

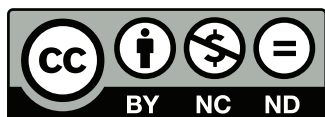
# Developing and validating a scale to measure the enacted and felt stigma of gambling

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**Dr Phillip Donaldson, Dr Talitha Best, Ms Erika Langham,  
Dr Matthew Browne, and Ms Anthea Oorloff**

Central Queensland University

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#### **Conflict of interest declaration**

The authors declares no conflict of interest in relation to this report or project.

#### **Victorian Responsible Gambling Foundation**

Level 6, 14-20 Blackwood Street

North Melbourne, Victoria, 3051

PO Box 2156

Royal Melbourne Hospital

Victoria, 3050

Tel +61 3 9452 2600

Fax +61 3 9452 2660

ABN: 72 253 301 291

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### **A tribute to Dr Phillip Donaldson**

Passed away 4 April, 2015

Dr Phillip Donaldson received a PhD in cognitive psychology from Flinders University in 2010. His research interests in spatial cognition, attention and visual perception along with his passion for experimental design were well suited to research in the areas of gambling and online gaming behaviour.

Phill had established himself as a gifted early career researcher in the gambling field, having contributed as a founding member of CQUniversity's Experimental Gambling Research Laboratory.

His contributions included work on the impact of EGM jackpots on gambling behaviour, investigations into pre-commitment features, gambling environments, innovation in gambling products, and the measurement of gambling related harm. He was chief investigator on the project that developed the scale to measure gambling related stigma.

In addition to being a talented early career researcher, Phill was a gifted lecturer, having won multiple awards for teaching innovation and quality.



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## List of acronyms

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AHSS	Australian Health and Social Sciences
ATGS	Attitudes Towards Gambling Scale
CATI	Computer Assisted Telephone Interviewing
CPGI	Canadian Problem Gambling Index
CSPG	Consumption Screen for Problem Gambling
DSSS	Depression Self Stigma Scale
EFA	Exploratory Factor Analysis
EGM	Electronic Gambling Machine
GESS	Gambling Experienced Stigma Scale
GPSS	Gambling Perceived Stigma Scale
HIV	Human Immunodeficiency Virus
ICC	Item Information Curves
ISMI	Internalised Stigma of Mental Illness (Scale)
MAP	Minimum Average Partial
PDD	Perceived Devaluation Discrimination (Scale)
PGSI	Problem Gambling
PGSI	Problem Gambling Severity Index
PRL	Population Research Laboratory
RG	Recreational Gambling
SASS	Substance Abuse Self Stigma (Scale)
SEM	Structural Equation Modelling
SSOSH	Self Stigma of Seeking Help (Scale)
SS	Stigma Scale
TIC	Test Information Curve
VSS	Very Simple Structure





## Executive summary

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CQUniversity was engaged by The Victorian Responsible Gambling Foundation to conduct research into negative beliefs about gambling and people who gamble. This study investigated the stigma associated with gambling in the context of both internally experienced and externalised (perceived) stigma.

In the fifty years since Goffman's (1963) seminal work on stigma, there has been significant work undertaken to refine the conceptualisation of stigma as a phenomenon, to explore the experience and effects of stigma, and to quantify the level of stigma associated with different stigmatising circumstances.

Australian research shows that stigma is a major barrier to treatment seeking (Rockloff & Schofield, 2004), and may impede the accurate measurement of problem gambling prevalence. The objective of this study was to develop a scale that measures stigma related to gambling behaviour that will provide researchers, policymakers, industry bodies and clinicians with a tool that contributes to a growing understanding of the gambling experiences of individuals and the impacts of gambling on communities.

This report describes the methodology, survey instrument, sampling design, online data collection procedures, estimated sampling error, weighting calculations, response rates and final data for the study.

In order to undertake the research, two new survey instruments were developed to measure the experienced and perceived stigma associated with gambling at both recreational and problem levels. The researchers reviewed existing measures of stigma associated with other non-gambling behaviours (e.g., alcohol, drug abuse, smoking, eating disorders) to construct items that were conceptually related to gambling behaviour.

A total of 1370 Australian adults (50.6% female) participated in the Australian Health and Social Sciences (AHSS) survey administered by the Population Research Laboratory at CQUniversity.

The AHSS survey comprises a panel of Australian adults recruited from each state and territory using random digit dialling of landline and mobile telephones via computer assisted telephone interviewing (CATI) to be part of a longitudinal study panel. Panel members provide basic demographic information and sufficient background information to be screened for more specific sub-samples and are invited to take part in regular AHSS surveys throughout the year.

At the commencement of the current study there were 3165 AHSS panel members in total. Participants ranged in age between 19 and 92 years ( $M = 58.89$ ,  $SD = 12.68$ ). Fifty-three (53) respondents logged onto the survey but exited prior to completion and have been excluded from this analysis, with a remaining 1370 respondents completing the whole survey (response rate 44.96%).

The results were analysed with internal reliability analysis, factor analysis and multivariate analysis to explore the measurement of perceived and experienced stigma in a community sample; taking into account respondents' gambling experience and relevant socio-demographic information.

The results supported a model of Perceived Stigma along two dimensions (Contempt and Ostracism), and a uni-dimensional model of Experienced Stigma. The scales were shown to have strong psychometric properties and to differentiate well between stigmas associated with recreational and problem gambling behaviours.

These scales offer utility in terms of the measurement of stigma relating to gambling and its impact as a potential barrier to treatment for those who experience problems with gambling. In addition, the scales allow assessment of the impact of stigma on the conduct of research into gambling, and measurement of the effectiveness of efforts to reduce gambling related stigma.

Importantly, the findings of this study provide a broad and rigorous platform on which to base future scale validation and application.

## Background

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### Aims and Scope

The purpose of this literature review is to investigate the stigma associated with gambling in order to locate scales that have successfully been used to measure perceived and internalised stigma. In addition, this review will consider how stigma associated with other comparable conditions and behaviours has been conceptualised and measured in order to identify and articulate characteristics or dimensions of stigma unique to gambling and problem gambling. It is anticipated that a more complete understanding of the nature of the stigma associated with gambling and problem gambling will inform the development of a tool to measure stigma in gambling behaviour. Stigma has been cited in several studies as a barrier to self-identification and help-seeking behaviour for problem gambling (Gainsbury, Hing, & Suhonen, 2013; Horsch, 2011; Productivity Commission, 2010; Rockloff & Schofield, 2004) and may also impede the accurate measurement of prevalence of problem gambling (CQUniversity, 2013). A validated tool will be important for advancing our understanding of what impedes treatment seeking, for understanding of the other negative effects of prejudice faced by gamblers in recovery, and managing the impact of stigma on gambling research.

One of the earliest descriptions of social stigma was as an attribute that deeply discredited the individual and reduced them from a whole person to one that was considered tainted or discounted (Goffman, 1963). Stigma was described as a construction of society more than as an attribute of the individual. A more recent description of stigma attempts a reconceptualization from a sociological perspective, “stigma is defined as the co-occurrence of labelling, stereotyping, separation, status loss, and discrimination in a context where power is exercised” (Hatzenbuehler, Phelan, & Link, 2013). Stigma may be conceptualised in terms of perceived, internalized (felt) and enacted stigma (Goffman, 1963). The experience of stigma has also been described as that of: ‘perceiving’ or believing in the presence of stigmatising attitudes and actions in a society; or as an ‘internalised’ process, where negative thoughts or feelings emerge in a stigmatised individual from identification with a stigmatised group (Luoma et al., 2007). In other words, an individual may hold beliefs about how others feel towards a stigmatised condition or behaviour and may internalise or personally apply these beliefs to themselves when they come to possess the condition or to engage in the behaviour. These personal beliefs become apparent once they acquire the ‘label’ of the stigmatised condition (Link, 1987). Further research has shown, however, that although individuals with a stigmatised condition might be aware of the attitudes of others they might not always internalise them (Luoma, O’Hair, Kohlenberg, Hayes, & Fletcher, 2010; Luoma et al., 2013).

Thus three separate experiences of stigma were considered for the current research project. Enacted stigma as identified by Goffman (1963) which was the overt behaviours (such as ostracism or direct social discrimination) by others to discredit or discount a person with a specific condition. Perceived stigma captures the beliefs of a person with a specific condition regarding how others feel about it, and that those feelings are negative. Internalised stigma relates to the projection of those negative feelings by the person with the specific condition within themselves, in terms of negative self-talk or decreased self-esteem. However, enacted stigma as a specific description, whilst important in understanding outcomes of discrimination, has been included within the construct of perceived stigma within the current review. Perceived stigma measurement may be more effective when attempting to determine the existence of discriminating behaviours or attitudes in a population as these are framed from the view of others rather than from oneself and are, thus, unlikely to be affected by evaluation apprehension and social desirability bias.

