feel.”

Harriet is a frequent gambler, therefore she has opportunity to talk over problems with her peers regularly in an environment where women have the ‘same problems’ as her. Sharing feelings has potential to establish closer relationships across peers that will understand, specifically if they are emotions associated with the ‘same’ age related problem.

Fundamentally, aging female gamblers are seeking to find resolution to their problems in an environment that appears to be confidential, trusting and free from intrusion.

4.3.2.3 Evoking positive states

Many participants stated that gambling took them back to a place where they used to visit the local bingo hall with their parents, and their childhood holidays at the coast. A main theme of the UK family holiday tradition was visiting the seaside and playing in the amusement arcades where both children and adults could gamble on low stake EGMs for

small prizes. The gambling environment is perceived as a place where one can relive times of when parents were alive, therefore it is natural to seek comfort through reminiscing by 'glancing in'. This glance following an open invitation of acceptance referred to as 'Do you want to come and play bingo?' escalated into Mary beginning to gamble. For Mary, visiting the amusement arcades, playing EGMs and bingo, was reminiscent of childhood memories and those of her late husband.

Extract 16:

"Mary: Does a bit you know it...it brought all them memories back because I have been coming down here for years you see. Since I was about 2 or 3, before we moved down here, and I can remember bingo at one time, it was bottle tops, like the one where you push your numbers across like you do now. It was bottle tops, I can remember that and I wasn't very old and of course it brought them memories back sort of thing in a way. I mean if I go down that way my late husband's family live down there, my mum had a camper van thing we used to camp outside."

For Mary the environment of the arcade and bingo hall was reminiscent of times when her mother and husband were alive, and was perceived as a time when she was happier, with less responsibility. Mary has demonstrated how bereavement is a factor that leads older adult women to turn to gambling as an escape and to cope with negative emotions. Mary has shown that past long term emotional deficits are associated with her escape gambling including problems in her current emotional state. Put simply, gambling reminds Mary of times when she was a child, evoking positive memories of holidaying with her mother, whilst gambling in her current emotional state disengages her from caring responsibilities of looking after her son. Gambling is Mary's form of escape. For the older adult female life

can appear significantly emotionally challenging, therefore there is a strong need for these women to find opportunities to escape from emotional and mental discomfort.

4.3.3 Superordinate Theme 3 - Spending Too Much

From the participants' perspective, the situational characteristics of gambling venues which are primarily the features of the environment such as location, heating, lighting and additional services such as loyalty schemes, cafeterias and cash dispensers, often enticed them to spend. For example, many participants perceived that Automated Teller Machines (ATMs) were placed directly next to slot machines as a ploy to encourage gambling, and the continuance of gambling. The price of gambling is not a fixed expense, and it emerged clearly from the transcripts that some gambled and lost more than they could afford to lose. Participants stated they budgeted and set a monetary sum that they could afford to lose before they went to gamble, although in practise many participants had difficulty being disciplined after the pre-determined budget was lost.

4.3.3.1 Environmental Facilitation of High Expenditure

Participants have identified design tactics at their venue that influence gambling behaviour and although aware of these potentially manipulative factors they still choose to gamble. For example, in Extract 17, Sandy explained how marketing strategies combined with her impulsive behaviour increased her level of risk for problem gambling by spending more than she could afford. Other environmental facilities catalysing her level of risk for problem gambling included deliberate paths to keep customers spending money, including the floor layout of slot machines and that change was always given in pound coins.

Extract 17:

Sandy: Sometimes I do; at the moment they have got an offer on for a pound but you can win a lot of money. The stamp has to be on your books to play that game and you know what I mean when the games come up, they put a stamp on, you can win extra money you know like a thousand pound a line.”

Extract 17 highlights how gambling behaviour, initially for socialisation, can be transformed within session inside the establishment. Once inside, participants have to remain in control of their gambling behaviour as there are multiple environmental cues that stimulate desire in the participants to continue gambling after they have reached their predetermined limits. It has been demonstrated that gambling behavioural decisions have been influenced through the various environmental characteristics and marketing strategies employed in the bingo halls. Because bingo is often perceived as a low risk form of gambling, the participants appeared unaware of the risks for problem gambling associated with the activity.

Extract 18:

“Maria: Oh yeah oh I know people who are in the trap, yeah my cousin back home. She likes to play the boards and she played the pound games so she always got a bag full, bank bag with money in. She always has got to have £20 card for the card bingo, the Mecca whatever. She would say “you having a go”?”

Maria later described her destructive consequences of spending more than she can afford whilst gambling ‘*when her head is all over the shop*’. It is evident that the initial motivations to gamble for socialisation appear lost once inside the gambling environment.

Potentially, if older adult women are gambling frequently to satisfy a need they will be exposed more often to the various gambling encouragements, such as promotional offers, in the gambling environment. Moreover, many of the participants indicated that they were often in poor mental states, with many reporting that they were occasionally suffering from periods of depression and anxiety. It is probable that older adults may be more at risk of exceeding their predetermined budget, making poor behavioural decisions during these periods of impaired mental health. From this perspective, raising awareness of disordered gambling, and how to gamble responsibly, appears an important target.

For example, in Extract 19, there is a proposition that gambling addiction is less harmful to both the individual and their significant others than other forms of addiction. Effectively, this misconception supports the proposition that more needs to be done to raise problem gambling literacy in older adult populations, to encourage vigilant gambling and safeguard against dismissing problem gambling during the early stages of the disorder.

Extract 19:

“Dorris: Bingo ladies will just justify it, but you get to the point at our age, if the bingo ladies are addicted to it and can afford to be addicted to it and it actually gives them a quality of life they enjoy, I don’t think they are doing anybody any harm. If you have got £20,000 pound a year to live on and they want to spend it on bingo, even if they are doing it addictively and it makes them happy, it isn’t causing massive money or emotional problems I think let them get on with it. A bit different with drink because drink takes everybody with it, drugs that takes everybody with it, your mum, kids everybody gets affected by it. But if grandma wants to go play

bingo and she doesn't want to leave 20 grand to you, let her take it to bingo. She has been here 80 years; it is not hurting her let her get on with it."

4.3.3.2 Lack of Responsible Gambling Awareness.

Participants did not perceive gambling on bingo and EGMs at their local venues as a realistic threat in terms of developing a gambling disorder. Indeed, the participants appeared much more informed about gambling responsibly online compared to their local gambling venue, and this suggests a lack of awareness regarding the risks of gambling in social environments. When asked directly, none of the participants were able to articulate what problem gambling consists of, or how problem gambling disorders can develop.

In the transcripts, it was apparent that this cohort of frequent older adult gamblers would not be supportive if the gambling employees intervened during gambling sessions. There is the perception that problem gambling is not a significant issue in later life. Put simply, it was perceived that given their advanced years, there is less of a need to avoid risk and harm, because they have less responsibility and they have very little else in their lives aside from gambling. If this perception is reflective of the wider older adult population, it highlights a significant challenge in regards to promoting responsible gambling and attempting to assist players in the gambling environment who may be exceeding self-imposed 'safe' gambling parameters. This adds further support to the need to improve problem gambling literacy in older adult population, as a mechanism to safeguard against, and mitigate gambling-related harm.

Vera understands her consequences of chasing losses, and by observing this in others it provides impetus to gamble responsibly, demonstrated in Extract 20.

Extract 20:

“Vera; You watch them (her peers) in there and they are chasing and chasing their money they swear and they go and change some more up. I put too much in, I thought it is your bloody fault, some of them can’t help themselves can they? I watch them in there and I think there is no way I can afford to lose that kind of money when you haven’t got it”.

This is achieved by Vera perceiving increased control over her gambling behaviour via observing her peers’ mistakes. Fundamentally, participants acknowledge that their gambling behaviour is not motivated by winning and it appears that participants make better decisions about their gambling behaviour after observing peer’s negative behaviours.

4.4 Discussion

4.4.1 Summary

The objective of the study was to explore the lived experiences of British older adult women who were frequent bingo and EGM gamblers. By giving older female gamblers a voice it has been possible to understand the specific gambling motivations from the players’ perspectives. Studies One and Two were effective in providing a detailed, contextualised outline of gambling behaviour and associated risk factors for problem gambling. However, the current phenomenological study enhances the understanding of the value that the participants place on gambling, and essentially why they are willing to participate in an activity that has a negative expected utility. By interpreting the

participants' accounts, it is clearly evident that gambling for this cohort is less about the potential to win money but rather fulfilling psychosocial needs that are often unmet in the later stages of adulthood.

Gambling to *fill voids*, *effective emotional escape* and *environmental facilitation* support findings from Studies One and Two of the thesis. Study two employed a quantitative design and at a nomothetic level identified five predictive risk factors for problem gambling, including; playing EGMs and bingo regular, anxiety, loneliness and increased number of different gambling activities. Employing IPA is not to establish an explanation of gambling behaviour rather to provide a detailed representation of participant understandings and experiences, in this case, to create clearer understandings of possible risk factors for frequent gambling in this demographic. Put simply, by virtue of employing IPA, an in-depth qualitative analysis will provide commitment to the exploration of meaning of the quantitative analysis identified in Study Two and will facilitate a rich detailed understanding of older female gambling behaviour (Smith, 2003).

Taking superordinate themes one and two, it is evident that primary motivations were to 'fill voids' and for 'effective emotional escape'. Superordinate theme, 'environmental facilitation' (accessibility to cash, seductive marketing strategies) was perceived to affect gambling behaviour and attitudes. It is important to consider that the initial gambling behaviour was catalysed to fill voids and for effective emotional escape and because of the psychological reward they receive when gambling it is difficult maintaining control in the gambling environment. Essentially, the gamblers want to increase the reward they receive

gambling but are limited by the cost, and therefore are tempted to continue gambling despite potential negative consequences.

A relationship between gambling-related harm (overspending) and psychological well-being appeared to exist within this cohort of older adult females. From the transcripts it emerged that participants varied across levels of risk for gambling-related harm. The majority of participants were emotionally troubled prior to gambling frequently; although many had sporadically gambled recreationally throughout their lives. However, frequency of gambling appeared to also increase with age, to facilitate social interaction, specifically following retirement and bereavement.

Participants consciously acknowledged their motivations to gamble via exposing their emotional gambling experience. A common consequence of experiencing trauma in adulthood was the impact that it had on participants in developing a sense of self and identity in their later years. There are many self-terms which are used interchangeably but which have distinct meanings (e.g. self-image, self-esteem, ideal self, self-identity). According to Murphy (1947), the self is the individual as known to the individual. Burns (1980) defined it as the set of attitudes a person holds towards himself. The central reactions of others are in the formulation of our self-concept (Cooley, 1902).

The super ordinate themes, *filling voids* and *effective psychological escape*, identified an association between frequent gambling, self-identity and a need for support in terms of basic daily functioning and/or more serious affective problems. Taking a sociological perspective, gambling has its own social rewards for this subgroup, including membership

in a gambling subculture and “*provides new peers, a social purpose, an identity, and a private language.*” (Cavion, Wong & Zangeneh, 2008, pp.112-113).

The current study has provided a detailed understanding of the motivational processes in British older adult female gamblers, and indirectly, the potential for gambling-related harm. It was identified that with repeated exposure and a preoccupation with gambling, chasing losses, depression, anxiety bereavement, retirement, loneliness, social isolation and being a carer, were often related to gambling for longer and for more money than initially determined. For many gambling was a break from problems. However, for several of the participants their choice of escape was often the source of other negative states because of the consequences of losing money that they could not afford to lose. Put simply, gambling to escape problems often resulted in feelings of anxiety and shame when considering the money that had been lost when gambling.

Participants enjoyed retelling their gambling experiences; talking about wins and *breaking even* although conversation was often curtailed when financial losses were probed.

However, it is important to recognise that this study relies on the ideographic accounts of participants and are highly likely to be affected by the participants’ mood or current situation. Participants experiencing gambling-related harm were more likely to have searched for reasons to account or explain their gambling behaviour. In addition, none had received help for their gambling where these problems would have been discussed. A participant stated that she was currently receiving counselling although her excessive gambling behaviour remained undetected. Primarily she did not want to disclose the

behaviour; secondly she did not perceive harm for gambling and ultimately the counsellor did not explore the recreational activities of her client.

The majority of the sample reasoned that gambling was about ‘affording it’ and that factor often dominated the narrative when discussing controlling their gambling behaviour. Many had developed strategies to play economically, in terms of maximising the benefits of gambling whilst minimising the costs, such as avoiding bingo games with the higher potential jackpots. Detrimentially, an overriding existential hunger to gamble was observed across participants in order to alleviate social isolation, loneliness, a reason to wash, dress and vacate the home. Gambling appeared to have its own social rewards, including a membership in an older female dominated gambling subculture.

Research to date often presents older adult gambling as mostly controlled and recreational, and that the extent of problem gambling is rather benign (McNeilly & Burke 2000; Ohtsuka 2013; Ohtsuka & Karoglidis 2001). It is possible the benign relationship is not representative of all subgroups of older adult gamblers and older adult women who experience higher levels of loneliness and stress may be more vulnerable to gambling-related harm. For this cohort, IPA has accessed the underlying motivations to gamble in the context of situational, individual and psychological ideographic accounts, highlighting that understanding older adult female gambling is a complex and multi-faceted concept.

4.4.2 Implications of *Filling Voids*, *Effective Emotional Escapism* and *Spending Too Much*.

It is evident that there is multitude of differential and situational motivational characteristics for gambling. Participants spoke about the rewarding elements and factors that initiate gambling although it appears that these primary motivations are not the same as those that maintain gambling behaviour i.e. factors that change gambling behaviour over time from social recreational gamblers to problem gamblers. Exploring the emotional escape of for this cohort of older adult female gamblers has provided insight to understanding the co-occurring complex needs and pathways to frequent gambling and potentially gambling-related harm.

Although risk factors for older adult problem gambling such as loneliness and anxiety were identified in Study Two, the phenomenological approach of the current study provides a much more contextualised understanding of the behaviour. These variables were explored and other motivational variables were also elucidated from the transcripts.

Participants sharing their psychological experiences created further insight into how these variables are affecting their gambling behaviour. Establishing the association between child and adulthood trauma, dysfunctional relationships, co-morbidity, retirement, bereavement, loneliness, social isolation and their effect on gambling behaviour may help to identify age-related risk factors. Furthermore, creating a profile of participants at risk will be integral to understanding how individual differences and circumstances impact gambling behaviour over time for this subgroup. Specifically, by exploring the complexity of the processes of gambling and well-being, attempts can be made through temporal sequencing to try and identify the most prominent risk factors for gambling-related harm. However, it is difficult to predict longer term outcomes for frequent older adult female

gamblers. Ideally, a longitudinal study across British older adult women gamblers would provide a detailed insight to the long-term effects of gambling to temporarily escape social and age-related problems.

Gambling was clearly described as a source of escaping psychological problems and lifting mood, and generally accessed to achieve a break from reality. Potentially, if gambling is accessed under these circumstances it provides an understanding why participants engage in the behaviour and provides information of gambling patterns for example, regularly dipping in and out of gambling for a break to evoke pleasurable states. Gambling to escape problems has shown to have an effect on gambling behaviour including beliefs about control and ability to make rational decisions (Moore & Ohtsuka, 1999). Brown and Coventry (1997) stated that gambling can provide, through the hope of winning, an enhanced sense of control over life amongst a group characterised by low power and influence. Participants were not primarily motivated to gamble to win money but rather to moderate emotions and improve their quality of life as a consequence of aging.

Participants reported that *spending too much* when gambling was largely influenced by environmental facilitation, including the positioning of EGMs beside bingo gambling, and the provision of ATMs within the gambling environment. Bingo boards are a relatively new phenomenon within Britain, and the participants identified this game in particular as a risk for over-spending. Bingo boards, instead using paper tickets, utilise a touchpad and digital pen. Bingo boards facilitated participants playing more games simultaneously, therefore potentially increasing the amount that can be lost in one session. Essentially, participants were able to purchase a larger amount of tickets than what they would be able

to handle if playing on paper because the electronic terminal automatically marks the numbers off the tickets as each number is called. The touchpad also enhances the gambling experience by ordering the tickets so that the tickets that are closest to winning are prioritised at the top of the screen. The bingo boards offer many features including 'Mechanised Cash Bingo' including slot games, four boards can be accessed instead of the usual two, and games can be credited via their bingo card. Playing *link ups* with other clubs to obtain larger winnings was also popular. It is evident from the transcripts that older female gamblers are playing bingo electronically and in traditional formats, with some participants doing so every day. Participants observed increased patterns of play in peer gambling behaviour also, reporting gambling on the boards elevated their gambling patterns too.

Across the transcripts the bingo boards were identified as a dominant area alongside playing EGMs where increased expenditure and frequency of play was observed. Higher event frequency was achieved as the technology enabled numbers to be called at an increased rate (approximately 1.5 seconds a number). Participants observed the cost of bingo boards is proportionally higher than playing the standard paper six tickets. Primarily, participants suggested that they were vulnerable to venues encouraging them to play electronic bingo, as commercial clubs often endorsed 'Electronic Bingo Packages' which effectively makes the cost of each ticket better value for money. Marketing strategies increase risk for participants 'spending more than they can afford. For example, if the club sold strips of six for £12 for a session, which corresponds to £2 per ticket, then they may sell an Electronic Bingo Package of 24 tickets for £36 (£1.50 per ticket).

Lack of monetary value was identified as participants' winnings were automatically deposited into their bingo account. This means that players are not paid winnings in cash and there is risk in not acknowledging the monetary value as winnings are automatically applied on to the account immediately, so they are more likely to continue playing than collect and stop play (Griffiths, 2003).

Fundamentally, there is scope to consider that this area requires further investigations as electronic bingo (i.e. 'bingo boards') appears to have an increased potential to encourage further gambling, even when predetermined budgets are met. A recent UK study found internet gambling to be particularly attractive for many of the more vulnerable groups of men and women in our society including individuals spending long periods at home, which may feel bored or lack adult company; specifically, those suffering illness, disability, social isolation or are housebound. It also includes women with caring responsibilities, either for young children or for the elderly (Corney & Davis, 2010).

Participants did not perceive their gambling preference (bingo) as associated with gambling-related harm, as predominantly playing EGMs and online gambling were identified by participants as the *addictive* forms of gambling. It is apparent from the data that control and responsible gambling awareness needs to be increased for older adults that play bingo, specifically electronic bingo regularly. Ultimately, it was interpreted that accessing help was not a primary concern for the participants because at this stage of life it was perceived that it was more important to meet unfulfilled needs.

4.4.4 Limitations

There are two primary epistemological limitations associated with IPA, including the potential for pre-existing biases to affect researcher interpretation of data and the reliance upon language to accurately represent participant experiences (Willig, 2013).

Exploring the gambling behaviour of British older adults, evaluating psychological and physical health variables as risk factors for problem gambling has previously been researched within the thesis via grounded theory and a cross-sectional survey design. However, the current study employed an idiographic exploration of the lived experiences of British female older adult gamblers to explore in detail their gambling behaviour including motivation and underlying risk factors associated with gambling-related harm. Employing a nomothetic approach in Study two observed significant risk factors for problem gambling yet did not reveal detailed understandings of the processes observed or the meaning of the processes to the gambler.

Essentially, phenomenology places primacy on understanding the 'life world' or lived experience of the individual. In the current study the researcher remained conscious of the contextual influence on the representational validity of the experience. The researcher actively interpreted whether the experience being disclosed would be represented differently, if questioned in a different context (i.e. epistemological reflexivity). It is important to acknowledge that the disclosed experience is a version of the experience that has been constructed, when making conclusions from IPA research. This highlights limitations of the effectiveness of IPA as a research tool.

IPA acknowledges that the researcher's engagement with the participants' data has an interpretative element, yet in contrast to some other methods (e.g., discourse analysis; Potter, 1996) it assumes an epistemological stance whereby, through careful and explicit

interpretative methodology, it becomes possible to access an individual's cognitive inner world (Willig, 2001). The aim of IPA is not to produce an objective narrative of the transcripts but rather a narrative that is "*a co-construction between participant and analyst in that it emerges from the analyst's engagement with the data in the form of the participant's account,*" (Osborn & Smith, 1998, p.67).

Applying IPA in this study enabled 'an insider's perspective' (Conrad, 1990) through accessing the lived experiences of British older adult women gamblers providing a detailed account of factors influencing risk for problem gambling behaviour, that would not have been able to extract using alternative methods of analysis.

The data collected is only representative of ($N = 10$) participants and therefore cannot be generalised to the wider population of British older adult female frequent gamblers; therefore it is suggested that further empirical work be engaged in to substantiate and build on the current study. However, a small sample can provide important insights into an under researched phenomenon, if it is presented with enough contextualisation (Smith & Osborn, 2003)

4.4.5 Conclusions

In conclusion this study reveals that this cohort of British older adult women access gambling regularly by playing bingo and EGMs to escape their negative mood states and to increase levels of arousal. Gambling offers older women a range of diverse experiences, including physical, imaginative, emotional and symbolic connectedness between peers and a shared safe environment. This is particularly pertinent when considering that often older adults prefer to stay in their local communities as they reportedly offer a sense of belonging in an uncertain world (Lehning, Scharlach, & Wolf, 2012; Roo, Kolobe &

Keating, 2014). When acknowledging the complexity and heterogeneity of the female older adult gambler, IPA was central in understanding the diversity of psychological need experienced.

It is perceived that winning was not a primary factor in motivating and maintaining gambling behaviour. The participants' explanations of a need to engage in gambling created a clearer understanding that participation is built on personal social construction, offering assistance to others in the form of peer understanding and support. Put simply, at gambling venues older adult female gamblers offered psychological assistance by listening and sharing similar experiences such as abusive marriages, full time caring and illness. Li, Hodgetts and Sonn (2014, p.28) described sense of community as '*based on the perception of similarity among members, where reciprocal relations facilitate the satisfaction of individual needs*'. Fundamentally, from this viewpoint it is apparent how and why older female gamblers create and maintain gambling communities.