## Gambling and Problem Gambling

Gambling is defined as an activity involving the wager of something of value on an outcome that is determined by chance and has a history that can be traced back to ancient times (Preston, Bernhard, Hunter, & Shannon, 1998). Gambling is a popular pastime in Australia and other international jurisdictions with approximately 70% of the Australian population participating in gambling activities each year (Productivity Commission, 2010). Consistent with a public health approach to gambling, it is important to note that it is a recreational activity of play that contributes significantly to a nation's revenue and employment with a proportion of the funds generated being redistributed to various community groups (Delfabbro & King, 2012). Gambling is undertaken in a variety of forms including lotteries, scratch ticket lotteries, table games (such as poker, blackjack or roulette), Electronic Gaming Machines (EGMs), racing, and online wagering and gaming. In 2008-2009, around \$19 billion was spent by consumers on gambling activities in Australia (Productivity Commission, 2010). For most, gambling is an enjoyable activity that brings little risk to themselves or others (Korn, Gibbins, & Azmier, 2003; Korn & Shaffer, 1999). However, for a minority, the harm can be significant and may also impact on friends, family and the broader community. It is estimated that in 2009 around 0.5 – 1% (80,000 – 160,000) of the Australian population were classified as experiencing problems with gambling (Productivity Commission, 2010). A further 1.4 – 2.1% (230,000 – 350,000) were at moderate risk, making them vulnerable to problem gambling. Accordingly, problem gambling is a significant public health concern. Harm relating to gambling includes extensive impacts on the health, employment, financial, emotional and relationship state of not only the individual but the family, friends, colleagues and communities involved (Holdsworth, Nuske, Tiyce, & Hing, 2013; Suomi et al., 2013).

A public health approach (a framework that has been used to address complex issues relating to the health of populations such as obesity and smoking) is now being applied to explore and address the social and economic determinants of gambling (Shaffer & Korn, 2002). This approach recognises that harm minimisation strategies not only need to address those experiencing problems with gambling and those immediately involved, but also the social environments in which problem gambling occurs. Primary prevention strategies involve addressing the risk of harm within the healthy or unaffected population as well as those at risk of problem gambling. Support and treatment options, intervention and consumer safety strategies, and gambling policy reforms require further and ongoing research. However, issues of stigma impact on the ability to conduct comprehensive research in the area with prospective research participants desiring to avoid being pathologically labelled as well as people experiencing problems with gambling wanting the problems to remain concealed (Carroll, Rodgers, Davidson, & Sims, 2013). A survey conducted by the Productivity Commission (2010) found that only 33% of people with gambling problems indicated that they would answer honestly in a prevalence survey (Productivity Commission, 2010).

Stigma has previously been identified as being an important barrier to treatment seeking behaviours for people experiencing problems with their gambling (Pulford et al., 2009a; Rockloff & Schofield, 2004; Suurvali, Cordingley, Hodgins, & Cunningham, 2009). Although there is evidence of positive outcomes for those who engage in and complete treatment for problem gambling (Gainsbury et al., 2013; Productivity Commission, 2010; Soberay, Faragher, Barbash, Brookover, & Grimsley, 2013), only a small proportion of people experiencing problems with gambling will seek out professional help. Over the 2007-2008 period in Australia, it was estimated that around 17,500 of the 80,000 – 160,000 people experiencing problems with gambling sought treatment (Productivity Commission, 2010). In one Australian study, only 17% out of the 24% of participants that reported wanting assistance (n=141) actually sought professional treatment for their problems with gambling (Davidson & Rodgers, 2010). Furthermore, delayed intervention can result in the presentation of more complicated cases later on, including co-morbidity with other mental illness such as depression,

anxiety and substance abuse disorders (Soberay et al., 2013), and significant loss of quality of life for both the person who gambles and their affected others.

Denial, pride, the desire to solve problems on their own, and the social stigma associated with having the problem (resulting in shame and embarrassment), are the most commonly cited major psychological determinants that influence the likelihood of engaging in help-seeking behaviour (Productivity Commission, 2010; Pulford et al., 2009a; Rockloff & Schofield, 2004; Suurvali et al., 2009). Denial may result from a reluctance to admit that a problem exists, but also may occur as a result of failure to recognise a problem in one's behaviour. This may be due to a lack of knowledge resulting from poor education, frequent exposure to negative role models (e.g., parents who gamble frequently), or other cognitive factors (Pulford et al., 2009a). The experiences of pride and the desire to resolve problems on their own relate to the individual's beliefs and perceptions of the value of their own self-control and desire for autonomy and, thus, reflect motivations related to internal states (Pulford et al., 2009a, 2009b; Suurvali, Hodgins, & Cunningham, 2010). Conversely, shame and embarrassment are feelings that are experienced once the problem has become known to others and are related to the label and stereotypes associated with problem gambling (Pulford et al., 2009a, 2009b; Suurvali et al., 2009; Suurvali, Hodgins, Toneatto, & Cunningham, 2012a, 2012b). As such, these latter motivations relate to the individual's beliefs about the potential negative consequences of being labelled as a 'problem gambler'. Non-psychological factors associated with avoidance or failure to seek treatment include the perceived or actual lack of appropriate, convenient, affordable and trusted services, while financial and relationship difficulties are most often cited as the major motivator for those who do seek treatment (Pulford et al., 2009a, 2009b; Rockloff & Schofield, 2004; Suurvali et al., 2010).

## What is known about stigma and gambling?

Stigma experienced by the individual (internalised stigma) has been shown to be a barrier to seeking treatment in relation to problems with gambling (Cooper, 2001; Dhillon, Horch, & Hodgins, 2011; Rockloff & Schofield, 2004; Sobell, Sobell, & Toneatto, 1991; Suurvali et al., 2009) and also in relation to numerous other behaviours and conditions, including but not limited to depression (Barney, Griffiths, Christensen, & Jorn, 2010; Caltar, Griffiths, & Christensen, 2011; Castaldelli-Maia et al., 2011; Gawley, Einarson, & Bowen, 2011), HIV (Chaudoir et al., 2012; Derlega, Winstead, Gamble, Kelkar, & Khuanghlawn, 2010; Herek & Capitanio, 1999; Rutledge, Whyte, Abell, Brown, & Cesnales, 2011) mental health (Björkman, Svensson, & Lundberg, 2007; Gibbs, Rae Olmsted, Brown, & Clinton-Sherrod, 2011; Reinsmith-Meyer, 2008), alcoholism (Corrigan et al., 2005; Fortney et al., 2004; Gibbs et al., 2011; Gray, 2010b; Schomerus, Corrigan et al., 2011; Smith, Dawson, Goldstein, & Grant, 2010; Sobell et al., 1991), substance abuse (Room 2005; Peluso & Blay 2008; Schomerus, Lucht et al. 2011), abortion (Kumar, Hessini, & Mitchell, 2009), chronic illness (Cataldo, Slaughter, Jahan, Pongquan, & Hwang, 2011; Lillis, Luoma, Levin, & Hayes, 2010), obesity (Lillis et al., 2010), eating disorders (Lillis et al., 2010; van Laar & Levin, 2006), suicide (Batterham, Caltar, & Christensen, 2013), homelessness (Breakey, Fischer, Nestadt, & Romanoski, 1992), and incarceration (Lebel, 2006; Murray, 2007; Schnittker & John, 2007; Wildeman, 2009). However, whilst perceived stigma has been considered in the literature, the role of internalised stigma in inhibiting treatment-seeking behaviour among those experiencing problems stemming from gambling behaviour is poorly understood at present.

Additionally, negatively held attitudes towards gambling are likely to be reflected by a degree of *enacted* stigma – that is, the public stigma: the negative attitudes held and displayed by others towards individuals who gamble. Enacted stigma has been described in terms of the actual

experiences of social discrimination (Luoma et al., 2007). Enacted stigma occurs when individuals experience difficulties in areas such as: gaining or maintaining employment, education, housing, and interpersonal acceptance as a result of having identified or been labelled as a 'problem gambler' (Horch, 2011; Horch & Hodgins, 2008). Such discrimination can be described from the perspective of the stigmatised individual, relating to outcomes such as missed employment opportunities or social rejection, or from the perspective of the general public in the forms of negative attitudes or discriminatory behaviours (Horch, 2011; Horch & Hodgins, 2008). This type of labelling involves the association of the stigmatised condition with undesirable characteristics or stereotypes (Link & Phelan, 2001). A study of 152 undergraduates found the most common stereotypes associated with problem gamblers to be that they are compulsive, impulsive, irresponsible, risk-taking and greedy (Horch, 2011). Furthermore, individuals labelled as a 'problem gambler' were thought least likely to be dependable, responsible, realistic and self-controlled (Horch, 2011).