A challenge understanding the development of older female gambling and gambling-related harm was related to the barriers participants face to (re)create positive identities as they age. Gambling was perceived as a process of optimising their potential for maintaining positive psychological health, social connectedness and emotional security. All participants' gambling behaviour was affected by associations with superordinate themes one, two and three, highlighting that a mixture of specific age-related vulnerabilities are likely to motivate frequent and potentially problematic gambling behaviour.

Individual differences identified that participants gambled regular for different reasons, some gambled for emotional connectedness whilst for others it lifted mood. If older adult women are gambling for these reasons from a point of vulnerability, they are at an increased risk to increase gambling frequency to facilitate and maintain psychological need to 'fill voids'. Fundamentally, there is a need to pay attention to the role and significance of motivations to in female older adult gambling communities. The motivational functions of female older adult gamblers within this study were based upon the need to avoid negative psychological contingencies.

The value of this research is that it has provided further detailed understanding concerned with the complexity and process of older adult female gambling, and when explored closely, it is an area of concern regarding maintenance of gambling in a manner devoid of harmful consequences. It is perceived that early intervention and prevention strategies will positively impact on the well-being of older adult female gamblers. Findings from this study may stimulate and direct further empirical work exploring the motivations and processes observed. Such empirical studies may be able to inform social policy regarding steps that may be taken to mitigate gambling related harm in older adult populations.

Chapter 5

Conclusions and Recommendations

5.1 Summary of Findings

Study one employed an inductive approach investigating British older adult gambling behaviour focusing on key motivations and reward for involvement. The study was devoid of any pre-determined assumptions due to limited understanding of British older adult gambling behaviour, including age-specific vulnerabilities that may be fundamental to developing problem gambling behaviour. This is the first study to investigate British older adult gambling behaviour.

Generating a substantive theoretical picture of British older adult gambling behaviour indicated an elevation in individual involvement in gambling behaviour. The grounded theory to emerge highlighted four theoretical propositions. Theoretical proposition one proposed that gambling for this population has limited deterrents because of high accessibility and availability in comparison to alternative non gambling activities, therefore increasing individual motivation to gamble. While gambling was accessible through a range of environments (e.g., television, internet, and community gatherings), commercial gambling venues and betting shops were all situated within a close proximity. Furthermore, commercial environments were highly supportive and facilitative of age-related physical disabilities including physical frailty. The close proximity and facilitation of physical disabilities were observed as a catalyst for increased participation. Older adults were likely to gamble in a combination of commercial and non-commercial venues.

UK commercial gambling venues operate in accordance with the Gambling Act 2005 (Gambling Commission, 2014) by way of a licence, permit or registration to provide facilities for gambling and are subject to varying degrees of regulation dependent upon the

type of gambling, the means by which it is carried out, the people by whom and to whom it is offered. Under the Gambling Act 2005 non-commercial gambling such can be played in clubs such as older adult community centres, provided that the jackpot size does not exceed £2000 in any seven-day period. The Gambling Act 2005 defined non-commercial gaming ‘*as an event if the arrangements for the event are such that no part of the proceeds are to be appropriated for private gain*’ (Gambling Commission, 2014, section, 297). However, it is noted that older adult players in a commercial venue were more likely to participate in a larger number of different gambling activities including EGM’s and electronic forms of bingo.

The second proposition: *gambling provides temporary escape from psychological distress associated with the ageing process* identified that gambling behaviour was motivated by providing a brief respite from age-related psychological distress, with specific reference to bereavement, loneliness, dysphoria and social isolation. Older adults stated that engagement in gambling, specifically in a commercial venue, alleviated psychological pain by providing socialisation and relief from feelings of dysphoria. Overall gambling for psychological escape was proposed as a positive reinforcement, motivating and maintaining gambling behaviour.

Theoretical proposition three proposed gambling was effective in providing distraction from physical pain and negative affect associated with age-related physical deterioration such as frailty. For example, feeling *slowed up* and pain-related disease in relation to age-related deterioration. Older adults reported that when being entertained by gambling they were distracted from their physical discomfort and pain. This distraction could be conceptualised as the provision of dissociative states via narrowing attention and reduction

of self-awareness (Powell, Hardoon, Derevensky & Gupta, 1996) which is often described as having a temporary analgesic affect.

Finally, theoretical proposition four proposed that gambling satisfied unmet psychological needs for pleasurable arousal such as hedonistic voids and provided cognitive stimulation that was not available elsewhere in their lives. Older adults within this study stated their lives were devoid of cognitive stimulation or indeed pleasure and excitement. Older adults identified that gambling fulfilled these needs. Furthermore, participants stated that even when alternative leisure activities were available they were not interested in participating because they did not fulfil their psychological, physical, social and/or cognitive needs to the same extent gambling did. The *Core Concept* revealed British older adults participated in gambling as a mechanism to alleviate distress from psychological and physical lifestyle changes associated with the ageing process.

The value of study one is the direction provided for the subsequent studies in this thesis empirically investigating British older adult gambling behaviour. British older adult gambling motivations observed in study one have identified several unanticipated variables, such as the proposition that gambling for this population can, to an extent, provide positive and adaptive benefits. However, there was scope to investigate further if the psychological and physical health variables identified, and the different types of gambling activities observed, were related with problem gambling behaviour. In the data, distinctions are made between social aspects of visiting gambling venues, and potentially negative consequences such as affordability and financial costs and types of gambling referred to as 'heavy gambling'.

5.1.1 Study 2 Predictive risk factors for problem gambling in British older adults

Study two evaluated whether the motivations for gambling proposed in study one were predictive of problem gambling within British older adults. Fundamentally, the systematic grounded theory approach (Strauss & Corbin, 1998) in study one produced an inductive set of theoretical propositions to explore in a quantitative methodology. Employing a cross-sectional survey design enabled the exploration and development of the emergent themes in study one as risk factors. Anxiety, depression and poor physical health, identified as frailty and pain were emergent in the first study, proposing that British older adults gamble for *Physical and Psychological Stress Reduction*.

Gambling can offer a healthy change from daily life or from social isolation, which could be vital for greater well-being in some older adults (Vander Bilt et al., 2004). Participating in gambling to alleviate feeling lonely, for cognitive stimulation and to fulfil hedonistic voids was identified in study one as a positive benefit. These findings are in line with existing literature identifying that gambling has positive benefits. Hagen, Nixon and Solowoniuk (2005) found older adults were motivated to gamble as a form of leisure activity and mainly participated for socialisation and entertainment. However, findings from study two show that those gambling for positive benefits including alleviating loneliness in old age are vulnerable and at an increased risk for problem gambling. Therefore, this improved understanding of motives for British older adult gambling, and has implications for treatment professionals including prevention and intervention strategies.

Blaszczynski et al. (2011) stated that many responsible gambling programs lack a conceptual framework and, in the absence of empirical data, their components are based

only on general considerations and impressions. Consequently, identifying motivational risk factors for problem gambling specific to the British older adult gambling population is a first step to enhance the limited knowledge surrounding UK responsible gambling social policies. Overall, identifying and drawing on the vulnerability implications of British older adults that engage in gambling, and issues specifically related to health and well-being of individuals, has potential to inform basic principles to work towards the development of a UK responsible gambling programme for this subgroup.

Using existing international studies to inform UK responsible gambling policies should be viewed with caution. Studies include samples from various socioeconomic classifications and different cultural contexts; in addition, these studies use different motivational measurements (e.g., the Five Factor Gambling Motivation Model; Lee, Chae, Lee & Kim, 2007). The Five Factor Model includes general populations as opposed to specialising in older adults (Lee et al., 2007). As a consequence, this compromises the psychometric values of measurement for this group. This is based upon evidence that older adult gamblers display unique motivations and discrete risk factors for problem gambling based upon their unique age related motivations (Nower & Blaszczynski, 2008). However, until a valid, cohesive, standardised motivational model emerges that integrates knowledge from existing and recent older adult gambling research, theory and practice it will be challenging to effectively reduce problem gambling in British older adult populations.

Refinement of risk factors for problem gambling associated with older adults requires identification in order to make accurate measurements of problematic behaviour. However, classification accuracy of older adult problem and pathological gambling is complex and special populations may exhibit symptoms and behaviours of problem gambling different

from those measured within general adults (Stinchfield, 2010). Subramaniam et al., (2015) noted that other instruments to measure gambling behaviour have been similarly developed for the younger adult population, highlighting an emergent need to develop screening tools for older adults. However, drawing on the motivational risk factors observed in study two there is potential to inform and work towards the development a screening tool for this population.

Study two has provided a regression model for risk for problem gambling in older adults in Britain. In this context, professionals exploring the recreational activities of older adults could potentially refer to the model to identify if their clients are engaging in the types of gambling activities that place them at risk for problem gambling. Furthermore, to explore if their older adult clients that gamble are experiencing anxiety and are lonely. However, older adults may be reticent about disclosing their problems with gambling because of embarrassment, pride, or stigma (McNeilly & Burke, 2000). This explorative tool has potential to be used for problematic gambling behaviour in this age group, and whether it needs to be examined further. Conwell, Duberstein and Caine (2002) identified that rates of suicide among older adults are higher compared to other age groups, due to a range of risk factors, including affective disorders, physical illness, functional impairment, and disruption of social ties. Therefore, it is suggested that British older adult health care providers are educated with training and evidence-based research where possible to create awareness of factors that may be related to problem gambling.

It was observed there are differences regarding cultural contexts and motivations for gambling behaviour in older adults. Study two has refined the risk factors specifically within British older adults in order to add to existing older adult international gambling

literature. It also provides foundational support to address previously identified knowledge gaps, such as Lister and Nower's observation that *"it remains unknown whether discrete or unique risk factors predispose certain subgroups of older adults to develop gambling problems as compared to other adults and younger adults"* (Lister & Nower, 2013, p. 350).

The regression model in study two has illuminated subgroups of older adults at risk, defining subgroups with specific forms of psychological risk for problem gambling (e.g., anxiety) and those that are lonely. Loneliness is an example of how a beneficial factor associated with gambling participation has potential to be a risk factor. Loneliness is a motivation identified as an underlying mechanism to initiate, intensify and maintain older adult gambling behaviour (Clarke, 2008; Clarke & Clarkson, 2009) and is likely to give rise to negative consequences for the individual. It is proposed that British older adult disordered gambling is to be considered dimensionally on a continuum, rather than in a dichotomous fashion of pathological gambler, versus, non-pathological gambler. In this context, it is appropriate to evaluate how being lonely and gambling may progress into a disorder where gambling may be perceived as a form of psychological dependence.

Understanding types of motivations at this embryonic stage will increase understandings of risk factors, proposing aetiological processes that may increase risk for problem gambling.

Fundamentally, it is crucial to identify risk factors for older adult problem gambling behaviour from a British perspective considering cultural differences affect motivation to gamble (Medeiros et al., 2015). Furthermore, gambling behaviour is a multi-faceted behaviour that is heavily contextually dependent and cannot be adequately explained from a single perspective (Griffiths & Delfabbro, 2001). For example, the model proposed in

study two identified predictive risk factors connected with psychological health factors and preferences for type of gambling activity including playing EGMs, sports betting and bingo regularly.

Playing EGMs was the strongest predictive risk factor and accounted for 41.2% of the total variance of older adult problem gambling. Therefore, a relationship has been observed demonstrating that British older adult's preferences for type of gambling activity catalyse their risk for problem gambling. In line with existing research, engaging in this type of gambling activity makes older adults particularly vulnerable, as individuals predominantly gambling on EGMs develop a pathological profile faster than gamblers favouring other gambling activities (Breen & Zimmerman, 2002). Ultimately, the model represents risk factors specific to British older adult populations and clearly identifies high risk subgroups for problem gambling, and therefore distinguishing harmful types of play.

It is proposed an empirical evaluation of the significant risk for problem gambling within a large, demographically diverse sample of older adults was an important step in understanding problem gambling within this population. However, there remain limitations in a variety of validity evaluations, such as discriminant and convergent validity, which cannot be evaluated because there are no suitable measures currently available to compare the proposed model with. However, this was expected given that this was the first study exploring British older adult gambling behaviour in the context of evaluating the predictive value of psychological and physical health factors for harm. In light of international comparisons, study two showed that British older adult problem gamblers are likely to report negative psychological health status including physical and mental health problems,

such as depression, and this has been shown in existing international literature, specifically in comparison with non-problem gamblers (Botterill, Gill, McLaren, & Gomez, 2015; McNeilly & Burke 2002; Zaranek & Lichtenberg, 2008).

In its current state the model in study two has potential to serve as a useful guide to develop theory, as it has signposted specific variables as integral to future gambling research in British older adult populations. Not least, although this sample is not representative, the study clearly highlights that problem gambling is evident in British older adults. Of the sample, 15% indicated some level of problem gambling behaviour. More specifically, the study highlighted that problem gambling and increased participation in gambling behaviour is a significant issue for British older adult women.

5.1.2 British older adult women gamblers are a vulnerable subgroup

The aim of employing an Interpretative Phenomenological Analysis (IPA) in study three was to explore how female participants that were displaying a level of problem gambling make sense of their gambling experiences. Study three facilitated findings from study two, to gain clear understandings of the predictive risk factors linked with problem gambling. Specifically regarding the exploration regarding the sequence of symptoms relative to the onset of problem gambling in British older adult women was explored in the interviews.

Building on the findings of studies one and two, study three has revealed pathways to potential risk factors for gambling-related harm that appear unique to this subgroup. Employing a qualitative methodology enabled detailed explorations of the female older adult gambler in terms of changes in experiences and behaviour in relation to developing

problem gambling from a phenomenological epistemology. Little is known specifically about British older women who gamble, why they gamble or what factors place them at risk for developing problems (McKay, 2005). Because of this pervasive lack of knowledge, study three has filled this gap and observed that age, gender and negative psychological and physical health are risk factors for problem gambling in British older adults. Factors related to risk were frequent EGM play including electronic forms of bingo as observed in study two.

Employing IPA allowed for the temporal relationships of psychological comorbidity and its association with problem and pathological gambling to be explored. Put simply, in what order do the symptoms present themselves, before initiation in gambling, or as consequence of gambling. Study three supported study one in that by analysing the temporal relationships it is confirmed that the types of motivations identified in study one were part of a process that catalysed motivation to gamble, therefore it was tentatively concluded that gambling is a coping mechanism, and in turn, maintains gambling behaviour as a personal ability to cope. Fundamentally, when evaluating British older adult women's gambling experiences, it is proposed that gambling under an unstable temperament is likely to decrease the rationality of their behaviour. Cognitively, British older adult women appear more likely to make maladaptive choices whilst gambling based on emotionally charged decisions.

Gambling behaviour in the women interviewed was involved in the maintenance of emotional problems and gambling was perceived as an effective tool to enable them to cope with negative experiences of getting older. However, despite gambling being

presented as a valuable tool, participants claimed that they often exceeded budgeted spending limits and were often experiencing negative financial consequences.

Furthermore, it was interpreted that if British older adult women explored and re-evaluated the reasons why they gamble their decisions may be able establish better control of their gambling behaviour. More importantly, identifying the process that tips responsible gambling into problem gambling. Overall, this may be effective in minimising excessive gambling.

Ultimately study three discovered several mediating experiential factors such as negating loneliness, ease of availability and pleasurable excitement that created a rewarding experience for the participants. Essentially, it was identified that gambling for British older adult women is a popular activity, and it is culturally and sociably acceptable, therefore increasing the likelihood of participation. A critical factor in what makes gambling such a pleasurable and rewarding activity in commercial venues is that the older women feel welcomed in a safe and friendly environment which is perceived as not being readily available in other leisure environments. From the very positive experiences reported it appears that any interventions in this population to reduce gambling frequency and exposure will need to be significant, as it is very clear from the accounts that gambling experiences provide substantial value to this cohort.

5.2 Discussion

5.2.1 Employing inductive and deductive approaches

Method selection across the thesis was determined by contrasting the strengths and limitations within each methodology, and evaluating which method would be most

efficacious in achieving specific objectives. Competing qualitative and quantitative designs employed within the thesis produced different types of knowledge. The principal objective of the research was to provide a platform to direct future research into British older adult gambling, with the longer term aim to reduce gambling related harm in this population. Therefore, it was important to understand the nature of the motivation to gamble from an inductive epistemology to understand the extent to which those factors, anticipated or otherwise, affected gambling participation. Current information regarding older adult gambling does not capture that of British older adults. It was important to understand why British older adults access particular types of gambling activity, as some types of games such as EGMs are more associated with problem gambling than others (Griffiths, 1999). This was to help establish if British older adults were vulnerable to problem gambling based on the types of game they play, and if duration of session and how often they played out of the last 30 days were risk factors. Effectively, the thesis has identified opportunities to inform research into interactions with older adult gamblers to maximise the likelihood of gambling responsibly and reduce risk for problem gambling.

This research program has employed diverse methods to capture motives for older adult gambling behaviour and association of these motives for risk for problem gambling, evaluating psychological and physical health as predictive risk for harm. The thesis design has included an inductive, epidemiological and phenomenological approach in investigating older adult gambling, and therefore presenting a composite rendering of the phenomenon.

5.2.2 Vulnerability for problem gambling in commercial and non-commercial venues

All three studies in the thesis collated data from commercial and non-commercial types of gambling environments to ensure that all British older adults were adequately represented. Study one observed that British older adults were drawn to two types of gambling venues commercial and non-commercial. The positive impacts associated with non-commercial venues were reduced exposure to EGMs and other gambling activities with high event frequencies.

Older adult patrons of non-commercial venues participated in gambling for the same reasons of those that visited commercial venues, for psychological escapism, and age related vulnerabilities including retirement, loneliness, socialisation and health related decline. Furthermore, it was observed that playing bingo regularly, and playing a larger number of different gambling activities, being anxious and lonely were significant risk factors for problem gambling. Therefore, older adults visiting non-commercial venues are less likely to be at risk for problem gambling as those in commercial venues because they are less exposed to electronic types of gambling and play for smaller jackpots. In contrast, players in commercial venues are at an increased risk as they are more likely to have frequent ease of access to EGMs and this type of gambling activity was observed in study two as the strongest risk factor for problem gambling.

Study one has accrued information on the gambling behaviour of older adults identifying the gambling variance within a British ageing gambling culture. As study one embraced an inductive approach and did not rely upon limited international gambling data to identify British older adult gambling motivations; study one has observed the cultural specificity of gambling-related motivations among British older adults contributing to a more complete

understanding of gambling behaviour in an appropriate cultural context. Raylu and Oei (2004) observed that culture, values and beliefs influence gambling participation and warrant further studies in different cultural contexts and among different ethnic groups to understand the phenomenon of gambling among older adults.

Research on British older adult gambling behaviour is currently missing from empirical literature therefore data from study one has addressed this gap. There has been a significant growth in past year gambling participation in British older adults aged 65 years and older (Wardle et al., 2011) and this research may help understand this rise. This thesis observed that British older adults participate in gambling as a mechanism to alleviate distress from psychological and physical lifestyle style changes associated with the ageing process. This thesis has positioned that older adults in Britain are a unique vulnerable group based upon motivation for recreational gambling and their gambling behaviour is identified as having the potential to over-spend if they continue to gamble based upon these types of age-specific vulnerabilities.

5.2.3 Psychological and Physical Health Decline and Gambling Behaviour

Lorains et al, (2011) stated that gambling disorder among older adults is associated with significant comorbidity. Study one observed that motivation for gambling is a positive coping mechanism for dealing with emotional problems. However, the temporal relationships associated with psychological comorbidity and health declines associated with older adult gambling behaviour are not clearly defined across the literature (Petry, 2002; Subramaniam, et al., 2015). Identifying behavioural patterns including motivation and reward has developed a substantive framework to account for gambling behaviour in

British older adults. This will allow for further explorations of these motivational factors and the identification of those leading to risk for problem gambling in future empirical work.

Employing a grounded theoretical approach provided a clearer understanding that psychological comorbidity and poor physical health are not a direct consequence or after effect of gambling behaviour, they are identified as factors related to explain key primary motivations. Put simply, poor psychological and physical health are not only related to consequences associated with problem gambling, they are factors that are also present in the initiation stages of participating in gambling for recreational and social purposes. Therefore, research into the psychological and physical health components of British older adult gamblers has led to a better understanding of the process of gambling behaviour at a primary level. Fundamentally, as this indicated a causal direction, showing that British older adults are motivated by their age related circumstances increasing motivation to participate in gambling, and that there can be negative consequences as a result.

Differentiating between older adults that enjoy the gambling experience from those that have difficulty in maintaining responsible gambling can be challenging (O'Mahony & Ohtsuka, 2015). Therefore, this thesis has made steps to identify key motivations for gambling and understanding the most important risk factors for problem gambling,

Findings from this thesis show that British older adult gamblers are vulnerable to the risk of developing problem and pathological gambling and are likely to trigger or worsen symptoms related to depression and anxiety. Put simply, a combination of poor

psychological and physical health are the driving forces related problem gambling within this cohort; which was also observed within an international study (Petry, 2002). The cumulative findings of the thesis indicate that the psychological and physical sources of stress and negative affectivity were pre-existing before problem gambling emerged, rather than merely emerges as a consequence of problem gambling. Therefore, it is possible that the psychological and physical variables identified may be integral factors in development of a problem gambling screening tool for this population.

Tentatively there appear to be several stages in the development of gambling difficulties for British older adult women, who begin gambling as a social activity that progresses to spending more money gambling than they can afford. Study three firmly identified a stage highlighting how those gambling at a social level progress to gambling alone and having difficulty maintaining responsible gambling. This was demonstrated in the extracts showing the destructive consequences of British older adult women ‘spending too much’, enhanced by ‘environmental facilitation’ such as ease of access to a cash dispenser and combined with the attraction of the gambling venue for ‘peer support’; all factors negatively influenced their responsible gambling intentions. However, many were aware of the signs of potential loss of control in gambling and this was identified as spending more money than they could afford.

The dynamic interplay between poor psychological health and spending too much money gambling is observed as the primary source of vulnerability. Fundamentally, there is a need to pay attention to the role and significance of motivations in female older adult gambling communities. Environmental facilitation, implications of filling voids, effective emotional

escapism and appear to be integral in older women engaging in gambling to an extent that create personal difficulties for them.

5.3 Conclusion and Recommendations

It is concluded that British older adults are at risk for problem gambling based on motivations for gambling participation and their preferences of gambling activity. Factors such as depression and physical (age-related) pain were significantly related to problem gambling in study two and are proposed as important risk factors for problem gambling in this population.

An association between emotional age-related stress and gambling has been demonstrated. The study has shown that motivation to participate in gambling is likely to increase substantially if British older adults' psychological and physical health needs are not readily met in their current social and physical environment. Therefore, to reduce vulnerability in British older adult recreational gamblers it is necessary to attend to the age-related circumstances such as loneliness and their psychological and physical health needs. Furthermore, it is concluded that satisfying psychological and social needs enables older adults to justify their risky behaviour making gambling in older age more socially and individually acceptable.

It is evident that gambling can to an extent be adaptive and facilitative, in terms of helping individuals situationally cope with their ageing circumstances. Fundamentally, there is sufficient evidence within the thesis to recommend that older adult health care providers

regularly screen for problem gambling in patients who disclose that they are experiencing difficulties in terms of age-related psychological and physical stressors.

Findings from this thesis should be interpreted as a first step aimed at providing information to use in informing UK/British older adult care services, as they indicate that older adults in the UK may have age-related risk factors for PG. It is proposed older adults gamblers, and women in particular, are to be more informed through education on the potential harms of gambling, specifically in relation to creating awareness regarding early signs of problem gambling to enable self-identification. Equally, a lack of information on responsible gambling could have detrimental effects for older adults who gamble recreationally to alleviate age-related psychological and physical stressors. This should be of concern to UK policymakers given that older adults, sampled in both commercial and non-commercial gambling environments were found to have higher rates of problem gambling; although it is acknowledged that this is a not random general population sample.

In conclusion this thesis has achieved its research objectives and has explored and created clearer understandings of British based older adult gambling behaviour and motivations. It has identified psychological and physical health factors as predictive risk factors for older adult problem gambling behaviour. Furthermore, it has explored and created clearer understandings of the phenomenological experiences of British older adult women gamblers. Previously this was a heavily under-researched phenomenon and this thesis has informed the literature of discrete or unique risk factors for certain subgroups of older adults within this culture to experience gambling related harm. More importantly this study evaluated findings to gain a clearer understanding of British older adult gambling behaviour in order to suggest effective responsible gambling strategies

References

- Abarbanel, B., L. (2014). Differences in motivational dimensions across gambling frequency, game choice and medium of play in the United Kingdom. *International Gambling Studies*, 14, (3), 472-491. doi: 10.1080/14459795.2014.966131
- Abbott, M. W., & Volberg, R. A. (2000). *Taking the pulse on gambling and problem gambling in New Zealand: A report on phase one of the 1999 National Prevalence Survey*. Wellington: Department of Internal Affairs.
- Abbott, M. W., Volberg, R. A., & Ronnberg, S. (2004). Comparing the New Zealand and Swedish national surveys of gambling and problem gambling. *Journal of Gambling Studies*, 20, (3), 237–258.
- Abbott, M. (2006). Do EGMs and problem gambling go together like a horse and carriage? *Gambling Research*, 18, 1, 7-38.
- Abbott, M., Romild, U., & Volberg, R. A. (2013). Gambling and problem gambling in Sweden: Changes between 1998 and 2009. *Journal of Gambling Studies*, 30, (4), 985-999. doi:10.1007/s10899-013-9396-3
- Adams, Z. W., Kaiser, A. J., Lynam, D. R., Charnigo, R. J., & Milich, R. (2012). Drinking motives as mediators of the impulsivity-substance use relation: Pathways for negative urgency, lack of premeditation, and sensation seeking. *Addictive Behaviors*, 37, 848–855. <http://dx.doi.org/10.1016/j.addbeh.2012.03.016>

Afifi, T. O., Brownridge, D. A., MacMillan, H., & Sareen, J. (2010). The relationship of gambling to intimate partner violence and child maltreatment in a nationally representative sample. *Journal of Psychiatric Research, 44*, (5), 331–337.

Afifi, T. O., Cox, B. J., Martens, P. J., Sareen, J., & Enns, M. W. (2010). Demographic and social variables associated with problem gambling among men and women in Canada. *Psychiatry Research, 178*, 395- 400.

Afif, T. O., Cox, B. J., Marten, P. J., Sareen, J., & Enns, M. W. (2011). The relationship between problem gambling and mental and physical health correlates among a nationally representative sample of Canadian women. *Canadian Journal of Public Health, 101*, (2), 171-175.

Age Concern and the Mental Health Foundation. (2006). *Promoting mental health and well-being in later life*. Available at:
<http://www.mhilli.org/index.aspx?page=stage2promotion.htm> [Accessed October 2014].

Age Concern. (2007). *Improving services and support for older people with mental health problems*. Available at:
<http://www.mhilli.org/documents/Inquiryfinalreport-FULLREPORT.pdf> [Accessed November 2014].

Alberghetti, A., & Collins, P. (2015). Passion for Gambling: A Generation-Specific Conceptual Analysis and Review of Gambling Among Older Adults in Canada. *Journal of Gambling Studies, 31*, (2), 343–358. doi: 10.1007/s10899-013-9425-2.

Allcock, C. C. (1986). Pathological gambling. *Australian and New Zealand Journal of Psychiatry*, 20, 259-265.

American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders, III*. Washington, DC: Author.

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders, IV*. Washington, DC: Author.

American Psychiatric Association. (2000). *The Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.). Washington, DC: Author.

American Psychiatric Association. (2013). *The Diagnostic and Statistical Manual of Mental Disorders*, (5th ed). Washington, DC: Author.

Amey, B. (2001). *Peoples participation in and attitudes to gaming, 1985-2000*: Final results of the 2000 survey. Wellington, New Zealand: Department of Internal Affairs.

Antonucci, T., Birditt, K., & Webster, N. (2010). Social relations and mortality: A more nuanced approach. *Journal of Health Psychology*, 15, (5), 649-659.

Argo, T. R., & Black, D. W. (2004). Clinical characteristics, In J. E. Grant, & M. N. Potenza (Ed.), *Pathological gambling: A clinical guide to treatment* (pp. 39–54).

Arlington. American Psychiatric Publishing.

Ariyabuddhiphongs, V. (2012). Older Adults and Gambling: A review. *International Journal of Mental Health and Addiction*, 10, (2), 297-308.

Arthur, J. N., Williams, R. J., & Belanger, Y. D. (2014). The Relationship between Legal Gambling and Crime in Alberta. *Canadian Journal of Criminology & Criminal Justice*, 56, (1), 49-84. doi: 10.3138/cjccj.2012.E51

Atchley, R. C., & Barusch, A. S. (2004). *Social forces and aging: An introduction to social gerontology*, (372–373). Wadsworth/Thompson Learning, Belmont.

Australian Productivity Commission. (APC). (1999). *Australia's Gambling Industries*. Report No 10, Canberra: Ausinfo.

Australian Productivity Commission. (APC). (2010). *Inquiry Report Gambling*; Report No 50. Available at: <http://www.pc.gov.au/inquiries/completed/gambling-2009/report/gambling-report-volume1.pdf> [Accessed January 2014].

Baer, J. S., MacLean, M.G., & Marlatt, G. A. (1998). Linking etiology and treatment for adolescent substance abuse: towards a better match. In Jessor, R. (Eds.), *New Perspectives on Adolescent Risk Behavior*. Cambridge University Press, NY.

Barnes, G. M., Welte, J. W., Tidwell, M. O., & Hoffman, J. H. (2015). Gambling and substance use: co-occurrence among adults in a recent general population study in the United States. *International Gambling Studies*, 15, (1), 55-71.

Bartz, J. A., & Hollander, E. (2006). Is obsessive-compulsive disorder an anxiety disorder? *Progress in Neuropsychopharmacology and Behavioural Psychiatry*, 30, 338 -352.

Batstra, L., & Frances, A. (2012) Diagnostic inflation: causes and a suggested cure. *Journal of Nervous and Mental Disease*, 200, (6), 474-9.

Battersby, M., Oakes, J., Tolchard, B., Forbes, A., & Pols, R. (2008). *Cognitive behavioral therapy for problem gamblers. In the Pursuit of Winning*. In M.A. Zangeneh, A. Blaszczynski & N.E. Turner (Eds.). The pursuit of winning (pp. 179-197). New York: Springer.

Bazargan, M., Bazargan, S., & Akanda, A. (2001). Gambling habits among aged African Americans. *Clinical Gerontology: Journal of Aging and Mental Health*, 22, 51–62. doi:10.1300/J018v22n03_06

Bechara, A., Damasio, A. R., Damasio, H., & Anderson, S. W. (1994). Insensitivity to future consequences following damage to human prefrontal cortex. *Cognition*, 50, 7-15.

Bechara, A., Tranel, D., & Damasio, H. (2000). Characterisation of the decision-making deficit of patients with ventromedial prefrontal cortex lesions. *Brain*, 123, 2189-2202.

Beck, A.T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561-571.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *BDI-II, Beck Depression Inventory: Manual* (2nd ed.). Boston: Harcourt Brace.

Beecham, J., Knapp, M., Fernandez, J. L., Huxley, P., Mangalore, R., McCrone, P., Snell, T., Winter, B., & Wittenberg, R. (2008). *Age Discrimination in Mental Health services*. Available at: <http://www.pssru.ac.uk/pdf/dp2536.pdf> [Accessed January 2014].

Beekman, A. T., Bremmer, M. A., Deeg, D. J., van Balkom, A. J., Smit, J. H., de Beurs, E., van Dyck, R., & van Tilburg, W. E. (1998). Anxiety disorders in later life: a report from the Longitudinal Aging Study Amsterdam. *International Journal of Geriatric Psychiatry*, *13*, 717-26.

Beekman, A. T., Deeg, D. J., Geerlings, S. W., Schoevers, R. A., Smit, J. H., & van Tilburg, W. (2001). Emergence and persistence of late life depression: a 3-year follow-up of the Longitudinal Aging Study Amsterdam. *Journal of Affective Disorders*, *65*, 131–138. doi: 10.1016/S0165-0327(00)00243-3

Ben-Tovim, D., Esterman, A., Tolchard, B., & Battersby, M. W. (2001). *The Victorian Gambling Screen: Project report*. Melbourne: Victorian Research Panel.

Bergler, E. (1958) *The Psychology of Gambling*. New York: International Universities Press.

Berns, D. (1998). Gambling becoming a problem for more seniors, panel says. Review Journal Online. Cited in C, McKay. Double jeopardy: Older women and problem gambling. *International Journal of Mental Health and Addiction*, 3, 35–53.

Bernstein, D. P., & Fink, L. (1998). *Childhood trauma questionnaire (CTQ): a retrospective self-report* San Antonio, TX: The Psychological Corporation.

Bickel W. K., Jarmolowicz D. P., Mueller E. T., Koffarnus M. N., & Gatchalian, K. M. (2012). Excessive discounting of delayed reinforcers as a trans-disease process contributing to addiction and other disease-related vulnerabilities; emerging evidence. *Pharmacology Therapy*, 143, 287-97.

Billieux, J., Van der Linden, M., Khazaal, Y., Zullino, D., & Clark, L. (2012). Trait gambling cognitions predict near-miss experiences and persistence in laboratory slot machine gambling. *British Journal of Psychology*, 103, 412-427.

doi:10.1111/j.20448295.2011.02083.x

Binde, P. (2009). *Gambling motivation and involvement: A review of social science research* (p. 90). Solna, SE: Swedish National Institute of Public Health.

Blanco, C., Hasin, D. S., Petry, N., Stinson, F. S., & Grant, B. F. (2006). Sex differences in subclinical and DSM-IV pathological gambling: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Psychology & Medicine*; 36, (7), 943–953.

Blanco, C., Potenza, M., Won Kim, S., Ibanez, A., Zaninelli, R., Saiz-Ruiz, J. & Grant, J. (2009). *Psychiatry Research*, 167, 161-168.

Black, D., W., & Moyer, T. (1998). Clinical features and psychiatric comorbidity of subjects with pathological gambling behaviour. *Psychiatric Services*, 9, 1434 –1439.

Blaikie, N. (2007) *Approaches to social enquiry*. Cambridge, Polity.

Blaszczynski, A., & Nower, L. (2002). A pathways model of problem and pathological gambling. *Addiction*, 97, 5, 487-499.

Blaszczynski, A., Ladouceur, A. R., & Shaffer, J. J. (2004). A Science-based framework for responsible gambling: The Reno Model. Science-based framework for responsible gambling: The Reno Model. *Journal of Gambling Studies*, 20, 301-317.

Blaszczynski, A. (2005). Conceptual and methodological issues in treatment outcome research. *Journal of Gambling Studies*, 2, (1), 5-11.

Blaszczynski, A., Collins, P., Fong, D., Ladouceur, R., Nower, L., Shaffer, H. J., Tavares, H., & Venisse, J. L. (2011). Responsible Gambling. General Principles and Minimal Requirements. *Journal of Gambling Studies*. 27, 565-573. doi: 10.1007/s10899-010-9214-0

Blozik, E., Stuck, A. E., Niemann, S., Ferrell, B. A., Harari, D., Renteln-Kruse., Wv, Gillmann, G., Beck, J. C., & Clough-Gorr, K. M. (2007). Geriatric Pain Measure Short

Form: Development and Initial Evaluation. *Journal of the American Geriatrics Society*; 12, 2045-50.

Boggio, P. S., Campanha, C., Valasek, C. A., Fecteau, S., Pascual-Leone, A., & Fregni, F. (2010). Modulation of decision-making in a gambling task in older adults with transcranial direct current stimulation. *European Journal of Neuroscience*, 31, 593-597.
doi:10.1111/j.1460-9568.2010.07080.x

Bondolfi, G., Jemann, F., Ferrero, F., Zullino, D., & Osiek, C. H. (2008). Prevalence of pathological gambling in Switzerland after the opening of casinos and the introduction of new preventive legislation. *Acta Psychiatrica Scandinavica*, 117, 236-239.

Boreham, P., Dickerson, M., & Harley, B. (1996). *The extent, nature and predictors of problems associated with machine gaming in Queensland: A survey-based analysis and assessment*. Brisbane, Queensland Government, (ISBN 0 7242 7526 6).

Boreham, P., Laffan, W., Johnston, J., Southwell, J., & Tighe, M. (2006). *Responsible gambling strategy for older Queenslanders: Final report (J5003)*. Queensland: The University of Queensland Social Research Centre. Available at:
<https://publications.qld.gov.au/storage/f/2014-06-19T06%3A43%3A57.283Z/a-responsible-gambling-strategy-for-older-queenslanders.pdf> [Accessed 3rd May, 2016].

Bortz, W, M. (2002). A conceptual framework of frailty: A review. *Journals of Gerontology Series A, Biological Sciences and Medical Sciences*: 57, (5), 283-288.

- Botterill, E., Gill, P. R., McLaren, S., & Gomez, R. (2015). Marital status and problem gambling among Australian older adults: The mediating role of loneliness. *Journal of Gambling Behaviour, 31*, (3), 1-12. doi: 10.1007/s10899-015-9575-5
- Bottesi, G., Ghisi, M., Ouimet, A. J., Tira, M. D., & Sanavio, E. (2015). Compulsivity and impulsivity in pathological gambling: Does a dimensional–trans diagnostic pproach add Clinical Utility to DSM-5 Classification? *Journal of Gambling Studies, 31*, 825-847.
- Boughton, R., & Brewster, J. (2002). *Voices of women who gamble in Ontario: A survey of women’s gambling in Ontario: A survey of women’s gambling. Barriers to Treatment and Treatment Service Needs*. Toronto, ON: Ministry of Health and Long-Term Care.
- Boughton, R., & Falenchuk, O. (2007). Vulnerability and comorbidity factors of female problem gambling. *Journal of Gambling Studies, 23*, 323–334.
- Bower, P., Knowles, S., Coventry, P. A., & Rowland, N. (2011). Counselling for mental health and psychosocial problems in primary care. *Cochrane Database of Systematic Reviews, 9*. 1025. <http://dx.doi.org/10.1002/14651858.CD001025.pub3>
- Boyer, M., & Dickerson, M. (2003). Attentional bias and addictive behaviour: Automaticity in a gambling-specific modified Stroop task. *Addiction, 98*, 61-70.
- Boyle, M. (1991). Cited in Harper, D. J. and Warner, S. J. (1993). Discourse, social constructionism and clinical psychology. *Changes 11*, 72–79.

- Bradburn, N. M., & Caplovitz, D. (1965). *Reports on happiness*. Chicago: Aldine.
- Brand, M., & Markowitsch, H. J. (2010a). Aging and decision-making: A neurocognitive perspective. *Gerontology*, *56*, 319-324.
- Breen, R. B., & Zuckerman, M. (1999). 'Chasing' in gambling behaviour: personality and cognitive determinants. *Personality and Individual Differences*, *27*, 1097-1111.
- Breen, R. B., & Zimmerman, M. (2002). Rapid onset of pathological gambling in machine gamblers. *Journal of Gambling Studies*, *18*, 31- 43.
- Brener, N. D., Billy, J. O. G., & Grady, W. R. (2003). Assessment of factors affecting the validity of self-reported health-risk behaviour among adolescents: evidence from the scientific literature. *Journal of Adolescent Health*, *33*, 436- 457.
- Brown, S., & Coventry, L. (1997). *Queen of hearts: The needs of women with gambling problems*. Melbourne: Financial and Consumer Rights Council.
- Brunborg, G. S., Johnsen B. H., Mentzoni, R. A., Myrseth, H., Molde, H., Lorvik, I. M., Meen, I., Hellandsjø, B. E. T., & Ståle, P. (2012). Diminished aversive classical conditioning in pathological gamblers. *Addiction*, *107*, 1660-1666.
- Bryman, A. (1988). *Quality and quantity in social research*. London: Unwin Hyman.

Burge, A. N., Pietrzak, R. H., Molina, C. A., & Petry, N. M. (2004). Age of gambling initiation and severity of gambling and health problems among older adult problem gamblers. *Psychiatric Services, 55*, 1437-1439.

Burns, R. B. (1980). *Essential Psychology*. Lancaster: MTP Press.

Burroughs, H., Lovell, K., Morley, M., Baldwin, R., Burns, A., & Chew-Graham, C. (2006). 'Justifiable depression': How primary care professionals and patients view late-life depression? A qualitative study. *Family Practice, 23*, (3), 369–377.

<http://dx.doi.org/10.1093/fampra/cmi115>

Canale, N., Vieno, A., Griffiths, M. D., Rubaltelli, E., & Santinello, M. (2015). *How do impulsivity traits influence problem gambling through gambling motives? The role of perceived gambling risk/benefits. Psychology of Addictive Behaviours, 29*, (3), 813-823.

Care Services Improvement Partnership. (2005). *Everybody's Business. Integrated mental health services for older adults: a service development guide*; Available at:

<http://www.olderpeoplesmentalhealth.csip.org.uk/everybodys-business.html> [Accessed

January 2014].

Carroll, D., & Huxley, J. (1994). Cognitive, dispositional, and psychophysiological correlates of dependent slot machine gambling in young people. *Journal of Applied Social Psychology, 24*, (12), 1070-1083.

Cattell, R. B. (1943). The description of personality. I. Foundations of trait measurement. *Psychology review*, 50, 559-594.

Cavedini, P., Riboldi, G., Keller, R., D'Annunzi, A., & Bellodi, L. (2002). Frontal lobe dysfunction in pathological gambling patients, *Biological psychiatry*, 51, 334-341.

Cavion, L., Wong, C., & Zangeneh, M. (2008). Gambling: A sociological perspective. In M. Zangeneh., A. Blaszczynski, & N. E Turner (Eds.), *In the pursuit of winning: Problem gambling theory, research and treatment* (pp. 95–117). New York: Springer.

Chantal, Y., Vallerand, R. J., & Vallieres, E. F. (1994). Construction et validation de l'Echelle de Motivation Relative aux Jeux de Hasard et d'Argent [The development and validation of the Gambling Motivation Scale (GMS)]. *Society and Leisure*, 17, 189-212.

Chantral, Y., Vallerand, R. J., & Vallieres, E. F. (1995). Motivation and gambling involvement. *The Journal of Social Psychology*, 135, 6, 755-763.

Chantal, Y., & Vallerand, R. J. (1996). Skill versus luck: A motivational analysis of gambling involvement. *Journal of Gambling Studies*, 12, 407- 418.

Charmaz, K. (2000). *Grounded theory: Objectivist and constructivist methods*. In N. K. Denzin & Y. S. Lincoln (Eds.). *Handbook of qualitative research* (2nd ed), (p.p 509-536). Thousand Oaks, CA: Sage.

Charmaz, K. (2006). *Constructing Grounded Theory, A practical guide through qualitative analysis*. London: Sage.

Charmaz, K. (2008a). *Grounded theory as an emergent method*. In S. Nagy Hesse-Biber & P. Leavy (Eds.), *Handbook of emergent methods* (p.p 155-170). New York: Guilford Press.

Chase, H. W., & Clark, L. (2010). Gambling severity predicts midbrain response to near-miss outcomes. *Journal of Neuroscience*, *30*, (18), 6180 - 6187.