Horch (2011) also found that undergraduate participants commonly presumed that others devalued and discriminated against problem gamblers. In other words, participants held beliefs that their own negative or stereotyped perceptions of gamblers were also held universally by others. This tendency to generalize the individual's internally held negative beliefs or attitudes towards gamblers to the greater population can be termed as 'perceived stigma'. (Horch, 2011; Horch & Hodgins, 2008) Perceived stigma can be applied from the perspectives of both enacted stigma (i.e., the perception among non-gamblers that others share their negative attitudes and stereotypes of gamblers) and internalised stigma (i.e., the perception among gamblers that others hold negative attitudes towards themselves and other gamblers) (Goffman, 1963; Horch, 2011; Horch & Hodgins, 2008). However, contrary to expectations, Horch (2011) found that gamblers classified as "problem gamblers", themselves did not share the same beliefs, and that shame, secrecy and withdrawal were significant factors contributing to adverse coping efforts amongst problem gamblers while embarrassment and pride were ranked as the primary reasons for not seeking treatment.

The current investigation will focus on examination of the characteristics of internalised (experienced) stigma and perceived stigma related to gambling and problem gambling. While the concept of enacted stigma is important to a complete understanding of treatment-seeking behaviour, practical limitations are likely to inhibit the validity and reliability and, consequently, the usefulness of measurements of enacted stigma. Specifically, inquiries regarding negative or discriminatory behaviours enacted against people experiencing gambling problems are likely to be met with social desirability bias (the desire to seem more positive or normal) and evaluation apprehension (the desire to avoid being evaluated negatively by investigators) and, thus, are unlikely to produce accurate data. However, in line with the false consensus effect and social projection theory, assessment of the perceived stigma attributed by non-gamblers and gamblers alike may be expected to reflect internally held attitudes and beliefs likely to be enacted. In addition, perceived stigma reflects an individual's beliefs about how gambling behaviours are experienced by others regardless of whether those beliefs are accurate, or whether the individual has ever enacted or experienced prejudice or discrimination and, thus, may be more influential in terms of affecting the actions and choices of the individual. Consequently, the remaining review will focus on experienced and perceived stigma.

Given the diversity of intent and applications in measuring stigma, the limited work in the area of gambling stigma assessment has tended to use modified versions of existing stigma measurement tools that relate to other conditions (e.g., mental illness, substance abuse) (Horch, 2011; Horch & Hodgins, 2008). A critical step in advancing the field in stigma reduction involves the development, validation and consistent use of scales that can be used to measure the effectiveness of stigma reduction efforts (Stangl, Lloyd, Brady, Holland, & Baral, 2013). To date, a single, validated scale that can measure the different forms of stigma specific to gambling does not exist. An increased understanding of the determinants and dynamics of gambling stigma is hoped to be gained by the development and use of a comprehensive assessment tool(s). The extent or severity of gambling



stigma in a given setting as well as change over time, particularly following intervention, is hoped to be better understood following this process.

## Conceptual Framework

Recognising the uniqueness of stigmatised conditions, Jones et al. (1984) proposed six dimensions that capture the variability in how stigma affects interpersonal relationships. Both internalised and perceived stigma can be conceptualised within the framework developed by Jones et al. and utilised by Barney et al. (2010). According to Jones et al., stigma can be defined along the dimensions of concealability, course, disruptiveness, aesthetic qualities, origin and peril.

1. The dimension of concealability is concerned with whether the condition or behaviour is obvious to others and the extent to which its visibility is controllable by the individual. Concealability is relevant to gambling behaviours because they are generally easily concealed. Furthermore, research suggests that the concealable nature of gambling is of significance among people experiencing problems with gambling and may enable the behaviour (Horch & Hodgins, 2008).
2. The course dimension is concerned with the perceived pattern of change, outcome or persistence of the behaviour. For example, stigma associated with mental illness frequently includes a belief that the condition is permanent (Björkman et al., 2007). Misconceptions about the permanence of problem gambling behaviours may hinder treatment seeking among problem gamblers as well as helping behaviour among social support networks (Horch, 2011; Suurvali et al., 2009). In addition, the misconception that all gamblers will become problem gamblers may also contribute to perceived stigma.
3. Degree of disruptiveness refers to the extent to which the condition or behaviour hinders interaction and communication. This concept can be likened to factors associated with addiction and mental illness, in which the condition or behaviour interferes with quality of life, adapt to societal norms, and the individual's ability to form or maintain relationships.
4. Aesthetic qualities reflect the extent to which the person is more repellent, upsetting or less attractive as a function of the stigmatised behaviour or condition. For example, physical attributes associated with obesity may lead to perceptions of laziness, poor hygiene, and unattractiveness (Lillis et al., 2010), while stigma associated with mental illness often includes notions of the individual as dangerous, unintelligent, or contagious (Björkman et al., 2007; Stone & Merlo, 2011).
5. The origin dimension reflects perceptions of the circumstances under which the condition or behaviour originated including attributions of responsibility for the condition. Research has shown that attributions of individual responsibility are often associated with stigma for conditions such as HIV (Kalichman et al., 2009; Rutledge et al., 2011) and mental illness (Björkman et al., 2007; Stone & Merlo, 2011), as well as behaviourally based stigmas associated with alcoholism (Peluso & Blay, 2008; Room, 2005; Schomerus, Lucht, et al., 2011), homelessness (Breakey et al., 1992), abortion (Kumar et al., 2009), some chronic illnesses (Cataldo et al., 2011; Lillis et al., 2010) and substance abuse (Room 2005; Peluso and Blay 2008; Schomerus, Lucht et al. 2011). Internalisation of responsibility can also be a barrier to seeking treatment and offering support (Derlega et al., 2010; Horch, 2011; Reinsmith-Meyer, 2008) which is highly pertinent to the experienced stigma associated with gambling behaviours.

6. Finally, peril reflects the perceived likelihood or imminence or severity of danger to others. Danger to others is commonly associated with incarceration (Lebel, 2006), mental illness (Björkman et al., 2007; Stone & Merlo, 2011) alcoholism and substance abuse (Peluso & Blay, 2008; Room, 2005; Schomerus, Lucht, et al., 2011). However, perceived risk or danger is not restricted to violence or physical harm. Stigma associated with gambling behaviours may be reflected, for example, by assumptions of criminal behaviour, financial risk, the impact on the gambler's family wellbeing, or dishonesty.

In relation to gambling: concealability relates more to observed behavioural attributes such as deceitfulness rather than visible blemishes; course relates to treatability, reflecting how the condition can change following intervention such as with psychotherapy; disruptiveness relates to difficulties in interpersonal relationships and including discrimination in employment once the problem becomes known; aesthetic qualities relates to displeasing behavioural attributes such as greed; origin relates to how the gambling behaviour started and progressed such as through life stresses, as well as the degree to which the responsibility for gambling problems can be attributed to individual factors (e.g., weak character) versus situational characteristics (e.g., exposure to negative role models, the need to escape from stressful life events, other environmental contributors); and peril relates more to the threat that gambling can present particularly around financial and familial issues.

## **What can we learn from efforts to measure stigma in other fields?**

Given the limited research addressing stigma in gambling, Jones et al.'s (1984) six dimensions of stigma provides a conceptual framework to assess and consider other fields of research appropriate for inclusion. From this conceptual exercise, the following fields were identified and the compatibility with the Jones framework identified. These are summarised below in table 1, followed with a more complete discussion of issues of compatibility.



Table 1. Compatibility of Stigmatised Conditions with Jones' Framework Items

Condition	Compatibility with Jones' Framework Items					
	Concealability	Course	Disruptiveness	Aesthetic	Origin	Peril
Problem Gambling	✓	✓	✓	✓	✓	✓
Mental Health	✓	✓	✓	✓	✓	✓
Drugs and Substance Abuse	✓	✓	✓	✓	✓	✓
HIV	✓	✓		✓	✓	✓
Incarceration	✓		✓	✓	✓	✓
Homelessness		✓	✓	✓	✓	✓
Chronic Diseases	✓	✓		✓	*	
Obesity		✓		✓	✓	
Abortion	✓			✓	✓	
Suicide	✓	✓			✓	

\* Origin may be relevant for some forms of chronic disease (e.g., lung cancer, diabetes, heart disease) but not others.

## Mental Health

Stigma associated with mental health may be comparable to gambling related stigma on all dimensions of the Jones framework (concealability, course, disruptiveness, aesthetic, origin and peril). Researchers have consistently identified that those with stigmatising beliefs about mental illness have expressed a desire to avoid and distance themselves from those who experience from mental illness (Corrigan, Edwards, Green, Diwan, & Penn, 2001; Martin, Pescosolido, & Tuch, 2000; Weiner, Perry, & Magnusson, 1988), reflecting Jones' dimension of aesthetics. In addition, the dimension of peril is reflected in the finding that those experiencing mental illness have frequently been perceived to be dangerous and unpredictable (Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003; Corrigan et al., 2002; Martin et al., 2000). Consequently, researchers have developed measures of social distance, which assess a person's desire to distance themselves from a person with a mental illness (Angermeyer, Beck, & Matschinger, 2003; Corrigan et al., 2003), and measures of dangerousness, which assess how dangerous a person with a given mental illness is perceived to be (Corrigan et al., 2003; Corrigan et al., 2002; Horch & Hodgins, 2008).

Cues such as limited social-skills, behavioural quirks, and physical markers (such as behavioural ticks or an awkward gait) may trigger the activation of negative stereotypes of mental illness (Corrigan, 2004a). Individuals with mental illness are often perceived as being dangerous (peril), inept or incapable of communication or reasoning (disruptiveness), and sometimes personally responsible for the onset and maintenance of their mental ill-health due to weakness or poor self-control (origin) (Corrigan et al., 2003; Corrigan, 2004a; Corrigan et al., 2002). These stereotyped perceptions may result in prejudice and discrimination, avoidance, negative attitudes and hostility (Corrigan, 2004b; Vogel, Bitman, Hammer, & Wade, 2013). Schizophrenia (Angermeyer et al., 2003; Jorm, Reavley, & Ross, 2012; Loch et al., 2013), and other mental illness associated with substance abuse and addiction (Livingston, Milne, Fang, & Amari, 2012) are often associated with increased risk of dangerousness and may be more stigmatised than other disorders or conditions (Jorm et al., 2012).

According to the attribution model of mental health stigma (Weiner et al., 1988), stigma is facilitated by the erroneous belief that while the onset of physical illness is uncontrollable, the onset of mental illness is not (Weiner et al., 1988). Whilst the onset of uncontrollable illnesses (such as cancer or acquired brain injury) are considered irreversible (i.e., stable), they elicit the emotion of 'pity' in the observer. This may in turn facilitate empathy for the individual and a greater willingness to provide support. Conversely, mental health disorders in which the onset is often perceived to be controllable (such as drug and alcohol addiction, depression, and schizophrenia) and therefore reversible (i.e., unstable), may elicit the emotion 'anger' and results in greater stigma.

## Substance Abuse (Drugs and Alcohol)

Drug, alcohol and substance abuse, like gambling, are consistent with all six elements of Jones' (1984) framework. Other similarities that make this body of literature worth examining are the prevalence of co-morbidities and co-stigmas (Corrigan et al., 2005; Poon, Saewyc, & Chen, 2011; Raley, 2012) the complex causal relationships between them (Crawford, Rudolph, Jones, & Fuller, 2012; Room, 2005), the presentation to health services for other issues (Aviram, 2006), cultural differences (Gibbs et al., 2011), differing levels and experiences of stigma for different product types consumed (Crawford et al., 2012; Palamar, 2010) and the impact of stigma in discouraging consumption (Brown, 2011). Drug, alcohol or substance abuse is also an adaptive behaviour like gambling, and stigma impacts on issues such as treatment seeking (Fortney et al., 2004; Gibbs et al., 2011), relapse (Harris & McElrath, 2012) and poorer health outcomes due to the stigma (Ahern, Stuber, & Galea, 2007; Anitha, 2007; Gray, 2010a; Smith et al., 2010). Emerging areas of common relevance may be in the impact on youth (Aviram, 2006; Palamar, Kiang, & Halkitis, 2012), given the

increased accessibility and availability of gambling through online providers and media portrayals of the behaviours (Cape, 2003). People experiencing drug, alcohol and substance addictions are also portrayed or viewed as blameworthy for the condition (Corrigan, Kuwabara, & O'Shaughnessy, 2009; Palamar, 2010; Raley, 2012), which is similar to gambling, and viewed more harshly than those with other stigmatising conditions. Similar to findings in relation to stigma related to incarceration, familiarity, demographics and conservatism are related to stigma associated with drug use, and these are of importance in understanding stigma associated with gambling. (Palamar, 2010; Palamar, Kiang, & Halkitis, 2011; Palamar et al., 2012; Raley, 2012).

The work on developing scales to measure stigma related to drug, alcohol and substance abuse can inform the current task in terms of providing methodological guidance on managing the differences between products consumed (Crawford et al., 2012), cultural differences, and even the stigmatisation of the treatment facilities, a similarity shared also with HIV and mental health. Similarly the issue of origin of the problem and potential peril (Peluso & Blay, 2008; Reynolds, Lehman, & Bennett, 2008) can also inform scale development.

## HIV

Stigma relating to HIV was examined because of the similarities with stigma relating to gambling in terms of the items on the framework (Jones et al., 1984). The common elements were identified as concealability, course, aesthetic, origin, and peril. An examination of the literature on stigma relating to HIV also identified some other points of relevance. Stigma relating to HIV acts as a barrier to testing, test acceptance (Andrinopoulos, Kerrigan, Figueroa, Reese, & Ellen, 2010; Kalichman et al., 2005), and disclosure (Overstreet, Earnshaw, Kalichman, & Quinn, 2013) which is pertinent to gambling and relates to the fear of being labelled (Andrinopoulos et al., 2010; Horch, 2011). The impacts of stigma towards not only the condition, but the response to, and treatment of HIV, have also been considered (Machine, Ross, & McCurdy, 2011; Rutledge et al., 2011). Berger, Ferrans, & Lashley (2001) identified the importance of personalised stigma, disclosure concerns, negative self-image and concern with public attitudes as being of influence for HIV stigma, which are also of relevance to gambling related stigma. The relationship between HIV and a co-morbidity of depression (Chaudoir et al., 2012) is also of relevance to gambling, where the complex causal relationship between the two morbidities is still not fully understood.

The element of origin in relation to stigma was determined to be of particular relevance in terms of the stigma associated with HIV (Chan & Reidpath, 2007), and the origin of the stigma could also be a co-stigma in some cases (Goldin, 1994; Ha, Liu, Li, Nield, & Lu, 2012; Herek & Capitanio, 1999; Latkin, Davey-Rothwell, Yang, & Crawford, 2013). Deacon (2006) identified the relationship between the condition's stigma and the complex relationship with other existing forms of prejudice and disadvantage. This is of importance in understanding gambling stigma which is already influenced by beliefs by some elements of the population that it is a behavioural choice and is worth exploring in developing the scale within the current study.

From a methodological perspective, the development of HIV stigma scales can inform the process of the current study in terms of not only the scale development (Berger et al., 2001; Earnshaw & Chaudoir, 2009; Holzemer et al., 2007; Kalichman et al., 2009; Phillips, Moneyham, & Tavakoli, 2011) but also how adaptive the scale will need to be across different populations and groups (Boyes, Mason, & Cluver, 2013; Feyissa, Abebe, Girma, & Woldie, 2012; Goldin, 1994; Jimenez et al., 2010; Varas-Diaz & Neilands, 2009). Given the similarities between HIV stigma and gambling stigma, the literature on the process of developing the scales identifies a need to ensure that the measure is appropriate at a general population level, is unambiguous and can distinguish amongst the various aspects of compound stigma (Nyblade, 2006).

## **Incarceration**

Stigma related to incarceration was also considered of relevance to gambling related stigma, in the areas of concealability, disruptiveness, aesthetic, origin and peril. Peril was considered to be of significant interest given the implications of considering people dangerous, dishonest and otherwise disreputable on exclusion from normal social and economic activities (Hirschfield & Piquero, 2010; Lebel, 2012; Schnittker & John, 2007; Tewksbury, 2012). This can be measured for both types of stigma in terms of social distance preferences. Hirschfield and Piquero (2010) also addressed the issue of normalisation of an activity and the impact on subsequent generations which is of relevance to gambling, especially in light of the increased access and availability presented by online gaming and especially sports betting.

From a methodological perspective the influence of familiarity, confidence in social systems in managing issues, and demographic characteristics on stigma were highlighted by the literature (Hirschfield & Piquero, 2010; Lebel, 2012). Lebel (2012) considered stigma relating to incarceration from a different perspective, that of stigma towards a group, separate to stigma towards an individual. This is of interest in terms of gambling especially given the media and editorial interest in gambling due to political events of recent years in Australia.

## **Homelessness**

Stigma relating to homelessness and gambling share the same elements of course, disruptiveness, aesthetic origin and peril. Research into stigma on homelessness is of value in contributing to the understanding of the influence of perceived stigma on self-esteem, feeling trapped, self-blame, guilt and suicidal ideation (Kidd, 2007) which also impact on people experiencing problems with gambling. As with stigma related to HIV, stigma related to homelessness also explores the complexity of relationships with co-stigmas, the importance of element of origin (particularly the issue of blame), and the impact of labels (Phelan, Link, Moore, & Stueve, 1997). The issue of labels is highlighted in the literature on stigma relating to homelessness and is of importance both in terms of perceived and internalised stigma relating to gambling (Horch, 2011) and links to the potential harms both for the individual, their family and community. From a methodological perspective, recent research on homelessness and stigma (Schneider & Remillard, 2013) challenges traditional stigma research in terms of the element of origin, and how positive reported behaviours and attitudes may actually embed discursive practices that actually reinforce stigma.