Chen, S. C., Shoemaker, S., & Zemke, D. M. V. (2013). Segmenting slot machine players: A factor cluster analysis. *International Journal of Contemporary Hospitality Management*, *25*, 23 - 48. doi:10.1108/09596111311290200

Chhabra, D. (2009). Are late life gamblers a lucrative market in gambling tourism? A case study of Iowa, United States. *Journal of Hospitality & Tourism Research*, *33*, (2), 245-254.

Chou, K. L., & Afifi, T. O. (2011). Disordered (pathologic or problem) gambling and axis I psychiatric disorders: results from the National Epidemiologic Survey on Alcohol and Related Conditions, *American Journal of Epidemiology*; *173*, 1289–1297.

Chou, K. L., Mackenzie, C. S., Liang, K., & Sareen, J. (2011). Three-year incidence and predictors of first-onset of DSM-IV mood, anxiety, and substance use disorders in older

adults: results from Wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry*; 72, 144–155.

Clare, L., Woods, R. (2003). Cognitive rehabilitation and cognitive training for early-stage Alzheimer's disease and vascular dementia. *Cochrane Database of Systematic Reviews*, (p.p 1002). doi: 10.1002/ 14651858.CD003260

Clarke, D. (2004). Impulsiveness, locus of control, motivation and problem gambling. *Journal of Gambling Studies*, 20, (4), 319-345.

Clarke, D. (2005). Motivational differences between slot machine and lottery players. *Psychological Reports*. 96, (3), 843-848.

Clarke, D. (2006). Impulsivity as a mediator in the relationship between depression and problem gambling. *Personality and Individual Differences*, 40, 5-15.

Clarke, D. (2008). Older adults' gambling motivation and problem gambling: A comparative study. *Journal of Gambling Studies*, 24, (2), 175-192.

Clarke, D., & Clarkson, J. (2008). Gambling behaviour and motivation in an urban sample of older adult gamblers. *New Zealand Journal of Psychology*, 37, (1), 17-27.

Clarke, D., & Clarkson, J. (2009). A preliminary investigation into motivational factors associated with older adult's problem gambling. *International Journal of Mental Health and Addiction*, 7, 1, 12-28. doi: 10.1007/s11469-007-9079-3

Clark, L., Lawrence, A. J., Astley-Jones, F., & Gray, N. (2009). Gambling near-misses enhance motivation to gamble and recruit win-related brain circuitry. *Neuron*, *61*, 481–490.

Clark, L. (2014). Disordered gambling; the evolving concept of behavioural addiction. *Annals of the New York Academy of Sciences*, 46– 61.

Cohen, L., & Heim, K. (1994). Island living: the experience of loneliness in a psychiatric hospital. *Applied Nursing Research*, *7*, 7–13.

Collins, P., Blaszczynski, A., Ladouceur, R., Shaffer, H. J., Fong, D., & Venisse, J. L. (2015). Responsible Gambling: Conceptual Considerations. *Gaming Law review and Economics*, *19*, (8), 594 -599. doi: 10.1089/glre.2015.1985

Conrad, P. (1990). Qualitative research on chronic illness: A commentary on method and conceptual development. *Social Science and Medicine*, *30*, 1257-1263.

Constanca, P., Salma, A., & Shah, E. (2006). Psychological distress, loneliness and disability in old age. *Psychology, Health & Medicine*; *11*, (2), 221-232.

Conwell, Y., Duberstein, P. R., & Caine, E. D. (2002). Risk factors for suicide in later life. *Biological Psychiatry*, *52*, 193–204.

Cooley, C. H. (1902). *Human nature and social order*. New York; Shocken.

- Cooper, N. J. (2002). Stroop task reaction time as an indicator of gambling among a college student population. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 62 (10-B), 4777.
- Corless, T., & Dickerson, M. (1989). Gamblers' self-perceptions of the determinants of impaired control. *British Journal of Addiction*, 84, 1527-1537.
- Corney, R., & Davis, J. (2010). The attractions and risks of internet gambling for women: A qualitative study. *Journal of Gambling Issues*, 24, 121–139.
- Corney, R., & Davis, J. (2010). Female frequent Internet gamblers: a qualitative study investigating the role of family, social situation and work. *Community, work and Family*, 13, (3), 291-309. doi:10.1080/13668803.2010.488088
- Coskunpinar, A., & Cyders, M. A. (2012). Mediation-moderation analysis of problematic alcohol use: The roles of urgency, drinking motives, and risk/benefit perception. *Addictive Behaviors*, 37, 880-883. <http://dx.doi.org/10.1016/j.addbeh.2012.03.014>
- Côté, D., Caron, A., Aubert, J., Desrochers, V., & Ladouceur, R. (2003). Near wins prolong gambling on a video lottery terminal. *Journal of Gambling Studies*, 19, 433-438.
- Cotte, J. (1997). Chances, trances, and lots of slots: Gambling motives and consumption experiences. *Journal of Leisure Research*, 29, 4, 380-406.

Cox, B., Yu, N., Afifi, T., & Ladouceur, R. (2005). A national survey of gambling problems in Canada. *Canadian Journal of Psychiatry*, 50, 4, 213-217.

Cunningham-Williams, R. M., Gruzza, R. A., Cottler, L. B., Womack, S. B., Books, S. J., Przybeck, T. R. Spitznagel, E. L., & Cloninger. C. R. (2005). Prevalence and predictors of pathological gambling: Results from the St. Louis personality, health and lifestyle (SLPHL) study. *Journal of Psychiatric Research*, 39, (4), 377-90.
<http://dx.doi.org/10.1016/j.jpsychires.2004.09.002>.

Craven, S. M., & Parker, M. (2002). *Outreach mental health services for the elderly: The impact upon utilization in a Medicare population in Minnesota from 1992-1995*. Available at: <http://www.optumcare.com/research/articles/outreach/html> [Accessed 30th October, 2014].

Cyders, M. A., & Smith, G. T. (2007). Mood-based rash action and its components: Positive and negative urgency. *Personality and Individual Differences*, 43, 839-850.
<http://dx.doi.org/10.1016/j.paid.2007.02.008>

Cyders, M. A., & Smith, G. T. (2008). Clarifying the role of personality dispositions in risk for increased gambling behavior. *Personality and Individual Differences*, 45, 503-508.
<http://dx.doi.org/10.1016/j.paid.2008.06.002>

Dalley, J. W., Everitt, B. J., & Robbins, T. W. (2011). Impulsivity, compulsivity, and top-down cognitive control. *Neuron*, 69, 680-694.

DeCaria, C., Hollander, M. E., Begaz, T., Schmeidler, J., Wong, C. M., Cartwright, C. & Mosovich, S. (1998). *Reliability and validity of a pathological gambling modification of the Yale-Brown Obsessive Compulsive Scale (pathological gambling-YBOCS): preliminary findings*: Paper presented at the 12th National Conference on Problem Gambling, Las Vegas, NV.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum.

De Jong, Gierveld, J., & van Tilburg, T., G. (2006). A 6 item scale for overall emotional and social loneliness; confirmatory tests of survey data. *Research on aging*, 28, 582-598. doi:10.1177/0164027506289723

Delayer, M. Sinz, H. Zamarian, L., & Benke, T. (2007). Decision-making with explicit and stable rules in mild Alzheimer's disease. *Neuropsychologia*, 45, 1632-1641.

Delfabbro, P. (2012). *Australasian gambling review* (5th Eds.). Adelaide: Independent Gambling Authority.

Delfabbro, P. H. (2013). Behavioural risk factors in disordered gambling and treatment implications. In; D. C. S., Richard, A., Blaszczynski & L., Nower. *The Wiley-Blackwell Handbook of Disordered Gambling*; Chichester, UK; West Sussex, PO19 8SQ, UK. doi:10.1002/9781118316078.ch16

Delfabbro, P. (2009). *Australian gambling review*, (4th Eds), (1992–2008). Adelaide: Independent Gambling Authority.

Delfabbro, P. H., Lambos, C., King, D. L., & Puglies, S. (2009b). Knowledge and beliefs about gambling in Australian secondary school students and their implications for education strategies. *Journal of Gambling Studies*, 25, 523-539.

Delfabbro, P. H., & Winefield, A. H. (1999). Poker machine gambling: An analysis of within session characteristics. *British Journal of Psychology*, 90, 425-439.

Denburg, N.L., Tranel, D., & Bechara, A. (2005). The ability to decide advantageously declines prematurely in some normal older persons. *Neuropsychologia*, 43, 7, 1099-1106.

Denburg, N. L., Cole, C. A., Hernandez, M., Yamada, T. H., Tranel, D., Bechara, A., & Wallace, R. B. (2007). The orbitofrontal cortex, real-world decision making, and normal aging. *Annals of the New York Academy of Sciences*, 1121, 480-498.

doi:10.1196/annals.1401.03

Denis, C., Fatseas, M., & Auriacombe, M. (2012). Analyses related to the development of *DSM-5* criteria for substance use related disorders: An assessment of pathological gambling criteria. *Drug and Alcohol Dependence*, 122, 22-27.

doi:10.1016/j.drugalcdep.2011.09.006

Department of Health. (2005a). *Securing Better Mental Health for Older Adults*. Available at:http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4114989 [Accessed September 2014].

Derevensky, J. L., Sklar, A., Gupta, R., Messerlian, C., Laroche, M., & Mansour, S. (2007). *The effects of gambling advertisements on child and adolescent gambling attitudes and behaviors*. Montreal, Canada: International Centre for Youth Gambling Problems and High-Risk Behaviors. Report prepared for Fonds de recherche sur la société et la culture, Quebec, Canada.

Derevensky, J. L., Sklar, A., Gupta, R., & Messerlian, C. (2010). An empirical study examining the impact of gambling advertisements on adolescent gambling attitudes and behaviors. *International Journal of Mental Health and Addiction*, 8, 21–34.
<http://dx.doi.org/10.1007/s11469-009-9211-7>

Derevensky, J. L., & Gainsbury, S. M. (2015). Social casino gaming and adolescence; Should we be concerned and is regulation in sight? *International Journal of Law and Psychiatry*. [Epub ahead of print] doi: 10.1016/j.ijlp.2015.08.025.

Desai, R. A., Maciejewski, R. K., Dausey, D. J., Caldarone, B. J., & Potenza, M. N. (2004). Health correlates of recreational gambling in older adults. *American Journal of Psychiatry*, 161, 1672-1679.

Desai, R. A., Desai, M. M., & Potenza, M. N. (2007). Gambling, health, and age: Data from the national epidemiologic survey on alcohol and related conditions. *Psychology of Addictive Behaviours, 21*, (4), 431–440.

Desai, R. A., & Potenza, M. N. (2008). Gender differences in the associations between past-year gambling problems and psychiatric disorders. *Society of Psychiatry and Psychiatric Epidemiology, 43*, 173–183.

Dewing, J. (2007). Participatory research. A method for process with persons who have dementia. *Dementia, 6*, (1), 11-25.

Dickerson, M. (1990). Gambling: the psychology of a non-drug compulsion, *Drug and Alcohol Review, 9*, 187–199.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71–75.

DiStefano, C., & Morgan, G. (2011). Examining classification criteria: A comparison of three cut score methods. *Psychological Assessment, 23*, (2), 354-363.

Dixey, R. (1987). It's a great feeling when you win: Women and bingo. *Leisure Studies, 6*, 199-214.

- Dixon, M. J., Graydon, C., Harrigan, K. A., Wojtowicz, L., Siu, V., & Fugelsang, J. A. (2015). The allure of multi-line games in modern slot machines. *Addiction*. Available prepublication online at doi:10.1111/add. 12675
- Dixon, J., Harrigan, K., Jarick, M., MacLaren, V., Fugelsang, J., & Sheepy, E. (2011). Psychophysiological arousal signatures of near-misses in slot machine play. *International Gambling Studies, 11*, 393–407.
- Dixon, M. J., MacLaren, V., Jarick, M., Fugelsang, J. A., & Harrigan, K. A. (2013). The frustrating effects of just missing the jackpot: slot machine near-misses trigger large skin conductance responses, but no post reinforcement pauses. *Journal of Gambling Studies, 29*, 661- 674.
- Dohrenwend, B. P. (1995). The problem of validity in field studies of psychological disorders revisited. In M. T. Tsuang, M. Tohen, & G.E.P. Zahner. (Eds). *Textbook in psychiatric epidemiology*, (pp. 3-22). New York: John Wiley & Sons.
- Donnellan, M, B., & Robins, R, W. (2010). Resilient, Over controlled, and Under Controlled Personality Types: Issues and Controversies. *Social and Personality Psychology Compass. 4*, (11), 1070-1083. doi: 10.1111/j.1751-9004.2010.00313.x
- Dowling, N., Smith, D., & Thomas, T. (2005). Electronic gaming machines: Are they the “crack-cocaine” of gambling? *Addiction, 100*, 33-45.

Dowling, N., Smith, D., & Thomas, T. (2009). The family functioning of female pathological gamblers. *International Journal of Mental Health and Addiction*, 7, (1), 29-44. doi:10.1007/s11469-007-9126-0.

Dowling, N. A. (2013). The cognitive-behavioural treatment of female problem gambling. In D. Richard, A. Blaszczynski, & L. Nower (Eds.), *The Wiley-Blackwell handbook of disordered gambling* (pp. 225–250). West Sussex: John Wiley and Sons Ltd.

Dyall, L., Tse, S., & Kingi, A. (2009). Cultural icons and marketing of gambling. *International Journal of Mental Health and Addiction*, 7, 84–96. doi:10.1007/s11469-007-9145-x.

Eatough, V., & Smith, J. A. (2006). I was like a wild wild person: Understanding feelings of anger using interpretative phenomenological analysis. *British Journal of Psychology*, 97, 483-498.

Ejova, A., Delfabbro, P. H., & Navarro, D. J. (2015). Erroneous Gambling-Related Beliefs as Illusions of Primary and Secondary Control: A Confirmatory Factor Analysis. *Journal of Gambling Studies*, 31, 133-160. doi:10.1007/s10899-013-9402-9

Emond, M. S., & Marmurek, H. H. C. (2010). Gambling related cognitions mediate the association between thinking style and problem gambling severity. *Journal of Gambling Studies*, 26, 257–267.

Engel, R. J., & Rosen, D. (2015). Pathological gambling and treatment outcomes for adults age 50 or older in methadone maintenance treatment. *Journal of Gerontological Social Work*, 58, 3, 306-314. doi: 10.1080/01634372.2014.960989

Erickson, E. H. (1980). *Identity and the life cycle*. New York: Norton.

Erickson, L., Molina, C. A., Ladd, G. T., Pietrzak, R. H., & Petry, N. M. (2005). Problem and pathological gambling are associated with poorer mental and physical health in older adults. *International Journal of Geriatric Psychiatry*, 20, (8), 754–759.

Fassinger, R. (2005). Paradigms, praxis, problems, and promise: Grounded theory in counseling psychology research. *Journal of Counselling Psychology*, 52, (2), 156-166.

Fein, G., McGillivray, S., & Finn, P. (2007) Older adults make less advantageous decisions than younger adults: cognitive and psychological correlates. *Journal of the International Neuropsychology Society*. 13, 480–489.

Fessler, J. L. (1996). Gambling away the golden years. *Wisconsin Medical Journal*, 95, 618–619.

Fellows, L. K., & Farah, M. J. (2007). The role of the ventromedial prefrontal cortex in decision making poor. Judgement under uncertainty or judgement per se? *Cerebral cortex*, 11, 2669 -2674.

Ferentzy, P., & Turner, N. E. (2012). Morals, medicine, metaphors, and the history of the disease model of problem gambling. *Journal of Gambling Issues*, 27.

doi: <http://dx.doi.org/10.4309/jgi.2012.27.4>

Ferentzy, P., Skinner, W. J. W., & Matheson, F. I. (2013). Illicit drug use and problem gambling. *Addiction*, 13, doi:10.1155/2013/342392.

Ferrell, B. A., Stein, W. M., & Beck, J. C. (2000). The Geriatric Pain Measure: Validity, reliability and factor analysis. *Journal of the American Geriatrics Society*; 48, 1669-1673.

Ferris, J., Wynne, H., & Single, E. (1998). *Measuring problem gambling in Canada*
Draft Final Report for the Inter-Provincial Task Force on Problem Gambling Canadian
Centre for Substance Abuse, Canada.

Ferris, A., & Wynne, H. (2001). *The Canadian Problem Gambling Index: Final report*.
Ottawa: Canadian Centre on Substance Abuse.

Ferster, C. B., & Skinner, B. F. (1957). *Schedules of reinforcement*. New York: Appleton-Century-Crofts.

Fessler, J. L. (1996). Gambling away the golden years. *Wisconsin Medical Journal*, 95, 618–619.

Fineberg, N. A., Potenza, M. N., Chamberlain, S. R., Berlin, H. A., Menzies, L., Bechara, A., & Hollander, E. (2010). Probing compulsive and impulsive behaviours, from animal models to endophenotypes: A narrative review. *Neuropsychopharmacology*, 35, 591–604.

First, B. M., & Pincus, A. (2004). *DSM-IV-TR Guidebook* (Rev. ed) Arlington, VA: American Psychiatric Publishing.

Fisher, S. (1993). The pull of the fruit machine: A sociological typology of young players. *The Sociological Review*, 4, (3), 446–474.

Fisher, S. (2000). Developing the DSM-IV-DSM-IV criteria to identify adolescent problem gambling in non-clinical populations. *Journal of Gambling Studies*, 16, 253–273

Fjell, A. M., Walhovd, K. B., Fennema-Notestine, C., McEvoy, L. K., Hagler, D. J., Holland, Brewer, J. B., & Dale, A. M. (2009). One-year brain atrophy evident in healthy aging. *Journal of Neuroscience*, 29, (48). doi: 10.1523/JNEUROSCI.3252-09.2009

Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science and Medicine*, 45, 1207 - 1221.

Footitt, J., & Anderson, D. (2012). Associations between perception of wellness and health-related quality of life, comorbidities, modifiable lifestyle factors and demographics in older Australians. *Australasian Journal on Ageing*, 31, 22–27.

Fontana, A., & Frey, J.H. (2005). The interview: From neutral stance to political involvement. In Denzin, N.K., & Lincoln, Y.S. (eds.), *The Sage Handbook of Qualitative Research*. (3rd ed). Thousand Oaks, CA: Sage, (p.p 695-728).

Forrest, D., & McHale, I. G. (2012). Gambling and problem gambling among young adolescents in Great Britain. *Journal of Gambling Studies*, 28, 607-622.

doi:10.1007/s10899-011-9277-6

Fortune, E. F., & Goodie, A. S. (2012). Cognitive distortions as a component and treatment focus of pathological gambling: A review. *Psychology of Addictive Behaviours*, 26, (2).

doi:10.1037/a0026422

Fowler P. (1997). Addiction crisis stage comes quick for slot players. Executive Director, National Council on Problem Gambling. In *The Mississippi Sun Herald*, November 25th, 1997. Available at: <http://www.nsgamingfoundation.org/articlesReports/windsorscreen.pdf>

Fowler, P. (2000). *Think tank on older adults and gambling*. Resource document. Florida council on compulsive gambling. resource document. Cited in; Alberghetti, A., & Collins, P., Collins. (2015). Passion for Gambling: A generation-specific conceptual analysis and review of gambling among older adults in canada. *Journal of Gambling Studies*, 31, (2), 343–358. doi: 10.1007/s10899-013-9425-2

Francis, K. L., Dowling, N. A., Jackson, A. C., Christensen, D. R., & Wardle, H. (2015). Gambling motives: Application of the reasons for gambling questionnaire in an Australian population survey. *Journal of Gambling Studies*, 31, (3), 807-823.

Fraser, J. M., Frisch, G. R., Govoni, R. (2004). The Windsor Gambling Screen for Older Adults: Initial steps in developing a gambling screen for older adults. *Gambling Research*, 16, 8-27.

Fredrickson, B. L. (2003). The value of positive emotions: The emerging science of positive psychology is coming to understand why it's good to feel good. *American Scientist*, *91*, 330-335.

Fried, L. P., Ferrucci, L., Darer, J., Williamson, J. D., & Anderson, G. (2004). Untangling the concepts of disability frailty, and comorbidity: Implications for improved targeting and care. *Journal of Gerontology Series A, Biological Sciences and medicine*; *59*, (3), 249-254.

Friedman, B. (2000). *Designing Casinos to dominate the competition*. The Institute for the study of Gambling and commercial Gaming, College of Business Administration, University of Nevada, Reno.

Gallagher, P. (2013). Addiction soars as gambling hits £2bn mark. *Independent* (online). Available at: <http://www.independent.co.uk/news/uk/home-news/addiction-soars-as-online-gambling-hits-2bn-mark-8468376.html> [Accessed on 22nd October, 2015]

Galetti, C., de Alvarenca, P. G., de Andrade, A. G., & Tavares, H. (2008). Gambling and substance use by the elderly: A review of the literature. *Revista de Psiquiatria Clinica*, *35*, (1), 39–43.

Gambling Commission, United Kingdom. (2012). *Survey data on public perceptions of gambling*. Available <http://www.gamblingcommission.gov.uk/pdf/Survey%20data%20on%20public%20perceptions%20of%20gambling%20-%20January%202012.pdf> [Accessed 20th December, 2015]

Gambling Commission, United Kingdom. (2013). *Industry statistics: April 2009 to September 2012*. Birmingham: Gambling Commission. Available <http://www.gamblingcommission.gov.uk/Home.aspx> [Accessed on 22nd October 2014].

Gambling Commission, United Kingdom. (2014). *Gambling Sectors*. Available at: http://www.gamblingcommission.gov.uk/gambling_sectors.aspx [Accessed on 22nd October, 2015].

Gambling Commission, United Kingdom. (2015). *The Gambling Commission Annual review 2014-15*. Available at: <http://www.gamblingcommission.gov.uk/Publications-consultations/Publications-consultations.aspx> [Accessed on 22nd October, 2015].