## **Chronic disease and obesity**

Stigma relating to chronic disease also shares a number of elements with stigma relating to gambling, including course, aesthetic, and origin. Of these, origin is of particular interest to gambling related stigma, with blame attached to those who were seen to have failed to make the necessary choices to avoid the condition (Cataldo et al., 2011; Durso & Latner, 2008; Jones et al., 2009; Lewis, Cash, Jacobi, & Bubb-Lewis, 1997) and subsequently the development of these scales can contribute to the current study from a methodological perspective in terms of exploring issues such as blame. Similarly, some conditions are considered to be a perceived illness only (Jones et al., 2009; Shlaes, Jason, & Ferrari, 1999) and gambling is often portrayed as a behavioural choice. These studies have also explored the complex relationship between the types of stigma, particularly the influence of internalised and enacted stigma on perceived and anticipated stigma (Earnshaw & Quinn, 2012; Earnshaw, Quinn, Kalichman, & Park, 2012; Lillis et al., 2010) and the impact of this on quality of life (Earnshaw & Chaudoir, 2009; Earnshaw, Quinn, & Park, 2012; Puhl & Brownell, 2003). This complexity is also of importance in stigma relating to gambling.

## Other stigmatised conditions or behaviours

It is also important to acknowledge that stigma may be associated with a broad range of behaviours and conditions including, but not limited to, sexuality and gender identity (Corrigan & Matthews, 2003; Rendina, Golub, Grov, & Parsons, 2012; Ross & Rosser, 1996), sexually transmitted infections (Rusch et al., 2008), physical disability, particularly highly visible disabilities (Corrigan, 2006), workplace injuries (Kirsh, Slack, & King, 2012), abortion (Kumar et al., 2009), illnesses where origin is not an issue but aesthetics might be (such as epilepsy) (Mbuba, Abubakar, Odermatt, Newton, & Carter, 2012; Salgado et al., 2005), cancers of head and neck or other forms of cancer not typically associated with controllable behaviours (Kissane et al., 2013) degenerative disorders such as Multiple Sclerosis, Parkinsons Disease and stroke (Molina, Choi, Cella, & Rao, 2012), involuntary childlessness (Miall, 1986), and intimate partner violence (Overstreet & Quinn, 2013). While the impact of stigma associated with such conditions or behaviours may be comparable to that experienced among those experiencing problems from gambling, mental ill-health, or substance abuse, existing scales used to evaluate the stigma associated with these conditions have not been included in the current review as they either did not map well onto the Jones dimensions, scale items were not easily adapted to consider problem gambling, or no scales could be located.

## Evaluation of existing stigma scales

To inform the development of a validated gambling stigma scale a literature review to identify existing measurement tools in the relevant conditions of stigma was performed. References were collected through an initial PubMed and Psych database search using the keywords 'gambling' (or each of the other relevant conditions) and 'stigma', 'stigma' and 'scale' and 'development', and 'stigma' and 'measurement'. Additional references were also located using a snowballing methodology from bibliographies of relevant papers. The internet was searched using Google Scholar to identify any relevant grey literature. Only papers and reports that were written or translated in English and either provided background information on gambling or one of the identified relevant conditions stigma and/or included a stigma measurement tool were included in this review.

A total of 94 papers were selected from initial title and abstract scanning due to their relevance to the measurement and/or experience of stigma. Of these, 64 included a stigma measurement tool. The final review included 27 papers that included a tool to measure stigma and 30 papers that explored the topic of stigma. A total of 15 different scales were identified from these papers (see Appendix A for summary of scales identified). The 37 papers that were not included did not address the area of mental illness stigma (substance abuse) or gambling or gambling stigma, did not fit in with Jones et al.'s (1984) conceptual framework, or included items that could not easily be adapted for use with gambling and problem gambling, and thus held limited application to the current project. One of the included papers had not been published in a peer-reviewed journal but was included due to its high relevance to the topic of gambling stigma and the previous publication by the same author in the area of gambling in the scientific literature (Horch, 2011). From the grey literature search, four reports that related to gambling in Australia were identified.

A number of scales were identified from the literature. As the fields identified in Table 1 map onto the Jones Framework, the scales identified were then reviewed and were required to have the following attributes in order to be considered for inclusion: the scale mapped onto multiple dimensions of the Jones Framework; the scale had been used in a least two other studies; a copy of the scale was readily available; and the scale had some or all psychometric properties published in the same or a separate article. If a scale was found to have items easily transferrable to problem gambling and/or had unique properties not used by other scales it was also considered for inclusion. Of the fifteen

scales identified, eight scales met these criteria and are described in the following section (see Appendix A for detailed breakdown of examined scales).

The Perceived Devaluation/Discrimination Scale (PDD) (Link, 1987) was found to be the most commonly used measurement tool to assess perceived stigma. The PDD is a 12-item scale that is designed to measure the extent to which respondents believe that people will devalue or discriminate against someone with a history of receiving psychiatric treatment. Evidence of its psychometric properties was identified (Brohan, Slade, Clement, & Thornicroft, 2010). Modified versions of the PDD were also located from this review which measured stigma relating to: depression, gambling, substance abuse, alcohol abuse and smoking (Björkman et al., 2007; Brown et al., 2010; Horch, 2011; Luoma et al., 2010; Palamar et al., 2012; Reynolds et al., 2008; Stuber, Galea, & Link, 2008).

The Internalised Stigma of Mental Illness (ISMI) (Ritsher, Otilingam, & Grajales, 2003) was found to be the most commonly used measurement tool to assess internalised stigma relating to mental illness (Brohan et al., 2010). It was also utilised in two other studies in this review (Brown et al., 2010; Sibitz, Unger, Woppmann, Zidek, & Amering, 2011). The ISMI is a 29-item scale that measures domains of internalised stigma relating to mental illness. The scale was developed in collaboration with individuals with mental illnesses.

The Depression Self-Stigma Scale (DSSS) (Kanter, Rush, & Brondino, 2008) was identified by Brohan et al.'s (2010) review and was considered for inclusion due to the applicability of the scale items to gambling and that it addressed all forms of stigma. The DSSS is a 32-item scale that includes items that measure both perceived and internalised stigma relating to depression. The scale also included four items that measured perceived stigma relating to seeking treatment. The DSSS was developed based on other existing scales including the ISMI.

The Stigma Scale (SS) (King et al., 2007) is a 28-item scale that can measure discrimination and disclosure relating to self-stigma. It was developed from a qualitative study examining the experiences of mental health service users. Whilst the scale was reported in Brohan et al.'s (2010) review, it was not found in other studies. It was chosen for inclusion due to its sound psychometric properties, having items easily transferrable to gambling and the value it added from being developed based on the experiences of the stigmatised population.

The Substance Abuse Self-Stigma Scale (SASSS) was located through this review and was considered for inclusion due to the high relevance the items had to gambling (Luoma et al., 2013). The scale also included dimensions not specifically explored by the other scales identified: self-devaluation and values disengagement. The SASSS consists of 39 items that measure dimensions of self-stigma.

The Self-Stigma of Seeking Help (SSOSH) scale (Vogel, Wade, & Haake, 2006) was one of the only validated scales found that exclusively measured mental health treatment seeking stigma. Although it was not found to have been used in other studies the scale items were included as the psychometric properties of another similar scale that was found was not reported. The SSOSH is a 10-item scale that examines the domains of self-stigma associated with treatment-seeking for mental illness.

A few examples of a modified version of Bogardus's Social Distance Scale were located from this review (Butler & Gillis, 2011; Feldman & Crandall, 2007; Horch, 2011; Norman, Windell, & Manchanda, 2012). This scale was designed to measure the desired social distance from a person possessing a stigmatised condition. The original scale was based on 7 items that were ranked in order of intimacy. The scale, on its own, was not chosen to be included in this study due to this reason and the associated difficulties in its incorporation with other scales where individual items could independently measure stigma dimensions. It was noted, however, that the existing scales



chosen for this study did include items that can be linked to these measures of desired social distance. Examples of these items include: 'Most people would willingly accept a former mental patient as a close friend' (Link, 1987); and 'I do not want to live next door to another depressed person' (Kanter et al., 2008).

One study included in the initial scanning process of the review looked at the experience of stigma relating to HIV and had created a parallel scale that could be used to measure the different forms of stigma within a community (Visser, Kershaw, Makin, & Forsyth, 2008). This approach allowed the researchers to observe the different perspectives of individuals in the same community on a similar issue of stigma. This concept was considered to be a valuable and unique approach to adopt for the purpose of this study. To create parallel items within the gambling stigma scale it is suggested that existing internalised stigma items be matched with items prefixed with words such as 'most people' to measure perceptions of stigma and existing perceived stigma items are matched with self-descriptive prefixes such as 'I think' or 'I feel' to measure the internalisation of stigma. Any identified scales that include items referring to enacted stigma should be matched with perceived and internalised stigma scale items.

## **Methodological issues identified from the literature review of relevance to the development of a scale**

From this review, a series of methodological steps were identified for developing a scale to measure stigma in gambling that provide additional value to further research in this area. First, a conceptual framework in the Jones model to articulate those fields of research likely to confer a benefit to understanding stigma in gambling was utilised. Specifically, dimension classifications can be adjusted to suit issues concerning gambling based on the reviewed approach by two other studies involving mental health (Barney et al., 2010; Day, Edgren, & Eshleman, 2007): disruptiveness can be broadened to difficulties to incorporate overall interpersonal difficulties; aesthetic qualities can be replaced by repulsion to include undesirable attributes that are not physically apparent; peril can be replaced by threat to better represent the range of undesirable outcomes other than acts of violence; origin can be replaced with responsibility to create a better link to causality; and course can be replaced with treatability to better reflect perception of outcomes following intervention.

Second, a direct selection of scales with validated and well-researched context for use has been provided that, whilst not directly relevant to the context of gambling, can be readily adapted to address the context of gambling. Third, considering education or knowledge about the stigmatised condition is also believed to reduce negative behaviours towards the affected person (Corrigan, River, et al., 2001), it will be important to consider the role of attribution by individuals in a stigma scale. Whilst attribution maps on the origin dimension of Jones' framework, the potential to address this dimension is likely to be enhanced through the use of vignettes as part of the proposed scale.

Attribution theory suggests that when an individual's condition is considered to be under their control, or they are responsible, others are more likely to withhold help and avoid the person (Corrigan et al., 2003; Weiner et al., 1988). These behavioural responses are often related to feelings of anger towards the affected individual. Conversely, if the condition is considered to not be under their control then that will more likely elicit feelings of pity towards the affected individual which can result in helping behaviours (Corrigan, River, et al., 2001). It has been suggested that if the stigmatised individual was considered not responsible for their condition then they would experience more sympathetic responses from others (Corrigan et al., 2003). Problem gambling has been shown to be a result of a complex interaction of genetic, biological, psychological and environmental factors (Blazczynski & Nower, 2002). However, a systematic review of 33 studies exploring attitudes towards mental illness found that in most cases biological or genetic causal attributions were not associated

with less rejection of people with mental illness (Angermeyer, Holzinger, Carta, & Schomerus, 2011). A later study found that if biological causal attribution was paired with successful treatment information then less negative attitudes towards the mentally ill were found (Lebowitz & Ahn, 2012). Whilst there is little evidence to support the use of pharmacotherapy (Bartley & Bloch, 2013), psychotherapy has been shown to be effective in the treatment of problem gambling (Soberay et al., 2013).

Familiarity with the stigmatised condition is also thought to influence behavioural responses. Studies have shown an inverse relationship between having contact with a person with mental illness and endorsing stigma (Corrigan, River, et al., 2001). It is thought that contact with a stigmatised individual will mildly disconfirm associated stereotypes (Corrigan, River, et al., 2001). Education or knowledge about the stigmatised condition is also believed to reduce negative behaviours towards the affected person. Consequently, it is argued that a measurement tool for gambling related stigma should incorporate measures of familiarity with the behaviour (e.g., gambling experiences of self and others, exposure to individuals experiencing gambling problems), attributions of responsibility, and knowledge of treatments and the efficacy of treatment programs.

Consistent with the previous recommendation, it will also be of some importance to obtain a measure of problem gambling risk among study participants. While numerous tools exist to measure likelihood of experiencing or being at risk of experiencing problems with gambling, the most widely cited assessment tool is the Problem Gambling Severity Index (PGSI) (Ferris & Wynne, 2001; Jackson, Wynne, Dowling, Tomnay, & Thomas, 2010). The Problem Gambling Severity Index (PGSI) is a nine item measure of problem gambling risk adapted from the Canadian Problem Gambling Index (CPGI). The scale is intended for use within a general population (rather than as a clinical tool) and items are measured on a 4-point scale ranging from 0 (never) to 3 (almost always). PGSI scores range from 0 to 27, with scores greater than 8 considered to reflect a high risk of problem gambling with probable negative consequences and possible loss of control (Ferris & Wynne, 2001; Jackson et al., 2010). The PGSI has been found to have good validity in being able to identify the categories of people with no problem with gambling and those experiencing problems with gambling, however the low-risk and moderate-risk categories show poor discriminant validity using the existing scoring rules (Currie, Hodgins, & Casey, 2013). Improvement of this is suggested by modifying the scoring system. This involves raising the upper threshold score of the low-risk gambler, from 2 to 4, and raising the lower threshold score of the moderate-risk gambler, from 3 to 5.

## Conclusions

From this review, a number of core scales were identified that demonstrated the diversity in measurement and the application of stigma related research. The conceptual framework that guided the identification and application of a stigma scale to the context of gambling highlighted methodological considerations. In particular, the rigor, scope, validity and conceptually relevant impact of stigma scales within a gambling context will require review and validation. In addition, by articulating both felt (internalised) and perceived stigma within the Jones framework, this review captures the potential impact and scope that development of a scale to assess gambling related stigma will provide to be able to explore key characteristics that may allow for targeted interventions.



## Approach

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### Sampling Design

The AHSS Study panel is a group of people who have consented to participate in research by undertaking surveys; who become familiar with data collection protocols; and who provide sufficient background data to screen for more specific sub-samples. The AHSS National panel was recruited from each state and territory using random digit dialling of landline and mobile telephones via computer assisted telephone interviewing (CATI). Members of this panel were asked to provide basic demographic data and answer core questions about a range of topics of interest to university researchers in a brief initial online survey. The Queensland and Central Queensland only sub-panels were also recruited via computer assisted telephone interviewing. A random sample of Queensland and Central Queensland adults took part in established omnibus CATI surveys, which are conducted annually by the PRL. At the conclusion of these surveys respondents were asked if they would like to join the AHSS panel, and at this time, provided basic contact information, including an email address.

These respondents are subsequently referred to as AHSS Panel Members, and are invited to take part in regular AHSS surveys throughout the year. Respondents who wish to withdraw from the panel member list are immediately removed from the sample, those who have undeliverable email addresses are amended where possible or periodically removed, and non-active participants are removed after receiving  $\geq 4$  survey requests and recording no response.

At the time of the survey launch there were 3,165 AHSS Panel Members. The sample was not weighted to be representative to the general population, but nevertheless drew on a broad range of respondents across Australia.

### The survey instrument

The survey instrument consisted of three components:

1. A standardised introduction
2. Substantive questions
  - a. Section 1: General gambling
  - b. Section 2: Problem gambling
  - c. Section 3: Personal gambling
  - d. Section 4: Consumption Screen for Problem Gambling (CSPG)
  - e. Section 5: Problem Gambling Severity Index (PGSI)
  - f. Section 6: Attitudes Toward Gambling Scale (ATGS)
3. Demographic questions

The survey contained two alternate versions of question blocks (for problem gambling or recreational gambling) included in sections 1-3. Participants were randomly assigned either Version 1 or Version 2 upon logging into the survey. The demographic questions were largely replicated from previous AHSS questionnaires.

The questionnaire was pre-tested by project staff. Pre-test frequency distributions were reviewed before modifications were made to the final questionnaire. The full questionnaire is attached as Appendix B.

## Data Collection: Online survey

The online survey was administered using SSI Web V8, online survey software developed by Sawtooth Software. SSI Web allows data to be collected and recorded as the respondent completes the questionnaire. Using the online administrative module allows for a variety of data management capabilities.

The survey commenced on Wednesday 23 April, 2014. Each respondent was sent a personalized email which contained general information about the study, instructions on how to access the online survey via the AHSS website, and their unique password. The use of passwords enables respondents to leave and re-start the survey at will, and also enables tracking and targeted reminders. Regular reminders were sent to respondents who had not completed the survey and had not declined to participate. Respondents who encountered difficulties accessing the website or online survey were instructed to contact the Population Research Laboratory (PRL) via email or phone. These respondents were provided with prompt technical assistance by PRL staff where required.

The online survey was closed on Friday 16 May, 2014. A total of 1,370 respondents completed the survey and a further 53 respondents partially completed the survey.

## Quality Assurance

Rigorous quality assurance processes are employed by the Population Research Laboratory. The data was regularly monitored on a designated secure web server during the online data collection period. Regular assessments were made of the data collection progress. Regular data backups were made and the data was stored on a secure web server. All AHSS participant identifying information is stored securely and separately to survey data in electronic format.

The project received approval by the Human Ethics Research Review Panel at CQUniversity before administration to the general public. PROJECT H13/08-151.

## Response Rate

The response rate is a calculated percentage representing the number of people participating in the survey either with a completed or partially completed survey divided by the number of people in the sample. The numerator is the number of completed and partially completed interviews and the denominator includes the completed and partially completed interviews, the refusals (declined, were unable to participate or withdrew from the panel), the sample not contacted (undeliverable email addresses), and other eligible respondents from within the sample frame who did not respond to the survey. The 'other' represents the portion of the sample who did not respond to the survey, but who were contactable (their email did not bounce). All participants receive information about the study and are given the choice to participate. Therefore the non-response bias is unknown but may include those who choose not to participate because of personal gambling experiences.