Garrick, I., R. (2014). Gambling motivation and psychosocial outcomes in older adults: A multi-groups analysis of the impact of age, gender and type of gambling. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 74, 7-B.

Garrido, M. M., Kane, R. L., Kaas, M., & Kane, R. A. (2011). Use of mental health care by community-dwelling older adults. *Journal of the American Geriatrics Society*, 59, (1), 50–56 <http://dx.doi.org/10.1111/j.1532-5415.2010.03220.x>

Gebauer, L., LaBrie, R., & Shaffer, H. J. (2010). Optimizing DSM-IV-TR classification accuracy: A brief biosocial screen for detecting current gambling disorders among gamblers in the general household population. *Canadian Journal of Psychiatry*, 55, (2), 82–90.

Gierveld, J. (1998). A review of loneliness: Concept and definitions determinants and consequences. *Reviews in Clinical Gerontology*, 8, 73-80.

Giddens, J. L., Stefanovics, E., Pilver, E. C., Desai, R., & Potenza, M. N. (2012). Pathological gambling severity and co-occurring psychiatric disorders in individuals with and without anxiety disorders in a nationally representative sample. *Psychiatry Research*, 199, 58–64.

Giladi, N., Weitzman, N., Schreiber, S., Shabtai, H., & Peretz, C. (2007) New-onset heightened interest or drive for gambling, eating, shopping or sexual activity in patients with Parkinson's disease. The role of dopamine agonist treatment and age at motor symptoms onset. *Journal of psychopharmacology*, 21, 501-506.

Glaser, B. (1990). *Basics of qualitative research techniques and procedures for developing grounded theory (2nd edition)*. Sage Publications. London.

Godfrey, M., Townsend, J., Sur, C., Boyle, G., & Brooker, D. (2005). *Prevention and service provision: mental health problems in later life*: Final report; Leeds Institute of Health Sciences, Leeds University.

Goodie, A. S., & Fortune, E. F. (2013). Measuring cognitive distortions in pathological gambling: Review and meta-analyses. *Psychology of Addictive Behaviours*. 3, 730-43. doi:10.1037/a0031892.

Goodie, A. S., MacKillop, J., Miller, J. D., Fortune, E. E., Maples, J., Lance1, C. E., & Campbell, W. K. (2013). Evaluating the south oaks gambling screen with dsm-iv and DSM- 5 criteria: results from a diverse community sample of gamblers; *Assessment*, 20, (5), 523-531. doi:10.1177/1073191113500522

Gosker, E. (1999). The marketing of gambling to the elderly. *Elder Law Journal*, 7, 185-190.

GOV.UK (2014). *Retirement Age*. Available at: <https://www.gov.uk/retirement-age>

Govoni, R., Frisch, G.R., & Johnson, D. (2001). *A community effort: Ideas to action. Understanding and preventing problem gambling in seniors*; University of Windsor, Problem Gambling Research Group, Windsor, Canada.

Granero, R., Penelo, E., Stinchfield, R., Fernandez-Aranda, F., Savvidou, L, G., Fröberg, F., Aymamí, N., Gómez-Peña, M., Pérez-Serrano, M., del Pino-Gutiérrez, A., Menchón, J. M., & Jiménez-Murcia, S. (2014). Is pathological gambling moderated by age? *Journal of Gambling Studies*, 30, 475 - 492.

Grant, K. (2002). *GBA: Beyond the red queen syndrome*. Cited in C, McKay, C. Double jeopardy: Older women and problem gambling. *International Journal of Mental Health and Addiction*, 3, 35–53.

Grant, J. E., & Kim, S.W. (2001). Demographic and clinical features of 131 adult pathological gamblers, *Journal of Clinical Psychiatry*, 62, 957

Grant, J., & Kim, S. (2002). Gender differences in pathological gamblers seeking medication treatment. *Comprehensive Psychiatry*, *43*, (1), 239–247.

Grant, J. E., Kim, S. W., & Brown (2001). Characteristics of geriatric patients seeking medication treatment for pathological gambling disorder. *Journal of Geriatric Psychiatry and Neurology*, *14*, 125-129. doi:1177/089198870101400305

Grant, J. E., Stitt, B., Giacomassi, D., & Nichols, M. (2003). Gambling among older adults: A comparative analysis. *Experimental Aging Research*, *29*, 189–203.

Grant, J. E., & Grosz, R. (2004). Pharmacotherapy outcome in older pathological gamblers. A preliminary investigation. *Journal of Geriatric Psychiatry and Neurology*, *17*, (1), 9–12.

Grant, J. E., & Potenza, M. N. (2006). Compulsive aspects of impulse-control disorders. *Psychiatric Clinics of North America*, *29*, 539–551.

Grant, J. E., Kim, S. W., Odlaug, B. L., Buchanan, S. N., & Potenza, M. N. (2009). *Journal of Psychiatric Research*. *43*, (40), 380-7. doi: 10.1016/j.jpsychires.2008.04.005.

Gray, J. A. (1987). *The Psychology of fear and stress* (2nd ed). New York: Cambridge University Press.

Grbich, C. (2007). *Qualitative data analysis*. Thousand Oaks, CA: Sage.

Griffiths, M. D. (1995). *Adolescent Gambling*. London: Routledge.

Griffiths, M. D. (1995). The role of subjective mood states in the maintenance of fruit machine gambling behaviour. *Journal of Gambling Studies*, *11*, 123–135.

Griffiths, M. D. (2001). Internet gambling: Preliminary results of the first UK prevalence study. *Electronic Journal of Gambling Issues*, (5) Available at: <http://jgi.camh.net/loi/jgi>

Griffiths, M. D. (2003). Adolescent gambling: Risk factors and implications for prevention, intervention, and treatment. In D. Romer (Ed), *Reducing adolescent risk: Toward an integrated approach* (pp. 223-238). Thousand Oaks, CA: Sage.

Griffiths, M. D. (2003). Internet gambling: issues, concerns, and recommendations. *CyberPsychology & Behavior*, *6*, 557–568.

Griffiths, M. D., & Delfabbro, P. (2001). The biopsychosocial approach to gambling: Contextual factors in research and clinical interventions. *Journal of Gambling Issues*, *5*, 1-33.

Griffiths, M. D., & Sparrow, P. (1996). Funding fruit machine addiction: The hidden crime. *Probation Journal*, *43*, 211-213.

Grun, L., & McKeigue, P. (2000). Prevalence of excessive gambling before and after introduction of a national lottery in the United Kingdom: Another example of the single distribution theory. *Addiction, 95*, (6), 959-966.

Gupta, R. & Derevensky, J. (1998a). An empirical examination of Jacob's General Theory of Addictions: Do adolescent gamblers fit the theory? *Journal of Gambling Studies, 14*, 17-49.

Gupta, R., & Derevensky, J. L. (1998). Adolescent gambling behaviour: A prevalence study and examination of the correlates associated with problem gambling. *Journal of Gambling Studies, 14*, 319-345.

H2 Gambling Capital, & Odo. (2013). *There's nothing virtual about the opportunity in real-money gambling: Opportunities for game developers in regulated real-money online gambling*. Gibraltar. Available at:
<http://calvinayre.com/2013/05/10/business/future-global-online-gambling-according-to-h2-gambling-capital-odobo/> [Accessed October 2014).

Habib, R., & Dixon, M. R. (2010). Neurobehavioral evidence for the "near-miss" effect in pathological gamblers. *Journal of the Experimental Analysis of Behavior, 93*, 313-328.

Hagen, B., Nixon, G., and Solowoniuk, J. (2005). Stacking the odds: A phenomenological study of non-problem gambling in later life. *Canadian Journal of Aging, 24*, (4), 433-442.

Hammelstein, P. (2004). Faites vos jeux! Another look at sensation seeking and pathological gambling. *Personality and Individual Differences, 37*, 917-931.

Hanss, D., Mentzoni, Rune, A., Griffiths, M. D., & Pallesen, S. (2015).

The impact of gambling advertising; Problem gamblers report stronger impacts on involvement knowledge and awareness than recreational gamblers.

Psychology of Addictive Behaviours, 29, (2), 483-491.

Harrigan, K. A. (2008). Slot machine structural characteristics: Creating near misses using high award symbol ratios. *International Journal of Mental Health and Addiction, 6*, 353–368.

Harrigan, K. A., Dixon, M. J., MacLaren, V. V., Collins, K., & Fugelsang, J. A. (2011).

The maximum rewards at the minimum price: reinforcement rates and payback percentages in multi-line slot machines. *Journal of Gambling Issues, 26*, 11–29.

Harrigan, K., MacLaren, V., Brown, D., Dixon, M., & Livingstone, C. (2014). Games of chance or masters of illusion: Multiline slots design may promote cognitive distortions.

International Gambling Studies, 14, 301–317.

Harris, N., Newby, J., & Klein, R. G. (2015). Competitiveness Facets and Sensation Seeking as Predictors of Problem Gambling Among a Sample of University Student

Gamblers. *Journal of Gambling Studies, 31*, 385–396. doi: 10.1007/s10899-013-9431-4

Hasher, L., Zacks, R. T., & May, C. P. (1999). Inhibitory control, circadian arousal, and age. In D. Gopher & A. Koriat, (Eds.), *Attention and performance XVII: Cognitive regulation of performance: Interaction of theory and application* (pp. 653–675). Cambridge, MA: The MIT Press.

Haw, J. (2008). Random-ratio schedules of reinforcement: the role of early wins and unreinforced trials. *Journal of Gambling Issues*, 21, 56–67.

Healthcare Commission, Audit Commission and Commission for Social Care Inspection. (2006). *Living well in later life: A review of progress against the National Service Framework for Older People*. Available at: http://www.healthcarecommission.org.uk/db/documents/Living_well_in_later_life_-_full_report.pdf.

Health Survey for England. (HSE). (2012). *Chapter 7, Gambling Behaviour*. Available at: <http://www.gamblingcommission.gov.uk/Gambling-data-analysis/Gambling-participation/Problem-gambling/Health-survey-for-England.aspx> [Accessed 28 August 2013].

Heikkinen, R., & Kauppinen, M. (2004). Depressive symptoms in late life: A 10-years follow up. *Archives of Gerontology and Geriatrics*, 38, 239-250.

Help the Aged (2009). *Specialist doctors label the NHS institutionally ageist and demand a law to bring it to an end*. Press release, 27 January 2009. London: Help the Aged.

Hinch, T. D., & Weighill, A. J. (2005). Inter- and intra-gender similarities and differences in motivations for casino gambling. *Leisure Sciences*, 27, 111–130.

doi:10.1080/01490400590912042

Hing, N., & Breen, H. (2001). Profiling Lady Luck: An empirical study of gambling and problem gambling amongst female club members. *Journal of Gambling Studies*, 17, 47–69.

Hing, N., Breen, H., Gordon, A., & Russel, A. (2014). Gambling behaviour and gambling risk factors for indigenous Australian women. *International Journal of Mental Health and Addiction*, 12, 1–20.

Hodgins, D. C., Peden, N., & Cassidy, E. (2005). The association between comorbidity and outcome in pathological gambling: a prospective follow-up of recent quitters. *Journal of Gambling Studies*, 21, 255–271.

Hodgins, D. C., Schopflocher, D. P., el-Guebaly, N., Casey, D. M., Smith, G. J., Williams, R. J., & Wood, R. T. (2010). The association between childhood maltreatment and gambling problems in a community sample of adult men and women. *Psychology of Addictive Behaviours*. 24, (3), 548-554.

Hodgins, D. C., Stea, J. N., & Grant, J. E. (2011). *Gambling Disorders, Lancet*, (p.p 378) 1875-1884.

Hollander, E., & Wong, C. M. (1995a). Obsessive–compulsive spectrum disorders. *Journal of Clinical Psychiatry*, *56*, (4), 3–6.

Holden, C. (2010). Behavioural addictions debut in proposed DSM-5. *Science*, *327*: 935.

Holdsworth, L., Nuske, E., & Breen, H. (2011). Only the lonely: An analysis of women’s experiences of poker machine gambling. *Gambling Research*, *11*, 2, 17–38.

Holdsworth, L., Hing, N., & Breen, H. (2012). Exploring women’s problem gambling: A review of the literature. *International Journal of Gambling Studies*, *12*, (2), 199–213.

doi:10.1080/14459795.2012.656317

Holdsworth, L., Nuske, E., & Breen, H. (2013). All mixed up together: Women’s experiences of problem gambling, Comorbidity and co-occurring complex needs.

International Journal of Mental Health and Addiction, *11*, (3), 315-328.

doi:10.1007/s11469-012-9415-

Holdsworth, L., Nuske, E., & Hing, N. (2015). A grounded theory of the influence of significant life events, psychological co-morbidities and related social factors on gambling involvement. *International Journal of Mental Health & Addiction*. *13*, (2), 257-273. doi:

10.1007/s11469-014-9527-9

Hong, S, I., Sacco, P., & Cunningham-Williams, R. M. (2009). An empirical typology of lifetime and current gambling behaviours: Association with health status of older adults.

Aging and Mental Health, *13*, (2), 265-273.

Hønsi, A., Mentzoni, R. A., Molde, H., & Pallesen, S. (2013). Attentional bias in problem gambling: A systematic review. *Journal of Gambling Studies, 29*, 359–375.

<http://dx.doi.org/10.1007/s10899-012-9315-z>

Hooyman, N., & Kiyak, H. A. (2002). *Social gerontology; A multidisciplinary perspective*. Needham Heights, MA: Allyn and Bacon.

Hope, J., & Havir, L. (2002). You bet they're having fun! Older Americans and casino gambling. *Journal of Aging Studies, 16*, 177-197.

Horva'th, C., & Paap, R. (2012). The effect of recessions on gambling expenditures. *Journal of Gambling Studies, 28*, 703–717.

Husserl, E. (1970). *The crisis of European sciences and transcendental phenomenology: An introduction to phenomenological philosophy*. Evanston: Northwestern, University Press.

Ialomiteanu, A., & Adlaf, E. M. (2001). Internet gambling among Ontario adults. *Journal of Gambling Issues, 5*. doi: 10.4309/jgi.2001.5.9

Jackson, A. C., Wynne, H., Dowling, N. A., Tomnay, J. E., & Thomas, S. A. (2010). Using the CPGI to determine problem gambling prevalence in Australia: Measurement issues. *International Journal of Mental Health and Addiction, 8*, 570–582.

Jackson, A. C., Francis, K. L., Byrne, G., & Christensen, D. R., (2013). Leisure Substitution and Problem Gambling: Report of a Proof of Concept Group Intervention.

International Journal of Mental Health and Addiction, 11, (1), 64-74. doi:

10.1007/s11469-012-9399-9

Jacobs, D. F. (1986). A general theory of addictions: A new theoretical model. *Journal of Gambling Behavior*, 2, 15-31.

Jacobs, D. (1988). Evidence for a common dissociative-like reaction among addicts. *Journal of Gambling Behaviour*, 4, 27-37.

Jacobsen, L. H., Knudsen, A. K., Krogh, E., Pellesen, S., & Molde, H. (2007). An overview of cognitive mechanisms in pathological gambling. *Nordic Psychology*, 59, 347–361.

Jang H., Lee, B., Park, M., Stokowski, P. A. (2000). Measuring underlying meanings of gambling from the perspective of enduring involvement. *Journal of Travel Research* 38, (3), 230-238.

Jason, D. R., Boglioli, I. R., & Taff, M. L. (1990). Casino –related deaths in Atlantic City; New Jersey, 1982-1986. *American Journal of Forensic Medicine and Pathology*, 11, 112-123.

Jensen, C., Dixon, M. J., Harrigan, K. H., Sheepy, E., Fugelsang, J. A., & Jarick, M. (2013). Misinterpreting winning in multiline slot machine games. *International Gambling Studies*, 13, 112–126.

Jimenez-Murcia, S., Stinchfield, R., Alvarez-Moya, E., Jaurrieta, N., Bueno, B., Granero, R., et al. (2009). Reliability, validity and classification accuracy of a Spanish translation of a measure of DSM-IV diagnostic criteria for pathological gambling. *Journal of Gambling Studies*, 25, (1), 93–104.

Johansson, A., Grant J. E., Kim S. W., Odlaug B. L., Götestam K. G. Risk factors for problematic gambling: a critical literature review. *Journal of Gambling Studies*, 25, 67–92.

Johnson, E. E., Hamer, R., & Nora, R. M. (1998). The lie/bet questionnaire for screening pathological gamblers: a follow-up study. *Psychological Reports*: 83, 1219-1224.

doi: 10.2466/pr0.1998.83.3f.1219

Joint Committee on Human Rights. (2007). *The human rights of older people in health care*. Available at:

<http://www.publications.parliament.uk/pa/jt200708/jtselect/jtrights/5/502.htm>

Joukhador, J., MacCallum, F., & Blaszczynski, A. (2003). Differences in cognitive distortions between problem and social gamblers. *Psychological Reports*, 92, 1203–1214.

Jones, D., Song, X., Mitnitski, A., & Rockwood, K. (2004). Operationalising a Frailty Index from a Standardised Geriatric Assessment. *Journal of the American Geriatrics Society*. 52, 11, 1929-1933. Doi:10.1111/j.1532-5415.2004.52521.x

Kahneman, D., & Tversky, A. (1982). The simulation heuristic, In D. Kahneman, P. Slovic and A. Tversky. (Eds.) *Judgement under uncertainty: Heuristics and biases*, (p.p 201-208). New York: Cambridge University Press.

Kallick, M., Suits, D., Dielman, T., & Hybels, J. (1976). *A survey of American gambling attitudes and behaviour*. Washington, DC: U.S. Government Printing Office.

Kallmen, H., Andersson, P. & Andren, A. (2008). Are irrational beliefs and depressive mood more com-mon among problem gamblers than non-gamblers? A survey study of Swedish Problem gamblers and controls. *Journal of Gambling Studies*, 24, 441- 450.

Kassinove, J., & Schare, M. (2001). Effects of the “Near Miss” and the “Big Win” on persistence at slot machine gambling. *Psychology of Addictive Behaviors*, 15, 155–158.

Kausch, O. (2004). Pathological Gambling Among Elderly Veterans. *Journal of Geriatric Psychiatry & Neurology*, 17, 1, 13-19.

Kausler, D. H. (1994). *Learning and memory in normal aging*. San Diego, CA: Academic Press.

Kazdin, A. E. (1975). *Behavior modification in applied settings*. The Dorsey series in psychology. Homewood, Ill: Dorsey Press.

Kendrick, D., & Funder, D. (1988). Profiting from controversy: lessons from the person-situation debate. *American Psychologist*, 43, 23–34.

Kerber, C. S., Black, D. W., & Buckwalter, K. (2008). Comorbid psychiatric disorders among older adult recovering pathological gamblers. *Issues in Mental Health Nursing, 29*, 1018–1028.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005a). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*, 593-602.

Kessler, R. C., Hwang, I., LaBrie, R., Petukhova, M., Sampson, N. A., Winters, K. C., & Shaffer, H. J. (2008). The prevalence and correlates of DSM-IV pathological gambling in the National Comorbidity Survey Replication. *Psychological Medicine, 38*, (9), 1351–1360.

Kim, S. W., Grant, J. E., Eckert, E. D., Faris, P. L., & Hartman, B. K. (2006). Pathological gambling and mood disorders: Clinical associations and treatment implications. *Journal of Affective Disorders, 92*, 109–116.

Kimberley, H. (2005). *The perils of pokies*. Melbourne: Women's Information Referral Exchange Inc. (WIRE).

Kings Fund. (2008). *Paying the Price: The cost of mental health care in England to 2026*; Available at:
http://www.kingsfund.org.uk/publications/the_kings_fund_publications/paying_the_price.html

Koob, G. F. (2013). Addiction is a reward deficit and stress surfeit disorder. *Frontiers in Psychiatry, 4*, 1–18.

Korn, D. A., & Shaffer, H. J. (1999). Gambling and the health of the public: Adopting a public health perspective. *Journal of Gambling Studies, 15*, 289–365.

Kvale, S. (1996). *InterViews: An introduction to qualitative research interviewing*. London. Sage.

Laditka, S. B., Corwin, S. J. Laditka, J. N., Liu, R., Tseng, W., Wu, B., Beard, R. L.

Sharkey, J. R., & Ivey, S. L. (2009). Attitudes about Aging Well among a Diverse Group of older Americans: Implications for promoting cognitive health in diverse populations of older adults. *Gerontologist, 49* (Supp11), S30-S39.

Lai, D., & W. L. (2006). Gambling and the older Chinese in Canada. *Journal of Gambling Studies, 22*, (1), 121–141. doi:10.1007/s10899-005-9006-0

Ladd, G. T., Molina, C. A., Kerins, G. J., & Petry, N. M. (2003). Gambling participation and problems among older adults. *Journal of Geriatric Psychiatry and Neurology, 16*, 172–177. doi: 10.1177/0891988703255692.

Ladouceur, R., Arsenault, C., Dubé, D., Freeston, M. H., & Jacques, C. (1997).

Psychological characteristics of volunteers in studies on gambling. *Journal of Gambling Studies, 13*, 69–84

Ladouceur, R., Lachance, S., & Fournier, P. (2009). Is control a viable goal in the treatment of pathological gambling? *Behavioural Research Therapy*; 47, 189–197.

Lafreniere, M. K., Vallerand, R. J., Donahue, E. G., & Lavigne, G. L. (2009). On the costs and benefits of gaming: The role of passion. *Cyberpsychology & Behavior*, 12, (3), 285–290.