### Response Rate

$$\frac{\text{Complete Interviews} + \text{Partial Interviews}}{(\text{Complete} + \text{Partial}) + \text{Refusal} + \text{Non Contact} + \text{Other}}$$

$\frac{1370 + 53}{(1370 + 53) + 59 + 39 + 1644}$	$\frac{1423}{3165}$
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The response rate for this AHSS study was 44.96%.

## Estimated Sampling Error

The sampling error is a measure of the validity of the descriptive statistics that are observed in a sample. Survey estimates for the final sample of 1,370 are accurate within plus or minus 2.6 percentage points, 19 times out of 20. The following formulae were used to calculate the sampling error for study sample at a 95% confidence level: Final sample (n=1,370)

$$1.96 \times \sqrt{\frac{.5 \times .5}{1370}} = 1.96 \times \sqrt{.000182481} = 1.96 \times .013508552 = .026476761 (\pm 2.6\%)$$

It is often of interest to researchers to examine sub-groups of the overall sample in terms of various aspects and items contained in the survey question bank. It is important to remember that when considering any such sub-sample analysis, that the sampling error for each of the sub-groups is much larger than for the overall results. When considering a sub-group size of 100 for example, the estimated sampling error, at the 95% confidence level at a 50/50 binomial percentage distribution increases to plus or minus 9.8 percentage points (correct to within 9.8% 19 times out of 20). An indication of the sampling error associated with various sub-group sample sizes is presented below in Table 2. Analysis performed on small (<400) subsamples should be treated with caution.

Table 2. Sub-group sampling error table

Subgroup Size	Sampling Error	Subgroup Size	Sampling
<b>50</b>	± 13.9 %	<b>700</b>	± 3.7
<b>100</b>	± 9.8 %	<b>800</b>	± 3.5
<b>200</b>	± 6.9 %	<b>900</b>	± 3.3
<b>300</b>	± 5.7 %	<b>1000</b>	± 3.1
<b>400</b>	± 4.9 %	<b>1100</b>	± 3.0
<b>500</b>	± 4.4 %	<b>1200</b>	± 2.8
<b>600</b>	± 4.0 %	<b>1300</b>	± 2.7

## Final Data

The data was tabulated and cleaned using the SPSS<sup>2</sup> version 19. The data cleaning process included discrepant value and consistency checks. The resultant data set contains 1370 cases with a total of 101 variables for each case. A total of 682 respondents completed Version 1 of the survey, and a total of 688 completed Version 2. Cases with partial data (n=53) have also been included in the final data file (unless the participant had subsequently withdrawn from the study).

<sup>1</sup> Babbie, Earl (1989) *The Practice of Social Research* (Fifth Edition). Belmont, California: Wadsworth Publishing Company, p.A32.

<sup>2</sup> SPSS is a product of SPSS Inc, an IBM Company, Chicago, Illinois.

## Results

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### Exploratory Factor Analysis

#### Initial development of the Gambling Perceived Stigma Scale (GPSS)

The alternate-form design of the survey resulted in statement pairs that were identical in terms of content, but varied as to whether the target of the statement was problem gambling (PG) or recreational gambling (RG). Whilst structural equation modelling methods allow us to model the item responses simultaneously as a function of their content and their target, no equivalent techniques are available for exploratory factor analysis (EFA). Therefore, in order to analyse the factor structure of the item content via EFA; for each item, one option is to first calculate and remove the mean difference between PG and RG forms of the item. It is reasonably safe then to proceed under the assumption that the remaining co-variability in the item set is due to the similarities in the item content. One limitation of this approach is that it is incompatible with the use of a polychoric correlation matrix, which is most suitable for a factor analysis of ordinal, non-normal, Likert response data. Further, it should be kept in mind that covariance between items is due to PG/RG targets is relatively small, and is constant for all items. That is, all items comprised both RG and PG forms, and the effect of having variable forms would be to increase the covariance between items equally for all items. Therefore, the net effect of not standardizing the responses would be to make the analysis slightly anti-conservative with respect to identifying a common factor, but should not otherwise affect the factor structure. The fact that standard Pearson correlations are themselves anti-conservative when applied to skewed, non-normal data (as is typical for Likert items) makes it highly arguable as to which approach would be superior in the present context.

#### Number of factors supported by the data

Based on the considerations above, we initially adopted an approach of running both EFA techniques: (1) target mean standardisation + standard correlation matrix, and (2) no target mean standardisation + polychoric correlation matrix. The initial step in EFA is to determine how many factors are supported by the data. One way to determine the number of factors or components in a data matrix or a correlation matrix is to examine the "scree" plot of the successive eigenvalues. Sharp breaks in the plot suggest the appropriate number of components or factors to extract. "Parallel" analysis is a robust version of this technique that compares the scree of factors of the observed data with the average scree plot of a large set of randomly permuted data matrices of the same size as the original (Hayton, Allen & Scarpello, 2004). Figures 1 and 2 show parallel analysis plots for analyses based on both approaches. Using the parallel analysis criterion of eigenvalues of the sample exceeding the average of the random simulations, approach (1) suggested 9 factors and 6 components and approach (2) suggested 8 factors and 5 components, supporting the expectation that approach (1) is slightly less conservative than approach (2). However, it is significant that the obtained scree plots were very similar in both cases, supporting the idea that technical issues in handling the RG/PG target differences have relatively little effect on the overall factor structure. Finally, although 8/9 factors exceeded the parallel analysis criterion for retention, several of these factors were only marginally above the criterion, with only 3 or 5 factors in both cases clearly above the criterion.

A final approach to addressing heterogeneity due to different item targets is to compute the polychoric correlation matrix separately for the two subsets of the data. If there is not differential item functioning, depending on item target, the pattern of inter-item correlations should be similar for both Form 1 and Form 2. Figure 3 shows there was quite strong similarity between the correlation matrices of Form 1

and Form 2, with the 'correlation of correlations' being 0.83. This supports the idea of similar item functioning as well as providing an indication of the reliability of the correlation matrix. Factor analytic methods for determining structure can be applied to correlation matrices calculated on each subset separately, or to the average of the two correlation matrices. Applying this approach yielded a visually similar scree plot as to the other approaches, with slightly more (11) factors exceeding the criterion. A number of other approaches to determining factor structure exist (Revelle, in prep; Revelle & Rocklin, 1979; Velicer, 1976). Unfortunately, mathematical criteria for deciding which is optimal do not exist, and each method often gives different results. This was true in the present analysis, in which the Very Simple Structure (VSS; Revelle & Rocklin, 1979) complexity 1 metric suggested 1 factor, VSS complexity 2 metric suggested 2, Velicer's Minimum Average Partial (MAP) test indicated 3, and the BIC suggested that 8 factors be retained. From this we tend towards the interpretation that the data suggests complex and potentially hierarchical structure, and an iterative approach of considering several factor analytic solutions based on interpretability should be followed. We therefore examined the pattern matrix for various numbers of extracted factors. However, while factor structure was apparent, items within data-driven factors did not usually agree with the proposed 6 dimensions, and no solution stood out as markedly more interpretable than others.

## Identifying coherent dimensions of stigma

The EFA-oriented analysis described in the previous section suggested that there was meaningful covariance structure in the stigma items. However, the structures identified did not necessarily correspond with the hypothesized dimensions, and some items clearly performed poorly. Therefore, we put aside the criteria of identifying a model in the covariance cluster that matched the hypothesized clusters, and focused instead on identifying coherent item clusters, without regard to the original intent of the item. Accordingly, we adopted an approach to scale development called ICLUST, which iteratively combines items based on maximising both coefficient alpha (reliability) and coefficient beta (homogeneity) (Revelle, 1978). Although not as widely used as EFA, ICLUST has features that can make complex scale development problems far more tractable (Cooksey & Soutar, 2006). Figure 4 presents the output of this procedure, identifying two groups of items with local maxima of both beta and alpha. The first group, C18, appears to be centred on a negative judgement of the personal (psychological) deficits of the gambler, and might be labelled 'Contempt'. Based on the dual subset method for calculating the covariance, this group possessed good properties of  $\alpha = .89$  and  $\beta = .86$ . The second group, C19, is concerned with avoidance and distrust, and might be labelled 'Ostracism'. This group all possessed good properties of  $\alpha = .87$  and  $\beta = .82$ . Items within these two were retained and analysed using polychoric EFA; Table 3 below shows the factor structure. As the table shows, the restricted set of 14 items has a clear two-dimensional factor structure, with good face validity for all items except for one item, 'Most people think that gamblers tend to be irresponsible'. This item, nominally part of the 'Ostracism' cluster, has poor face validity for this construct. It is also the only item that shows a split loading between the two factors. With its removal, all items in both constructs have high face validity. With this item removed (see Table 4), an EFA on the remaining set of items shows very strong psychometric properties, with strong, homogenous loadings of items on factors, and a low RMSR of 0.04. The generally accepted criterion of RMSR for a well fitting model is 0.05. The fit based on off-diagonal values is 0.99, and the correlation of scores with factors is .95 and .94 for 'Contempt' and 'Ostracism', respectively. These correspond to a very strong level of fit. There is a moderately strong correlation of .65 between the two factors, which strongly suggests that a global stigma score is also meaningful. Accordingly, we proceeded to work with this subset of items, and this latent factor structure, for subsequent analyses.