Ialomiteanu, A., & Adlaf, E. M. (2001). Internet gambling among Ontario adults. *Journal of Gambling Issues*, 5. doi: 10.4309/jgi.2001.5.9

Lamont, M., Hing, N., & Gainsbury, S. (2011). Gambling on sport sponsorship: A conceptual framework for research and regulatory review. *Sport Management Review*, 14, 246–257. <http://dx.doi.org/10.1016/j.smr.2011.04.004>

Lane, J. (2005). *Technical tools to identify a problem gambler*. Paper presented at the 4th meeting of the Gaming Regulators European Forum on Technical Issues, London, Great Britain.

Langer, E. J. (1975). The illusion of control. *Journal of Personality and Social Psychology*, 32, 311–328.

LaPlante, D. A., & Shaffer, H. J. (2007). Understanding the influence of gambling opportunities: Expanding exposure models to include adaptation. *American Journal of Orthopsychiatry*, 77, 4, 616–623.

Leeman, R. F., & Potenza, M. N. (2012). Similarities and differences between pathological gambling and substance use disorders: *A focus on impulsivity and compulsivity*.

Psychopharmacology (Berl), 2, 469–490. doi:10.1007/s00213-011-2550-7

Ledgerwood, D. M., & Downey, K. K. (2002). Relationship between problem gambling and substance use in a methadone maintenance population. *Addictive Behaviors*,

27, 483–491.

Ledgerwood, D. M., & Petry, N. M. (2006). Psychological experience of gambling and subtypes of pathological gamblers. *Psychiatric Research*, 144, 17–27.

Lee, H., Chae, P. K., Lee, H., & Kim, Y. (2007). The five-factor gambling motivation model. *Psychiatry Research*, 150, 1, 21–32.

Lee, C. K., Lee, Y. K., Bernhard, B. J., & Yoon, Y. S. (2006). Segmenting casino gamblers by motivation: A cluster analysis of Korean gamblers. *Tourism Management*, 27, 856–866.

doi:10. 1016/j.tourman.2005.05.009

Lehning, A., Scharlach, A., & Wolf, J. P. (2012). An emerging typology of community aging initiatives. *Journal of Community Practice*, 20, 293–316.

Lemon, B. W., Bengston, V. L., & Peterson, J. A. (1972). An exploration of the activity theory of aging: Activity types and life satisfaction among in-movers to a retirement community. *Journal of Gerontology*, 27, 511–523.

Lesieur, H., & Blume, S. (1991). When lady luck loses: Women and compulsive gambling. In N. Van Den Bergh (Ed.), *Feminist perspectives on addictions* (pp. 181-197). New York: Springer.

Lesieur, H., & Blume, S. (1993). Revising the South Oaks Gambling Screen in different settings. *Journal of Gambling Studies*, 9, 213–223.

Lesieur, H. R., & Blume, S. B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry*, 144, 1184-1188.

Levens, S., Dyer, A. M., Zubritsky, C., Knott, K., & Oslin, D. W. (2005). Gambling among older, primary-care patients: An important public health concern. *American Journal of Geriatric Psychiatry*, 13, (1), 69–76.

Levy, D. (2006). Qualitative methodology and grounded theory in property research. *Pacific Rim Property Journal*, 12, (4), 369-388.

Li, W., Hodgetts, D., & Sonn, C. (2014). Multiple Senses of Community among older Chinese Migrants to New Zealand. *Journal of Community and Applied Social Psychology*, 24, 26–36. <http://dx.doi.org.proxy.library.lincoln.ac.uk/10.1002/casp.2174>

Lister, J. L., & Nower, L. (2013). Gambling and Older adults. In; D. C. S., Richard, A., Blaszczynski & L., Nower. (pp. 350). *The Wiley-Blackwell Handbook of Disordered*

Gambling; Chichester, UK; West Sussex, PO19 8SQ, UK.

doi:10.1002/9781118316078.ch16

Liu, T., Maciejewski, P. K., & Potenza, M. N. (2009). The relationship between recreational gambling and substance abuse/dependence: Data from a nationally representative sample. *Drug and Alcohol Dependence*, *100* (1-2), 164–168.

Lloyd, J., Doll, H., Hawton, K., Dutton, W. H., Geddes, J. R., Goodwin, G. M., & Rogers, R. D. (2010). How psychological symptoms relate to different motivations for gambling: An online study of internet gamblers. *Biological Psychiatry*, *68*, (8), 733–740. doi: 10.1016/j.biopsych.2010.03.038

Locher, J. L., Bronstein, J., Robinson, C.O., Williams, C., & Ritchie, C. S. (2006). Ethical issues involving research conducted with homebound older adults. *Gerontologist*, *46*, 160-164.

Lorains, F. K., Cowlishaw, S., & Thomas, S. A. (2011). Prevalence of comorbid disorders in problem and pathological gambling: Systematic review and meta-analysis of population surveys. *Addiction*, *106*, 490–498.

Loroz, P. S. (2004). Golden-age gambling: Psychological benefits and self-concept dynamics in aging consumers' consumption experiences. *Psychology & Marketing*, *21*, 5, 323–349.

Lucke, S., & Wallace, M., (2006) Assessment and Management of Pathological and Problem Gambling Among Older Adults. *Geriatric Nursing*, 27, 1, 51-57.

Lund, I. (2008). The population mean and the proportion of frequent gamblers: Is the theory of total consumption valid for gambling: *Journal of Gambling Studies*, 24, (2), 247-256.

Lund, I. (2011). Irrational beliefs revisited: Exploring the role of gambling preferences in the development of misconceptions in gamblers. *Addiction Research and Theory*, 19, 40–46.

MacLaren, V. V., & Best, L. A. (2013). Disagreeable narcissism mediates an effect of BAS on addictive behaviours. *Personality and Individual Differences*. 55, (2), 101-105. doi:10.1016/j.paid.2013.02.004

MacLaren, V. V., Ellery, M., & Knoll, T. (2015a). Personality, gambling motives and cognitive distortions in electronic gambling machine players. *Personality and Individual Differences*, 73, 24–28.

MacLaren, V. V., Fugelsang, J. A., Harrigan, K. A., & Dixon, M. J. (2011). The personality of pathological gamblers: A meta-analysis. *Clinical Psychology Review*, 31, 1057–1067.

MacLin, O. H., Dixon, M. R., Daugherty, D., & Small, S. L. (2007). Using a computer simulation of three slot machines to investigate a gambler's preference among varying densities of near-miss alternatives. *Behavior Research Methods*, 39, (2), 237–241.

Majamaki, M., & Poysti, V. (2012). Vocabularies of gambling justification among Finnish and French players. *European Journal of Cultural Studies*; 15, (4), 496-512.

doi: 10.1177/1367549412442210

Manoso, V., Labrador, F. J., & Fernandez-Alba, A. (2004). Types of cognitive distortions during gambling in pathological gamblers and no-gamblers. *Psicothema*, 16, (4), 576–581.

Manzer, J. (2001). Emotions prompt women to gamble: Sadness, depression contribute to habit, which can quickly become pathological. *Medical Post*, 37, 123-126.

Marmurek, H. H. C., Switzer, J., & D'Alvise, J. (2015). impulsivity, gambling cognitions, and the gambler's fallacy in university students. *Journal of Gambling Studies*, 31, 197–210. doi: 10.1007/s10899-013-9421-6

Martin, F., Lichtenberg, P. A., & Templin, T. N. (2011). A longitudinal study: Casino gambling attitudes, motivations, and gambling patterns among urban elders. *Journal of Gambling Studies*, 27, (2), 287–297.

Mather, M., & Carstensen, L. L. (2005). Aging and motivated cognition: The positivity effect in attention and memory. *Trends in Cognitive Sciences*, 9, (10), 496–502.

McBride, J., & Derevensky, J. (2009). Internet gambling behaviour in a sample of online gamblers. *International Journal of Mental Health and Addiction*, 7, 149–167.

McCormack, J., Jackson, A. C., & Thomas, S. A. (2003). Gambling and older people in Australia. *Australasian Journal on Ageing*, 22, (3), 120–126.

McCready, J., Mann, R. E., Zhao, J., & Eves. R. (2008). Correlates of gambling-related problems among older adults in Ontario, *Journal of Gambling Issues*, 22, 174–194

McGrath, D. S., Stewart, S. H., Klein, R. M., & Barrett, S. P. (2010). Self-generated motives for gambling in two population-based samples of gamblers. *International Gambling Studies*, 10, (2), 117–138. doi:10. 1080/14459795.2010.499915

McKay, C. (2005). Double jeopardy: Older women and problem gambling. *International Journal of Mental Health and Addiction*, 3, 35–53.

McLellan, A.T., Luborsky, L., Cacciola, J., Griffith, J., Evans, F., Barr, H. L., & O' Brien, C.P. (1985). New data from the addiction severity index: Reliability and validity in three centres. *Journal of Nervous and Mental Disorders*, 173, 412-422.

McMillen, J., Marshall, D., Murphy, L., Lorenzen, S., & Waugh, B. (2004). *Help-seeking by problem gamblers, friends and families: A focus on gender and cultural groups*. Acton: ACT Gambling and Racing Commission.

- McNeilly, D. P. (2007). Minding the mind in older gamblers: gambling behaviours in older adults might signal cognitive declines. *Addiction Professional*, 5, (6), 37-40.
- McNeilly, D., & Burke, W. J. (2000). Late life gambling: The attitudes and behaviours of older adults. *Journal of Gambling Studies*, 16, 393–415. doi:10.1023/A:1009432223369
- McNeilly, D. P., & Burke, W. J. (2001). Gambling as a social activity of older adults. *International Journal of Aging & Human Development*, 52, 1, 19–28.
- McNeilly, D. P., & Burke, W. J. (2002). Disposable time and disposable income: Problem casino gambling behaviour in older adults. *Journal of Clinical Geropsychology*, 8, (2), 75–85.
- McQuade, A., & Gill, P. (2012). The role of loneliness and self-control in predicting problem gambling behaviour. *Gambling Studies*, 24, 1, 18–30.
- Medeiros, G. C., Leppink, E., Yaemi, A., Mariani, M., Tavares, H., & Grant, J., (2015). Gambling disorder in older adults: A cross-cultural perspective. *Comprehensive Psychiatry* 12, 58, 116-21. doi:10.1016/j.comppsy.2014.12.021
- Melzack, R. (1975). The McGill Pain Questionnaire: major properties and scoring methods. *Journal of Pain*, 1, 277-299.

Mental Capacity Act (2005). *Code of Practice*. Available at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/497253/Mental-capacity-act-code-of-practice.pdf [Accessed September 2013].

Mental Health and Older People Forum. (2008). *A Collective Responsibility to Act Now on Ageing and Mental Health – A Consensus Statement*. London: Mental Health and Older People Forum.

Mental Health Foundation. (2009). *All things being equal; Age Equality in Mental Health Care for Older People in England*. Available at:

http://www.mentalhealth.org.uk/content/assets/PDF/publications/all_things_being_equal.pdf?view=Standard

Meyer de Stadelhofen, F., Aufrère, L., Besson, J., & Rossier, J. (2009). Somewhere between illusion of control and powerlessness: Trying to situate the pathological gamblers locus of control. *International Journal of Clinical and Health Psychology*, 9, (1), 117-126.

Milkman, H. B., & Suderwirth, S. G. (2010). *Craving for ecstasy and natural highs; A positive approach to mood alteration*. Thousand Oaks, California: Sage Publishing Company.

Michalczuk, R., Bowden-Jones, H., Verdejo-Garcia, A., & Clark, L. (2011). Impulsivity and cognitive distortions in pathological gamblers attending the UK National Problem Gambling Clinic: A preliminary report. *Psychological Medicine*, 41, 2625–2635.

Miller, J. D., Mackillop, J., Fortune, E. E., Maples, J., Lance, C. E., Keith Campbell, W., & Goodie, A. S. (2013). Personality correlates of pathological gambling derived from Big Three and Big Five personality models. *Psychiatry Research, 206*, 50–55.

<http://dx.doi.org/10.1016/j.psychres.2012.09.042>

Milosevic, A., & Ledgerwood, D. M. (2010). The subtyping of pathological gambling: A comprehensive review. *Clinical Psychology Review, 30*, 988–998.

doi:10.1016/j.cpr.2010.06.013.

Mitchell, A. J., Rao, S., & Vaze, A. (2010). Do primary care physicians have particular difficulty identifying late-life depression? A meta-analysis stratified by age. *Psychotherapy and Psychosomatics, 79*, 5, 285–294 <http://dx.doi.org/10.1159/000318295>

Mitzner, G. B., Whelan, J. P., & Meyers, A. W. (2011). Comments from the trenches: proposed changes to the DSM-V classification of pathological gambling. *Journal of Gambling Studies, 27*, 517–21.

Moeller, F. G., Barratt, E. S., Dougherty, D. M., Schmitz, J. M., & Swann, A. C. (2001). Psychiatric aspects of impulsivity. *American Journal of Psychiatry, 158*, 1783–1793.

Mok, W. P., & Hraba, J. (1991). Age and gambling behaviour: A declining and shifting pattern of participation. *Journal of Gambling Studies, 7*, 313–335.

- Mond, J., Davidson, T., & McAllister, I. (2011). ANU Poll 2011: *Public opinion on Gambling* (computer file). Canberra: Australian Data Archive, The Australian National University.
- Moore, T. L., & Neal, M. B. (2001). The prevalence of disordered gambling among older adults in Oregon. *Gerontologist, 41*, 1, 151.
- Moore, S. M., & Ohtsuka, K. (1999). The prediction of gambling behavior and problem gambling from attitudes and perceived norms. *Social Behavior and Personality, 27*, 455-466.
- Moran, E. (1970). Varieties of pathological gambling. *The British Journal of Psychiatry, 116*, 593-597.
- Morgan Research. (2000). *Seventh survey of community gambling patterns and perceptions. Project report. Prepared for Victorian Casino and Gaming Authority.* Retrieved October, 2015 from <http://vcgr.vic.gov.au/CA256F800017E8D4/Statistics>.
- Morris, G., & Griffiths, M. (2013). The relationship between gambling affinity, impulsivity, sensation seeking, superstition, and irrational beliefs: An empirical study among committed gamblers. *Revista de Psicologia, Ciències de l'Educació i de l'Esport, 31*, 2, 109-12.
- Morasco, B. J., & Petry, N. M. (2006). Gambling problems and health functioning in individuals receiving disability. *Disability & Rehabilitation, 28*, 619–623.

Moufakkir, O. (2006). An Analysis of Elderly Gamers' Trip Characteristics and Gambling Behaviour: Comparing the elderly with their younger counterparts. *UNLV Gaming Research & Review Journal*, 10, 63-75.

Moubarac, J. C., Shead, N. W., & Derevensky, J. L., (2010). Bingo playing and problem gambling: A review of our current knowledge. *Journal of Gambling Issues*; 24, 164-184. doi: 10.4309/2010.24.10

Munro, B., Cox-Bishop, M., McVey, W., Munro, G., Reay, V., Powell, S., & Sutton, K. (2003). *Seniors who gamble: A summary review of the literature 2003*. Alberta Gaming Research Institute, University of Calgary. Available at: http://dspace.ucalgary.ca/bitstream/1880/1631/1/Munro_Seniors.pdf [Accessed January 2013].

Murphy, G. (1947). *Personality: A bio-social approach to origins and structure*. New York: Harper & Row.

Murray, S. J., & Holmes, D. (2014). Interpretative Phenomenological Analysis (IPA) and the Ethics of Body and Place: Critical methodological reflections. *Human Studies*, 37, 15-30. doi: 10.1007/s10746-013-9282-0.

Myrseth, H., Pallesen, S., Molde, H., Johnsen, B. & Lorvik, I. (2009). Personality factors as predictors of pathological gambling. *Personality and Individual Differences*, 47, 933-937.

National Centre for Social Research. (NCSR). (2012). *Gambling Behaviour in England and Scotland; Findings from the Health Survey for England and Scottish Health Survey*.

Prepared for the Gambling Commission. Available at:

<http://www.gamblingcommission.gov.uk/Press/Newsarchive/2014/FurtheranalysisofHealthSurveys.aspx> [Accessed August 2014].

National Opinion Research Centre (NORC). (1999). *Gambling impact and behaviour study*. Final Report to the National Gambling Impact Study Commission. Chicago, NORC.

National Research Council, United States, (NRC): Committee on the Social and Economic Impact of Pathological Gambling., (1999). *Pathological Gambling: A critical review*. Washington DC: The National Academies Press.

Neighbors, C., Lostutter, T. W., Crance, J. M., & Larimer, M. E. (2002). Exploring college student gambling motivation. *Journal of Gambling Studies*, 18, 361–370.

Neuman, W. (2006). *Social research methods: Qualitative and quantitative approaches*. Boston: Allyn and Bacon.

Newby, J. (2010). *The newly developed Competitiveness Orientation Measure: Psychometric development and evaluation* (Master's thesis). Available from ProQuest Dissertations and Theses database (UMI No. 71916).

Nikolas, M. A., & Hopwood, C. J. (2013). Disordered Gambling and Personality Traits In; D. C. S., Richard, A., Blaszczynski & L., Nower. *The Wiley-Blackwell Handbook of Disordered Gambling*; Chichester, UK. doi:10.1002/9781118316078.ch16.

Nixon, G., Evans, K., Kalischuk, R. G., Solowoniuk, J., McCallum, K., & Hagen, B. (2013). Female Gambling, Trauma, and the Not Good Enough Self: An Interpretative Phenomenological Analysis. *International Journal of Mental Health Addiction*, 11, 214–231. doi: 10.1007/s11469-012-9413-2

Norris, J., Gallagher, D, Wilson, A., & Winograd, C. (1987). Assessment of depression in geriatric medical outpatients: The validity of two screening measures. *Journal of the American Geriatric Society*; 35, 989-995.

Norris, D. (2012). Making sense of the census: Part 2—age and sex. PowerPoint Presentation. *Environics Analytics*.

Nower, L., Gupta, R., Blaszczynski, A., & Derevensky, J. L. (2004). Suicidal ideation among youth problem gamblers. *International Gambling Studies*, 4, 69–80.

Nower, L., & Blaszczynski, A. (2006). Characteristics and gender differences among self-excluded casino problem gamblers: Missouri data. *Journal of Gambling Studies*, 22, 81–99.

Nower, L., & Blaszczynski, A. (2008). Characteristics of Problem Gamblers 56 Years of Age or Older: A State Wide Study of Casino Self-Excluders. *Psychology and Aging*, 23, 577–584.

O' Connor, J. (2000). *An investigation of chasing behaviour*. Unpublished PhD Thesis, University of Western Sydney, Macarthur.

O' Mahony, B., & Ohtsuka, K. (2015). Responsible gambling: sympathy, empathy or telepathy? *Journal of Business Research*,. Available at:

<http://www.responsiblegambling.vic.gov.au/information-and-resources/publications/giro-research-updates/june-2015/can-they-see-it-staff-and-signs-of-gambling-problems-in-venues>

Office for National Statistics; ONS. (2013). *Internet Access - Households and Individuals*. Available at: : http://www.ons.gov.uk/ons/dcp171778_322713.pdf [Accessed March 2015].

Ohtsuka, K., & Karoglidis, H. (2001). Gambling among older Greek Australians: Influence of Illusion of Control Beliefs and Risk-Taking. In A. Blaszczynski (Ed.), *Culture and gambling phenomenon: Proceedings of the 11th National Conference of the National Association for Gambling Studies, Sydney* (pp. 304–313). Alphington, Australia: The National Association for Gambling Studies.

Ohtsuka, K., & Chan, C. C. (2009). Desperate housewives: An analysis of the characterisations of female gamblers portrayed in gambling movies in Hong Kong.

International Journal of Mental Health and Addiction, 7, 229–238.

<http://dx.doi.org/10.1007/s11469-008-9180-2>

Ohtsuka, K. (2013). Views on luck and winning, self-control, and gaming service expectations of culturally and linguistically diverse Australian poker machine gamblers.

Asian Journal of Gambling Issues and Public Health, 3, (1), 9.

<http://dx.doi.org/10.1186/2195-3007-3-9>

Ohtsuka, K., & Chan, C. C. (2014). Senior gambling in Hong Kong: through the lenses of Chinese senior gamblers – an exploratory study. *Asian Journal of Gambling Issues and Public Health*, 4, (1), 4. doi: 10.1186/s40405-014-0004-y

Olin, J. T., & Zelinski, E. M. (1991). The 12-month reliability of the Mini-Mental State Examination. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 3, 427-432.

Olin, J. T., Schneider, L. S., Eaton, E. M., Zemansky, M. F., & Pollock, V. E. (1992). The Geriatric Depression Scale and the Beck Depression Inventory as screening instruments in an older adult outpatient population; *Psychological Assessment*, 4, 190-192.

Orford, J., Griffiths, M., Wardle, H., Sproston, K., & Erens, B. (2009). Negative public attitudes towards gambling: Findings from the 2007 British Gambling Prevalence Survey using a new attitude scale. *International Gambling Studies*, 9, (1), 39–54.

Orford, J. Sproston, S. Erens, B. White, C., & Mitchell, L. (2003). *Gambling and Problem Gambling in Britain*. London. Brunner-Routledge

Osborn, M., & Smith, J. A. (1998). The personal experience of chronic benign lower back pain: An interpretative phenomenological analysis. *British Journal of Health Psychology*, 3, 65-83.

Ostir, G.V., Markides, K. S., Black, S.A., & Goodwin, J. S. (2000). Emotional well-being predicts subsequent functional independence and survival. *Journal of the American Geriatric Society*, 50, 713-718.

Ostir, G. V., Markides, K. S., Peek, M. K., & Goodwin, J. S. (2001). The association between emotional well-being and the incidence of stroke in older adults. *Psychosomatic Medicine*, 63, 210-215.

Ostir, G. V., Ottenbacher, K. J., & Markides, K. S. (2004). Onset of frailty in older adults and the protective role of positive affect. *Psychology and Aging* 19, (3), 402-408.

Parke, J. & Griffiths, M. D. (2002). Slot machine gamblers – Why are they so hard to study? *Journal of Gambling Issues*, 6. Accessed at:

<http://www.camh.net/egambling/issue6/opinion/index.html>

Parke, J., & Griffiths, M. (2004). Gambling addiction and the evolution of the “near miss”. *Addiction Research & Theory, 12*, 407–411.

Parke, A., Griffiths, M. D. & Irwing, P. (2004). Personality traits in pathological gambling: Sensation seeking, deferment of gratification and competitiveness as risk factors, *Addiction Research and Theory, 12*, 201-212.

Patton, M. (1990). *Qualitative evaluation and research methods* (pp. 169). Beverly Hills, CA: Sage.

Patton, M. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage.

Pel-Little, R. E., Schuurmans, M. J., Emmelot-Vonk, M. H., & Verhaar, H. J. J. (2009). Frailty: Defining and measuring of a concept. *The Journal of Nutrition, Health & Aging: 13*, (4), 390-394.

Petroff, A. (2013). Royal baby betting exceeds £1 million. *CNNMoney*. Available at: <http://money.cnn.com/2013/07/23/news/royal-baby-betting/> [Accessed 2013]

Petry, N. M. (2002). A comparison of young, middle-aged, and older adult treatment-seeking pathological gamblers. *The Gerontologist, 42*, 1, 92–99.

Petry, N. M. (2003). A comparison of treatment-seeking pathological gamblers based on preferred gambling activity. *Addiction, 98*(5), 645-655. doi:10.1046/j.13600443.2003.00336.x

Petry, N. M. (2005). *Pathological Gambling: Etiology, Comorbidity, and Treatment*. Washington DC: American Psychological Association.

Petry, N. M., & Steinberg, K. L. (2005). Childhood maltreatment in male and female treatment-seeking pathological gamblers. *Psychology of Addictive Behaviors, 19*, 226–229.

Petry, N., Stinson, F., & Grant, B. (2005). Comorbidity of DSM-IV pathological gambling and other psychiatric disorders: results from the national epidemiologic survey of alcohol and related conditions. *The Journal of Clinical Psychiatry, 66*(5), 564–574.

Petry, N. (2006). Should the scope of addictive behaviours be broadened to include pathological gambling? *Addiction, 101*(S1), 152–160.

Petry, N. M. (2007). Gambling and substance use disorders: Current status and future directions. *American Journal on Addictions, 16*, 1–9.

Petry, N. M. (2010). Pathological gambling and the DSM-V. *International Gambling Studies, 10*, 113–115.

Petry, N. M., Blanco, C., Jin, C., & Grant, B. F. (2014). Concordance between Gambling Disorder Diagnoses in the DSM–IV and DSM-5: Results from the National

Epidemiological Survey of Alcohol and Related Disorders. *Psychology of Addictive Behaviours*, 28, (2), 586-591. doi: 10.1037/a0034661

Petry, N. M., Blanco, C., Stinchfield, R., & Volberg, R. (2013). An empirical evaluation of proposed changes for gambling diagnosis in the DSM-5. *Addiction*, 108, 575–581.

Philips, W. J. (2009). Senior casino motivation and gaming intention: An extended study of planned behavior model. *Dissertation Abstracts International: Section A. Humanities and Social Sciences*, 70, (5-A).

Pierce, M., Wentzel, J., & Loughnan, T. (1997). Male gamblers/female gamblers: Mapping the differences. In G. Coman, B. Evans, & R. Wootton (Eds.), *Responsible gambling: A future winner: Proceedings of the eighth national conference of the National Association for Gambling Studies, Melbourne* (pp. 293–309).

Pietrzak, R. H., Morasco, B. J., Blanco, C., Grant, B. F., & Petry, N. M. (2007). Gambling level and psychiatric and medical disorders in older adults: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *American Journal of Geriatric Psychiatry*, 15, (4), 301–313.

Pietrzak, R. H., Molina, C. A., Ladd, G. T., Kerins, G. J., & Petry, N. M. (2005). Health and psychosocial correlates of disordered gambling in older adults. *The American Journal of Geriatric Psychiatry*, 13, (6), 510–519. doi:[10.1097/00019442-200506000-00010](https://doi.org/10.1097/00019442-200506000-00010).

Pilver, C. E., Libby, D. J., Hoff, R. A., & Potenza, M. N. (2013). Problem gambling severity and the incidence of Axis I psychopathology among older adults in the general population. *Journal of Psychiatric Research, 47*, 94), 534–541.

Pilver, C. E., & Potenza, M. N. (2013). Increased incidence of cardiovascular conditions among older adults with pathological gambling features in a prospective study. *Journal of Addiction Medicine, 7*, 387–393.

Piquette-Tomei, N., Norman, E., Corbin-Dwyer, S., & McCaslin, E. (2008). Group therapy for women problem gamblers: A space of their own. *Journal of Gambling Issues, 22*, 275-296.

Preston, F. W., Shapiro, P. D., & Keene, J. R. (2007). Successful Aging and Gambling. Predictors of Gambling Risk Among Older Adults in Las Vegas. *American Behavioral Scientist, 51*, (1), 102-121.

Pring, C. (2012). New Social Media Statistics for 2012. Available at:

<http://thesocialskinny.com/99-new-social-media-stats-for-2012>

Phillippe, F., & Vallerand, R. J. (2007). Prevalence rates of gambling problems in Montreal, Canada: A look at old adults and the role of passion. *Journal of Gambling Studies, 16*, (3), 275–283.

Phillips, W. J., Jang, S., & Canter, D. D. (2010). Senior casino gaming motivation: Measurement scale development. *Tourism Analysis, 15*, 197–211.

doi:10.3727/108354210X12724863327722

Platz, L., & Millar, M. (2001). Gambling in the context of other recreation activity: A quantitative comparison of casual and pathological student gamblers. *Journal of Leisure Research, 33*, (4), 383–395.

Potenza, M. N. (2013). Neurobiology of gambling behaviors. *Current Opinion in Neurobiology, 23*, 660–667.

Potenza, M. N. (2014). The neural bases of cognitive processes in gambling disorder. *Trends in Cognitive Sciences, 18*, 429–438.

Potenza, M. N., Leung, H. C., Blumberg, H. P., Peterson, B. S., Fulbright, R. K., Lacadie, C. M., Skudlarski, P., & Gore, J. C. (2003). An fMRI Stroop task study of ventromedial prefrontal cortical function in pathological gamblers. *American Journal of Psychiatry, 160*, 1990–1994.

Potenza, M., Steinberg, M., McLaughlin, S., Wu, R., Rounsaville, B., & O'Malley, S. (2001). Gender related differences in the characteristics of problem gamblers using a gambling helpline. *American Journal of Psychiatry, 158*, 1500–1505.

Potenza, M. N., Steinberg, M. A., Wu, R., Rounsaville, B. J., & O'Malley, S. S. (2006). Characteristics of older adult problem gamblers calling a gambling helpline. *Journal of Gambling Studies, 22*, (2), 241–254.

Potter, J. (1996). Discourse analysis and constructionist approaches: theoretical background. In Richardson, J.T.E., editor, (pp. 125-128). *Handbook of qualitative research methods for psychology and the social sciences*. Leicester: B.P.S. Books.

Powell, G. J., Hardoon, K., Derevensky, J., & Gupta, R. (1996). *Gambling and risk taking behaviour of university students*. Paper presented at the annual meeting of the National Conference on Compulsive Gambling. Chicago.

Preston, F. W., Shapiro, P. D., & Keene, J. R. (2007). Successful aging and gambling predictors of gambling risk among older adults in Las Vegas. *American Behavioural Scientist*, 51, (1), 102-121.

Pring, C. (2012, July 25). *99 New social media stats for 2012*. Retrieved from: <http://thesocialskinny.com/99-new-social-media-stats-for-2012/>

Productivity Commission. (1999). *Australia's Gambling Industries. Inquiry Report No. 10*. Canberra: Ausinfo

Productivity Commission. (2010). *Gambling*. Inquiry Report No. 50. Canberra: Australian Federal Government. Available at: <http://www.pc.gov.au/inquiries/completed/gambling-2009>

Puts, M.T., Lips, P., & Deeg, D. J. (2005). Static and dynamic measures of frailty predicted decline in performance-based and self-reported physical functioning. *The Journal of Clinical Epidemiology*: 58, (1)1, 1188-98.

Queensland Government. (2013). *Queensland Household Gambling Survey 2011–12*. Office of Liquor and Gaming regulation, Department of Justice and Attorney General. Retrieved from. <https://publications.qld.gov.au/dataset/liquor-and-gambling-research/resource/79c83075-5dd6-48f7-84b1-8bd6b106eaff>

Ramey, H. & Grubb, S. (2009). Modernism, Postmodernism and (Evidence-Based) Practice. *Contemporary Family Therapy*, 31, (2), 75—86.

Ratelle, C. R., Vallerand, R. J., Mageau, G. A., Rousseau, F. L., & Provencher, P. (2004). When passion leads to problematic outcomes: A look at gambling. *Journal of Gambling Studies*, 20, (2), 105–119.

Raskin, J. (2008) The Evolution of Constructivism. *Journal of Constructivist Psychology*, 21, (1), 1-24.

Raylu, N., & Oei, T. P. S. (2002). Pathological gambling: A comprehensive review. *Clinical Psychology Review*, 22, 1009-1061.

Raylu, N., & Oie, T. P. S. (2004). The Gambling-Related Cognition Scale (GRCS): Development, confirmatory factor validation and psychometric properties. *Addiction*, 99, 757–769.

Reed, A., Mikels, J., & Simon, K. (2008). Older adults prefer less choice than young adults. *Psychology and Aging*, 23, 671–675.

- Reeve, J. (2009). *Understanding motivation and emotion*. Hoboken, New Jersey: Wiley.
- Reichstadt, J., Sengupta, G., Depp, C., Palinkas, L., & Jeste, D. (2010). Older adults' perspectives on successful aging qualitative interviews. *American Journal of Geriatric Psychiatry* 18, (7), 567-575.
- Reinhartz, S. (1992). *Feminist methods in social research*. New York: Oxford University Press.
- Reith, G. (2006). *'The Social Impacts of Gambling'*. Edinburgh: Scottish Executive. Social Research Series. Available at:
<http://www.scotland.gov.uk/Resource/Doc/143770/0036514.pdf>
- Reith, G. (2008). Reflections on responsibility. *Journal of Gambling Issues*, 22, 149–155.
- Rich, M. (1998). Women who gamble. *Dissertation Abstracts International (Section B: The Sciences and Engineering)*, 56, 6823.
- Rigbye, J., & Griffiths, M. D. (2011). Problem Gambling Treatment within the British National Health Service. *International Journal of Mental Health Addiction*, 9, 276–281.
- Rivlin, G. (2004). The tug of the new-fangled slot machines. *New York Times Magazine*. Available at:
<http://www.nytimes.com/2004/05/09/magazine/09SLOTS.html?ex=1085073793&ei=1&en=784824f7753e1411>. [Accessed 25 August 2015].

Robins, L.N., Helzer, J. E., Croughan, J., & Ratcliff, K. S. (1981). National Institute of Mental Health Diagnostic Interview Schedule. Its history, characteristics, and validity. *Archives of General Psychiatry*, 38, 381–389.

Robinson, T. E., & Berridge, K. C. (1993). The neural basis of drug craving: an incentive sensitization theory of addiction. *Brain Research.Revisted*, 18, 247–91.

Rockloff, M., Greer, N., Fay, C., & Evans, L. (2010). Gambling on electronic gaming machines is an escape from negative self-reflection. *Journal of Gambling Studies*, 27, 63-72.

Rockwood, K., Song, X., MacKnight, C., Bergman, H., Hogan, D. B., McDowell, I., & A. Mitniski, (2005). A Global clinical measure of fitness and frailty in elderly people. *Canadian Medical Association Journal: 175*, 488-495.

Roos, V., Kolobe, P. S., & Keating, N. (2014). (Re) creating community: Experiences of older women forcibly relocated during Apartheid. *Journal of Community and Applied Social Psychology*, 24, 12–25.

Rose, G. (1995). Sick individuals and sick populations. *International Journal of Epidemiology*, 14, 1, 32-38.

Rosenthal, R. J. (1987). The psychodynamics of pathological gambling: A review of the literature. In T. Galski Ed., *The handbook of pathological gambling*, pp. 41-70.

Springfield, IL: Thomas.

Rossier, J., Aluja, A., Garcia, L.F., Angleitner, A., De Pascalis, V., Wang, W., Kuhlman, M., & Zuckerman, M. (2007). The cross-cultural generalizability of Zuckerman's

Alternative

Five-Factor Model of Personality. *Journal of Personality Assessment*, 89, 188-196.

Rossier, J., Rigozzi, C. (2008). Personality Across Culture Research Group (2008).

Personality disorders and the Five-Factor Model among French speakers in Africa and Europe. *Canadian Journal of Psychiatry*, 53, 534-544.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80, 1-28.

Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two process model of perceived control. *Journal of Personality and Social*

Psychology. doi:10.1037/0022-3514.42.1.5

Royal College of Psychiatrists. (2005). *Who Cares Wins. Improving the outcome for older people admitted to the general hospital: guidelines for the development of liaison mental health services for older people*. Available at:

<http://www.bgs.org.uk/PDF%20Downloads/WhoCaresWins.pdf>

Roy-Byrne, P. P., Davidson, K. W., Kessler, R. C., Asmundson, G. J. G., Goodwin, R. D., Kubzansky, L., Lydiard, R. B., Massie, M. J., Katon, W., Laden, S. K., & Stein, M. B. (2008). Anxiety disorders and comorbid medical illness. *General Hospital Psychiatry, 30*, (3), 208–225. doi: 10.1016/j.genhosppsy.2007.12.006.

Ryan, E. B. (1992). Beliefs about memory changes across the life span. *Journal of Gerontology, 47*, 41-46.

Saarni, S. I., Suvisaari, J., Sintonen, H., Pirkola, S., Koskinen, S., Aromaa, A., & Lönnqvist, J. (2007). Impact of psychiatric disorders on health-related quality of life: general population survey. *British Journal of Psychiatry, 190*, 326–332.

Sacco, P., Torres, L. R., Cunningham-Williams, R. M., Woods, C., & Unick, G. J. (2011). Differential item functioning of pathological gambling criteria: An examination of gender, race/ethnicity, and age. *Journal of Gambling Studies, 27*, 317–330. doi:10.1007/s10899-010-9209-x

Schneider, B. H., Woodburn, S. S., Pilar Soteras del Toro, M. D., & Udvari, S. J. (2005). Cultural and gender differences in the implications of competition for early adolescent friendship. *Merrill-Palmer Quarterly, 51*, 163-191. doi:10.1353/mpq.2005.0013.

Shaffer, H. J., Labrie, R., Scanlan, K. M. & Cummings, T. M. (1994). Pathological gambling among adolescents: Massachusetts Gambling Screen (MAGS). *Journal of Gambling Studies*, *10*, 339–362.

Shaffer, H. J., Vander Bilt, J., & Hall, M. N. (1999). Gambling, drinking, smoking and other health risk activities among casino employees. *American Journal of Industrial Medicine*, *36*, 365–378.

Shaffer, H. J., & Korn, D. A. (2002). Gambling and related mental disorders: a public health analysis. *Annual Review of Public Health*, *23*, 171–212.

Shaffer, H. J., LaBrie, R. A., LaPlante, D. A., & Kidman, R. C. (2002). *The Iowa Department of Public Health gambling treatment services: Four years of evidence*. Boston: Division on Addiction, Harvard Medical

Shaffer, H. J., LaBrie, R. A., & LaPlante, D. A. (2004). Laying the foundation for quantifying regional exposure to social phenomena: considering the case of legalized gambling as a public health toxin. *Psychology of Addictive Behaviour*, *18*, 40–48.

Shao, R., Read, J., Behrens, T. E. J., & Rgers, R. D. (2013). Shifts in reinforcement signalling while playing slot machines as a function of prior experience and impulsivity. *Translational Psychiatry*, *3*, 1–9.

Sharpe, L. (2002). A reformulated cognitive-behavioral model of problem gambling. A biopsychosocial perspective. *Clinical Psychology Review*, *22*, 1–25.

- Shead, N. W., & Hodgins, D. C. (2009). Affect-regulation expectancies among gamblers. *Journal of Gambling Studies*, 25, 357–375.
- Sheikh, J. I., & Yesavage, J. A. (1986). Geriatric Depression Scale (GDS): *Recent evidence and development of a shorter version*. *Clinical Gerontology: A Guide to Assessment and Intervention*, (pp.165–173). New York: The Haworth Press.
- Shua-Haim, J., Koppuzha, G., & Gross, J. (1996). A simple scoring system for clock – drawing in patients with Alzheimer's disease. *Journal of the American Geriatric Society*, 44, 335.
- Simmel, E. (1920). Psychoanalysis of the gambler. *International Journal of Psychoanalysis*, 1, 352-353.
- Singleton, N., Bumpstead, R., & O' Brien, M. (2001). *Psychiatric Morbidity among Adults Living in Private Households, 2000*. London: The Stationery Office.
- Singh, A. J., Moufakkir, O., & Holecek, D. F. (2007). Development of a trip profile for elderly American casino visitors. *Journal of Retail and Leisure Property*, 6, 61-68.
- Skinner, B. F. (1938). *The behaviour of organisms*. New York: Appleton-Century-Crofts.
- Skinner, B. F. (1953). *Science and Human Behaviour*. New York: Macmillan.

Slutske, W. S., Zhu, G., Meier, M. H., & Martin, N. G. (2011). Disordered gambling as defined by the Diagnostic and Statistical Manual of Mental Disorders and the South Oaks Gambling Screen: Evidence for a common etiologic structure. *Journal of Abnormal Psychology, 120*, 743-751.

Smith, J. A., Harré, R., & Van Langenhove, L. (1995). Idiography and the case study. In

Smith, J. A., Harre, R., & Van Langenhove, L., editors, *Rethinking psychology*. London: Sage.

Smith, J. A., Jarman, M., & Osborne, M. (1999). Doing interpretative phenomenological analysis. In Murray, M. and Chamberlain, K., editors, *Qualitative health psychology: Theories and methods*. London: Sage.

Smith, J. A. & Osborn, M. (2003). Interpretative phenomenological analysis. In J.A. Smith. Ed. *Qualitative Psychology: A practical guide to research methods*, (pp. 51-80). London: Sage publications.

Smith, J. A. (2008). *Qualitative Psychology. A Practical Guide to Research Methods*, Second Edition. London: Sage.

Smith, G., & Rubenstein, D. (2011). Socially responsible and accountable gambling in the public interest. *Journal of Gambling Issues, 25*. doi: 10.4309/jgi.2011.25.5

- Snyder, A. G., Stanley, M. A., Novy, D. M., Averill, P. M., & Beck., J. G. (2000). Measures of depression in older adults with generalized anxiety disorder: A psychometric evaluation; *Depression & Anxiety, 11*, (3), 114-120.
- Soule, A., Babb, B., Evandrou, M., Balchin, S., & Zealey, L. (2005). *Focus on older people*. Office for National Statistics/Department of Work and Pensions, London: The Stationery Office.
- Southwell, J., Boreham, P., & Laffan, W. (2008). Problem gambling and the circumstances facing older people: A study of gaming machine players aged 60 + in licensed clubs. *Journal of Gambling Studies, 24*, (2), 151–174.
- Specker, S., Carlson, G., Edmonson, K., Johnson, P., & Marcotte, M. (1996). Psychopathology in pathological gamblers seeking treatment. *Journal of Gambling Studies, 12*, 67-81.
- Sproston, K., Erens, B., & Orford, J. (2000) *Gambling Behaviour in Britain: Results from the British Gambling Prevalence Survey*. National Centre for Social Research.
- Sproston, K., Hing, N., & Palankay, C. (2012). *Prevalence of gambling and problem gambling in New South Wales*. Sydney: NSW Office of Liquor, Gaming and Racing.
- Sprott, D. E., Brumbaugh, A. M., & Miyazak, A. D. (2001). Motivation and ability as predictors of play behaviour in state-sponsored lotteries: An empirical assessment of psychological control. *Psychology & Marketing, 18*, 9, 973–983. doi: 10.1002/mar.1038

- Steel, Z., & Blaszczynski, A. (1996). The factorial structure of pathological gambling. *Journal of Gambling Studies, 12*, 3-20.
- Steinke, E. E. (2004). Research ethics, informed consent, and participant recruitment. *Clinical Nurse Specialist, 18*, 88–95.
- Stevens, P. E., & Pletsch, P. K. (2002). Informed consent and the history of inclusion of women in clinical research. *Health Care for Women International, 23*, 809–81.
- Stewart, D., & Oslin, D.W. (2001). Recognition and treatment of late-life addictions in medical settings. *Journal of Clinical Geropsychology, 7*, 145–158.
- Stewart, S. H., & Zack, M. (2008). Development and psychometric evaluation of a three-dimensional Gambling Motives Questionnaire. *Addiction, 10*, 7, 1110–1117.
doi:10.1111/j.1360-0443.2008.02235.x.
- Stewart, S. H., Zack, M., Collins, P., & Klein, R. M. (2008). Sub typing pathological gamblers on the basis of affective motivations for gambling: Relations to gambling problems, drinking problems, and affective motivations for drinking. *Psychology of Addictive Behaviours, 22*, (2), 257.
- Stinchfield, R. (1999). Gambling Treatment Outcomes Monitoring System. In K. M. Coughlin (Ed), (1999), *Behavioural Outcomes and Guidelines Sourcebook* (pp. 173-174,). New York: Faulkner & Gray.

Stinchfield, R. (2002). Reliability, validity, and classification accuracy of the South Oaks Gambling Screen (SOGS). *Addictive Behaviours*, 27, 1-19.

Stinchfield, R. (2010). A critical review of adolescent problem gambling assessment instruments. *International Journal of Adolescent Medicine and Health*, 22, 1, 77-93.

Stinchfield, R. (2003). Reliability, validity, and classification accuracy of a measure of DSM IV diagnostic criteria for pathological gambling. *The American Journal of Psychiatry*, 160, 180–182. doi:10.1176/appi.ajp.160.1.180

Stinchfield, R., Govoni, R., & Frisch, R. G. (2005). DSM-IV diagnostic criteria for pathological gambling: Reliability, validity, and classification accuracy. *American Journal on Addictions*, 14, 73–82.

Stinchfield, R., McCreedy, J., Turner, N. E., Jimenez-Murcia, S., Petry, N. M., Grant, J., Welte, J., Chapman, H., & Winters, K. C. (2015). Reliability, Validity, and Classification Accuracy of the DSM-5 Diagnostic Criteria for Gambling Disorder and Comparison to DSM-IV. *Journal of Gambling Studies*, 23, (3), 1-18.
doi: 10.1007/s10899-015-9573-7

Stitt, B. G., Giacomassi, D., & Nichols, M. (2003). Gambling among older adults: A comparative analysis. *Experimental Aging Research*, 29, (2), 189–203.

Strauss, A. L., & Corbin, J. (1990). *Basics of qualitative research: Grounded Theory procedures and techniques*. Newbury Park, CA: Sage.

Strauss, A. L. & Corbin, J. (1998). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*, (2nd ed). Thousand Oaks: Sage.

Strong, D. R., & Kahler, C. W. (2007). Evaluation of the continuum of gambling problems using the DSM-IV. *Addiction*, *102*, (5), 713-721. doi:10.1111/j.1360-0443.2007.01789.x

Subramaniam, M., Wang, P., Soh, P., Vaingankar, J. A., Chong, S. A., Browning, C. J., Thomas, S. A., & Chong, S. A. (2015). Prevalence and determinants of gambling disorder among older adults: A systematic review. *Addictive Behaviors*, *41*, 199-209.

Suurvali, H., Hodgins, D., Toneatto, T., & Cunningham, J. (2008). Treatment seeking among Ontario problem gamblers: Results of a population survey. *Psychiatric Services*, *59*, 1343–1346.

Suzman, R. M., Willis, D. P., & Manton, K. G. (1992). *The oldest old*. New York. Oxford University Press, New York.

Swedish National Institute of Public Health. (2012a). *Health at Stake: A longitudinal study on gambling and health in Sweden 2008 – 2015*. Ostersund: Swedish National Institute of Public Health.

Taghipour, A. (2014). Adopting Constructivist versus Objectivist Grounded Theory in Health Care Research: A Review of the Evidence. *Journal of Midwifery and Reproductive Health*. *2*, (2), 100-104.

Tan, R., & Wurtzburg, S. (2004). *Problem gambling: New Zealand perspectives on treatment*. Wellington, New Zealand: Steele Roberts.

Tao, V. Y., Wu, A. M., Cheung, S. F., & Tong, K. K. (2011). Development of an indigenous inventory GMAB (gambling motives, attitudes and behaviours) for Chinese gamblers: An exploratory study. *Journal of Gambling Studies*, 27, (1), 99–113.

Tavares, H., Zilberman, M. L., Beites, F. J., & Gentil, V. (2001). Gender differences in gambling progression. *Journal of Gambling Studies*, 17, 151–159.

Thomas, A. C., Allen, F. C., & Phillips, J. (2009). Electronic gaming machine gambling: Measuring motivation. *Journal of Gambling Studies*, 25, 343–355. doi; 10.1007/s10899-009-9133-0.

Thomas, S. A., Piterman, L., & Jackson, A. C. (2008). Problem gambling: What do general practitioners need to know and do about it? *Medical Journal of Australia*, 189, (3), 135–136.

Tirachaimongkol, L. C., Jackson, A. C., & Tomnay, J. E. (2010). Pathways to problem gambling in seniors. *Journal of Gerontological Social Work*, 53, (6), 531–546.

Toce-Gerstein, M., Gerstein, D.R., & Volberg, R.A. (2003), A hierarchy of gambling disorders in the community. *Addiction*, 98, 1661-1672

Toneatto, T., Boughton, R., & Borsi, D. (2002). *A comparison of male and female pathological gamblers*. Ontario: Ministry of Health and Long Term Care.

Toneatto, T., & Gunaratne, M. (2009). Does the treatment of cognitive distortions improve clinical outcomes for problem gambling? *Journal of Contemporary Psychotherapy*, *39*, 221–229.

Tse, S., Hong, S. I., Wang, C. W., & Cunningham-Williams, R. M. (2012). Gambling behaviour and problems among older adults: a systematic review of empirical studies. *Journal of Gerontology, Series B, Psychological Sciences and Social Sciences*, *67*, (5), 639-52. doi: 10.1093/geronb/gbs068.

United States Department of Health and Human Services. (2011). Substance Abuse and Mental Health Services Administration. Center for behavioural health statistics and quality. doi:10.3886/ICPSR34876.v1.

Vachon, D. D., & Bagby, R. M. (2009). Pathological gambling subtypes. *Psychological Assessment*, *21*, 608–615.

Vallerand, R. J., Blanchard, C., Mageau, G. A., Koestner, R., Ratelle, C., & Le´onard, M. (2003). Les Passions de L’A^ me: On obsessive and harmonious passion. *Journal of Personality and Social Psychology*, *85*, (4), 756–767.

Vander Bilt, J., Dodge, H., Pandav, R., Shaffer, H., & Ganguli, M. (2004). Gambling participation and social support among older adults: A longitudinal community study. *Journal of Gambling Studies*, *20*, (4), 373–390.

Victor, C., Scambler, S., Bond, J., & Bowling, A. (2000). Being alone in later life: Loneliness, social isolation and living alone. *Reviews in Clinical Gerontology, 10*, 407-417.

Victorian Department of Justice. (2009). *A study of gambling in Victoria-problem gambling from a public health perspective*. Victoria, Australia: Department of Justice.

Victoria Department of Justice. (2011). *The Victorian Gambling Study: A longitudinal study of gambling and public health – Wave two findings*. Melbourne: Victoria Department of Justice.

Volberg, R. (2003). Has there been a “feminization” of gambling and problem gambling in the United States? *eGambling: The Electronic Journal of Gambling Issues, 8*.

Volberg, R. A. (2010). *Comparing longitudinal gambling studies. Methods and findings*. Melbourne: Victoria Office of Gaming and Racing.

Volberg, R. A., Gupta, R., Griffiths, M. D., Olason, D. T., & Delfabbro, P. (2010). An international perspective on youth gambling prevalence studies. *International Journal of Adolescent Medicine and Health, 22*, 3–38.

Volberg, R. A., & Williams, R. J. (2013). Epidemiology; An International Perspective. In: D. C. S., Richard, A., Blaszczynski & L., Nower. *The Wiley-Blackwell Handbook of Disordered Gambling*; Chichester, UK; West Sussex, PO19 8SQ, UK.

doi:10.1002/9781118316078.ch16.

Volkers, A. C., Nuyen, J., Verhaak, P. F. M., & Schellevis, F. G. (2004). The problem of diagnosing major depression in elderly primary care patients. *Journal of Affective Disorders*, 82, (2), 259–263 <http://dx.doi.org/10.1016/j.jad.2003.11.003>

von Hippel, W. (2007). Aging, executive functioning, and social control. *Current Directions in Psychological Science*, 16, 240-244. doi: 10.1111/j.1467-8721.2007.00512

von Hippel, W., Ng, L., Hucker, J., & Hilliar, K. (2007). Executive functioning and problem gambling in older adults. *Current directions in Psychological Science*. Available at: <http://www.psychologicalscience.org/index.php/news/releases/brain-atrophy-in-elderly-leads-to-unintended-racism-depression-and-problem-gambling.html>

von Hippel, W., Ng, L., Abbot, L., Caldwell, S., Gill, G., & Powell, K. (2009). Executive functioning and gambling: Performance on the trail making test is associated with gambling problems in older adult gamblers. *Aging, Neuropsychology, and Cognition*, 16, (6), 654–670.

Waiman, P., Mok, M., & Hraba, J. (1991). Age and gambling behaviour: A declining and shifting pattern of participation. *Journal of Gambling Studies*, 7, (4), 313-335.

Walker, M. B. (1992). *The psychology of gambling*. New York: Pergamon.

Wardle, H., Dobbie, F., Kerr, J., & Reith, G. (2009). *Questionnaire development for a longitudinal study of gamblers*. Phase 1: Gambling commission.

<http://www.gamblingcommission.gov.uk/pdf/Questionnairedevelopmentforalongitudinalstudyofgamblers-phase1-June2009.pdf>.

Wardle, H., Sproston, K., Orford, J., Erens, B., Griffiths, M., Constatine, R., & Piggot, S. (2007). *British Gambling Prevalence Survey*. National Centre for Social Research.

Wardle, H., Moody, A., Spence, S., Orford, J., Volberg, R., Jotangia, D., Griffiths, M., Hussey, D., & Dobbie, F. (2011). *British Gambling Prevalence Survey*. Report prepared for the Gambling Commission; 2010. Available at; <http://www.gamblingcommission.gov.uk/PDF/British%20Gambling%20Prevalence%20Survey%202010.pdf> accessed October, 2014.

Welte, J., Barnes, G., Wieczorek, W., Tidwell, M. C., & Parker, J. (2001). Alcohol and gambling pathology among U.S. adults: Prevalence, demographic patterns and comorbidity. *Journal of Studies on Alcohol*, 62, 706–712.

Welte, J. W., Barnes, G. M., Wieczorek, W. F., Tidwell, M.-C., & Parker, J. (2002). Gambling participation in the U.S.: Results from a national survey. *Journal of Gambling Studies*, 18, 313-337.

Welte, J., Barnes, G. M., Wieczorek, W., Tidwell, M. C., & Parker, J. (2001). Alcohol and gambling pathology among U.S. adults: Prevalence, demographic patterns, and comorbidity. *Journal of Studies on Alcohol*, 62, 706–712.

Welte, J. W., Wieczorek, W. F., Barnes, G. M., Tidwell, M., & Hoffman, J. H. (2004b). The relationship of ecological and geographic factors to gambling behaviour and pathology. *Journal of Gambling Studies*, *20*, (4), 405–423.

Welte, J. W., Wieczorek, W. F., Barnes, G. M., & Tidwell, M. O. (2006). Multiple risk factors for pathological gambling: Individual, social, and ecological. *Journal of Applied Social Psychology*, *36*, 1545–1565

Welte, J. W., Barnes, G. M., Tidwell, M. C., & Hoffman, J. H. (2008). The prevalence of problem gambling among U.S. adolescents and young adults: Results from a national survey. *Journal of Gambling Studies*, *24*, 119–133. doi:10.1007/s10899-007-9086-0

Welte, J. W., Barnes, G. M., Tidwell, M. O., & Hoffman, J. H. (2011). Gambling and problem gambling across the lifespan. *Journal of Gambling Studies*, *27*, (1), 49–61.

Welte, J. W., Barnes, G. M., Tidwell, M., Hoffman, J. H., & Wieczorek, W., F. (2015). Gambling and Problem Gambling in the United States: Changes between 1999 and 2013. *Journal of Gambling Studies*, *31*, 695–715. doi; 10.1007/s10899-014-9471-4.

Wenzel, M., McMillen, J., Marshall, D., & Ahmed, E. (2004). *Validation of the Victorian Gambling Screen*, Melbourne: Australian National University.

Whelan, J., Steenbergh, T., & Meyers, A. (2007). *Problem and pathological gambling*. Ashland, OH, US: Hogrefe & Huber Publications.

Whitbourne, S. K., & Halgin, R. P. (2013). *Abnormal psychology: Clinical perspectives on psychological disorders*, (7th Ed). New York: McGraw-Hill.

Whiteside, S. P., & Lynam, D. R. (2001). The five factor model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and Individual Differences*, 30, 669–689. [http://dx.doi.org/10.1016/S0191-8869\(00\)00064-7](http://dx.doi.org/10.1016/S0191-8869(00)00064-7)

Wiebe, J. (2000). *Prevalence of gambling and problem gambling among older adults in Manitoba*. Winnipeg, MB: Addictions Foundation of Manitoba.

Wiebe, J. M. D., & Cox, B. J. (2005). Problem and probably pathological gambling among older adults assessed by the SOGS-R. *Journal of Gambling Studies*, 2, (2), 205–221.

Wiley, S. G. E., Shaw, S. M., & Havitz, M. E. (2000). Men's and women's involvement in sports: An examination of the gendered aspects of leisure involvement. *Leisure Sciences*, 22, 19–31. doi:10.1080/014904000272939

Williams, R. J., Rehm, J., & Stevens, R. M. G. (2011). *The Social and Economic Impacts of Gambling. Final report to the Canadian interprovincial consortium for gambling research*. <http://hdl.handle.net/10133/1286>

Willig, C. (2001). *Introducing qualitative research in psychology: Adventures in theory and method*. Buckingham: Open University Press.

- Wildman, R. W. (1998). *Gambling: An attempt at an integration*. Edmonton, Alberta, Canada: Wynne Resources.
- Wilson, R, Mendes de Leon C, Barnes L, Schneider J, Bienias J, Evans D., & Bennet D. (2002). Participation in cognitively stimulating activities and risk of incident Alzheimer disease. *Journal of the American Medical Association*, 287, 742–748.
- Wills, T. A., & Hirky, A. E. (1996). Coping and substance abuse: a theoretical model and review of the evidence. In: Zeichner M, & Eudle N. S, (eds). *Handbook of coping theory, research, and applications*. (pp. 279-302). New York: Wiley.
- Winters, K. C., Stinchfield, R. D., & Fulkerson, J. (1993). Toward the development of an adolescent gambling problem severity scale. *Journal of Gambling Studies*, 9, 63–84.
- Winters, K. C., Stinchfield, R. D., Botzet, A., & Anderson, N. (2002). A prospective study of Youth gambling behaviours, *Psychology of Addictive Behaviours*, 16, 3-9.
doi: 10.1037/0893-164X.16.1.3
- Winters, K. C., Specker, S., & Stinchfield, R. (2002). Measuring pathological gambling with The Diagnostic Interview for Gambling severity (DIGS). In J.J. Marotta, J.A. Cornelius, & W. R. Eadington (Eds.), *The downside: Problem and pathological gambling* (pp. 143–148). Reno, NV: University of Nevada, Reno.
- Wohl, M. J. A., Sztainert, T., & Young, M. M. (2013). The CARE Model; How to improve Industry-Government-Health Care Provider Linkages. In; D. C. S., Richard, A.,

Blaszczynski & L., Nower. *The wiley-blackwell handbook of disordered gambling*; Chichester, UK; West Sussex, PO19 8SQ, UK. doi:10.1002/9781118316078.ch16.

Wood, R. T. A., & Griffiths, M. D. (2007): A qualitative investigation of problem gambling as an escape-based coping strategy. *Psychology, Psychotherapy Theory Research and Practice* 80, 107–125.

Wood, J., & Williams. R. J. (2009). *Internet Gambling, Prevalence, problems and policy options*. Ontario, Canada, Ontario Problem Gambling Research Centre.

Wong, N. (1989). *Theories of personality and psychopathology*. In H.I. Kaplan & B.J. Sadock (Eds.), *Comprehensive textbook of psychiatry: Vol. 1* (5th ed.) (pp. 356–410). Baltimore: Williams & Wilkins.

Worhusky, P. D., Malison, R. T., Rogers, R. D., & Potenza. M. N. (2014). Altered neural correlates of reward and loss processing during simulated slot-machine fMRI in pathological gambling and cocaine dependence. *Drug and Alcohol Dependence*, available online pre-publication at <http://www.sciencedirect.com/science/article/pii/S0376871614010758> [Accessed Nov 4, 2014].

World Health Organization; WHO. (2012). *Definition of an older or elderly person*, Health statistics and health information systems. Available at: <http://www.who.int/healthinfo/survey/ageingdefnolder/en/index.html> [Accessed 8th October 2015].

World Health Organisation (WHO), (2013). Health statistics and health information

Available at: <http://www.who.int/healthinfo/survey/ageingdefnolder/en/>

Wrase, J., Schlagenhauf, F., Kienast, T., Wustenberg, T., Bermpohl, F., Kahnt, T., Beck, A., Strohle, A., Juckel, G., Knutson, B., & Heinz, A. (2007). Dysfunction of reward processing correlates with alcohol craving in detoxified alcoholics. *NeuroImage*, *35*, 787–794.

Wu, L. T., & Blazer, D. G. (2014). Substance use disorders and psychiatric comorbidity in mid and later life: A review. *International Journal of Epidemiology*, *43*, 304–317.

Wulfert, E., Roland, B. D., Hartley, J., Wang, N., & Franco, C. (2005). Heart rate arousal and excitement in gambling: Winners versus losers. *Psychology of Addictive Behaviours*, *19*, (3), 311-316.

Wynne, H., & McCready, J. (2005). *Examining gambling and problem gambling in Ontario aboriginal communities*. Ontario: Ontario Problem Gambling Research Centre.

Yakovenko, I., Quigley, L., Hemmelgarn, B. R., Hodgins, D. C., & Ronksley, P. (2015). The efficacy of motivational interviewing for disordered gambling: Systematic review and meta-analysis, *Addictive Behaviours*, *43*, 72-78. doi: 10.1016/j.addbeh.2014.12.011

Yeoman, T., & Griffiths, M. D. (1996). Adolescent machine gambling and crime. *Journal of Adolescence, 19*, 183-188.

Yi, S., & Kanetkar, V. (2011). Coping with guilt and shame after gambling loss, *Journal of Gambling Studies, 27*, 371–387.

Zamarian, L., Sinz, H., Bonatti, E., Gamboz, N., & Delazer, M. (2008). Normal aging affects decisions under ambiguity, but not decisions under risk. *Neuropsychology, 22*, (5), 645–657.

Zangeneh, M., & Hason, T. (2006). Suicide and gambling. *International Journal of Mental Health and Addiction, 4*, 191–193.

Zaraneck, R. R., & Chapleski, E. E. (2005). Casino gambling among urban elders: Just another social activity? *Journals of Gerontology: Social Sciences, 60B* (2), S74–S81.

Zaraneck, R. R., & Lichtenberg, P. A. (2008). Urban elders and casino gambling: Are they at risk of a gambling problem? *Journal of Aging Studies, 22*, (1), 13–23.

Zimmerman, M., Chelminski, I., & Young, D. (2006). A psychometric evaluation of the DSM-IV pathological gambling diagnostic criteria. *Journal of Gambling Studies, 22*, 329–337.

Zuckerman, M., Eysenck, S. B., & Eysenck, H. J. (1978). Sensation seeking in England and America: Crosscultural, age, and sex comparisons. *Journal of Consulting and Clinical Psychology, 46*, (1), 139–149. doi:10.1037/0022-006X.46.1.139.

Appendix I: Participants Background Details

Study 3 An Interpretive Phenomenological Analysis of Gambling Behaviour in UK Older Adult Women

Mary is a 65-year-old widow her son has Huntingdon's Disease and cares for him fulltime. She budgets her income to play bingo and the slots regular and states she often spends more than she can afford without realising. Mary has mental health problems and gambles as a break, to get out of the house and see the girls.

Maria is a 78-year-old widow and retired from taxi driving aged 70. She plays bingo to fill her time since retiring at the seaside and to socialise. Her family lives away and she is lonely. Since joining the club she helps out calling bingo in the local community hall.

Dora is 80 years of age and a widow she has a large loving family that visit regular. She has had extensive surgery and is in remission from cancer and lives with her son. Bingo is her only form of socialisation outside of the family unit and she loves to meet the holidaymakers that join. Her family think it is great that she gets out to the bingo.

Jackie is a 63-year-old widow she left her job as a doctor's receptionist to care for her husband who passed with dementia. She has just started to adjust to life alone. Jackie plays bingo regular to fill her time and enjoys her walking club. She provides transport to the bingo for other ladies that live nearby.

Doris is 60 years of age and lives with her husband she is diagnosed with Obsessive Compulsive Disorder (OCD) and has been abstinent from alcohol for 25 years she is a

sponsor at Alcoholics Anonymous (AA) and mentors via Facebook. Doris plays online bingo occasionally and lives near the arcades dropping in if she feels like it. Her son has multiple addictions including gambling, alcohol and drug abuse and fears he will die soon. She volunteers at the local Oxfam.

Josie is 63 years of age, divorced and lives alone. She came to live at the seaside following two abusive relationships and claims she has no confidence. Josie plays bingo regular and visits the bookies to play the Irish lotteries. She states that when she goes in to the bookies she cannot look at the machines and does not play online bingo anymore fearing she would lose the roof from over her head. She has to budget and she has overspent on her gambling in the past. She would love a part time job and is a mature student at the local college.

Harriet is 78 and lives alone with her dog; her partner died 2 years ago stating she is lonely and unable to walk far. She retired from Birdseye aged 62 and still sees some of her old work colleagues at the bingo. Bingo for her is an outlet she loves to talking to the staff, having a meal and getting out.

Sandy is 69 and widowed. She has fond memories of playing bingo with her mum in her 20's. She has a family but they are busy working. She gambles depending on her budget and visits her local bingo hall weekly alone and she enjoys a martini whilst there.

Vera is 76 and gambles regular with her husband on the slot machines and at the bingo. She states '*she does not lose as much money playing bingo as she does playing the slots*'. Gambling on the slots is exciting for her reporting '*I could get the big money out of them*'. For Vera Playing bingo is a reason to leave the house and an opportunity to see people.

Doreen is 72 she holidays with her husband in their caravan at the coast. Whilst holidaying they play in the arcades and bingo. She likes to play regular back home to socialise and get out of the house although not always with her husband.