## Item Response Theoretic Modelling of the 2 Factor Solution

The previous analyses were exploratory, and directed at establishing dimensionality, and obtaining and verifying items for sub-dimensions of stigma. In doing so, it was necessary to use heuristic techniques and algorithms for working with the covariance matrix, defining non-parametric measures of association, accounting for variance due to PG versus RG, and selecting items (ICLUST). Having determined a candidate optimal solution, the next step is to evaluate this solution through a full parametric model. The ideal model should treat the ordinal Likert response parametrically, whilst simultaneously estimating an effect for whether subject of the item was PG or RG. Structural equation modelling provides a flexible framework for implementing such a model. Using a diagonally weighted least squares (DWLS) estimator (Forero, Maydeu-Olivares, & Gallardo-Pujol, 2009), we are able to define what amounts to an item-response theoretic (IRT; Linden & Hambleton, 1997) graded response model (GRM; Samejima, 1997) for each of the Likert scale items, assuming two correlated latent factors of Ostracism and Contempt. This model assumes an ordered logit regression model potentially incorporating a unique slope and set of (3) intercepts (corresponding to boundaries between each Likert response category) for each response. Additionally, a beta coefficient capturing the effect of the item target (RG/PG) may be incorporated as a predictor of each item individually, or constrained to be equal for one or both latent factors. Finally, item factor loadings may be free to vary, accommodating heterogeneity of items. Alternatively, they may be fixed to be constant, which assumes homogeneity of item discrimination (i.e. as per a Rasch analysis). If this assumption holds, this has strong positive implications in terms of yielding a scale that is designed to be summed across items.

Table 5 summarises the beta coefficients and variances of an SEM model with differential item-factor loadings, differential coefficients for the effect of RG/PG, and variable item thresholds. The model was a good fit to the data, with SRMR = .039, RMSEA = .055, and CFI=.993. These criteria reflect the appropriateness of the model in explaining the observed covariance matrix. The standard criteria for SRMR, RMSEA, and CFI are .05, .05, and .90, respectively. The item-factor loadings are very homogenous around 1, which reflects the criteria upon which the items were selected. For the most part, the effect of RG/PG was also relatively homogenous across items, except for one item; 'Most people think gamblers are greedy'. That is, although attitudes towards PGs were generally uniformly more negative than towards RGs, respondents did not feel that problem gamblers were any more greedy than recreational gamblers. The response level thresholds for the items varied somewhat, suggesting that, to some degree, the items probed differential degrees of stigma. Correlation between the latent factors using this framework was .328, slightly less than in the prior analysis.

The results from the initial SEM model suggested a simpler IRT model was plausible, in which item-factor loadings were constrained to be homogenous, and a single beta coefficient was specified for the effect of the RG/PG item target, with the exception of the 'greedy' item, in which the effect of RG/PG is assumed to be zero. The imposition of these assumptions led to a significant decrease in fit. However, more meaningful fit measures deteriorated only moderately: SRMR = .071, RMSEA = .094, and CFI=.971. Over 50% of variance in items in both scales were explained by the latent scores in the more constrained model. The global beta coefficient for RG/PG was 0.344, which may be exponentiated to be interpreted as an odds ratio in much the same way as binary logistic regression. For any division of the categories of Likert item responses, the odds of making a higher response are 1.41 times greater than a lower response, if the target of the probe is PG, rather than RG. Given the Likert response categories, this might be characterised as a moderately large effect, signifying significantly greater perceived stigma towards PGs than RGs.



From the analyses above we concluded that the two scales had satisfactory psychometric properties and were suitable for summation, and further analysis as aggregate scales. However, based on the merely moderate correlation, and the conceptual differences between the two factors, it might be argued as to whether it is meaningful to combine them in a single global stigma scale. Nevertheless, for the combined scale, Cronbach's alpha is .87, and worst split-half reliability (beta) is .67. The discrepancy between these coefficients reflects the bi-dimensionality of the derived scale. The high Cronbach's alpha suggests that the global stigma scale would be a reliable instrument. Table 6 summarises the item statistics and item-reliability metrics for the combined scale. Each item has a satisfactory and similar correlation with the total scale. In Table 6 the scale statistics if item removed also show that no clearly under-performing items exist with respect to the total scale. However, it is likely that a briefer version of the scale could be generated by successively dropping items until the reliability coefficient dropped markedly. Table 7 summarises the base response frequencies for each of the items in the final scale. It illustrates the variation response thresholds for the scale items, with some items tapping lower levels of the attitudinal dimension, and others tapping higher levels.

Item information curves (ICC) describe the region along the latent dimension that an item is providing maximum information; that is, discriminating individuals with lower and high scores on the hypothesised construct. To illustrate with a hypothetical example: to measure depression, we can compare two items: 'I sometimes feel gloomy' and 'I often think about killing myself'. The first item tends to discriminate low levels of the construct, while the second item discriminates at the more extreme end. The point of maximal discrimination is called the location parameter. ICCs were generated for each of the scales, confirming the numerical results that indicated that there was only moderate variability in the location parameter information for items within scales. That is, there tended to be no items that provided information only at the extreme end of the latent response; all items tended to provide information throughout the typical range of variation for the response. Figures 5 and 6 show the ICCs for each item for each subscale. Item-level ICCs may be aggregated to create a test-information curve (TIC), which summarises the ability of the aggregated scale to discriminate along the hypothesised latent dimension. Figure 7 shows the TIC for each subscale, illustrating the range of variation of the latent stigma attitude over which the items provide discriminative ability. The 'plateau-like' shape of the TIC, over the range of z-scores between -3 and 3, indicate almost ideal coverage of the range of normal variation of the latent parameter by the tests.

## Initial development of the Gambling Experienced Stigma Scale (GESS)

The goal was to reduce the 18 candidate questions into a limited set of items that described one or more dimensions of stigma towards one's own gambling. We followed a similar series of steps to refine the own gambling stigma scale. The task was substantially simplified by the fact that there were no complexities with respect to whether RG versus PG was the target. However, less data was available to test the scale, because the information available for psychometric development was limited to those who did gamble, and indicated some positive degree of own-gambling stigma. 403 cases fulfilled these criteria. 63% of the entries in the 403x18 data frame were the minimum value, which gives an indication of the low means, and positive skew observed for the items. The high preponderance of minimum responses also led to a reduction in the available information to perform scale development. We conducted analyses that correctly modelled the skewed / ordinal data distribution but nevertheless, the results of this analysis should be treated with some caution.

A parallel analysis (Figure 8) suggested that, technically, there were 5 potential factors, but a more reasonable interpretation was that the data was quite strongly uni-dimensional, with a possible secondary factor. Use of the ICLUST algorithm identified a number of poorly performing items, and two potential clusters of reliable items. However, we note that combination of these two clusters reduces the coefficient beta only slightly, which tends to argue for a one cluster (one-dimensional) solution. Figure 9 indicates the three groups of items with horizontal lines. Accordingly, we eliminated the non-performing items and ran a polychoric factor analysis using items from the two tentative clusters. The results of the EFA are shown in Table 8. The results appear to be extremely clear in guiding further development. All items load strongly on a single global self-stigma factor. The model is an extremely good fit to the data, with a RMSR of 0.01, TLI = .922, and multiple R<sup>2</sup> of .98. However, it should be kept in mind the relative lack of information in the available dataset, and these results should be treated with caution. It is interesting to note that each of the items that load on the second oblique factor is related to social judgements or interactions with others. Our conclusion, therefore, is that self-stigma is primarily measurable as a uni-dimensional construct. Also, that briefer versions of the self-stigma scale (e.g. using only those items in C6 or C10 from Figure 9 will probably perform almost as well in terms of reliability as the larger set of items provided in Table 8. Finally, four items appear to specifically tap of a form of 'felt social stigma', which is nevertheless highly related to the global self-stigma construct. This raises the further option of selecting a scale that is solely based on 'introspective stigma', with no social element, by avoiding the inclusion of these items. It must be emphasised that our conclusions regarding the psychometric properties of the self-stigma scale must remain tentative, due to the data limitations of the available sample. Future development would need to rely on either a much larger general population study, or be targeted towards heavy or problematic gamblers.

## Correlation and Regressions Using Derived Scales

To finalise the evaluation of the derived scales, we considered their relationship with other variables, including demographics, gambling activity and problem indicators, as well as general attitudes towards gambling. Table 9 summarises the bivariate correlations between the variables, for the full sample, excluding stigma towards own gambling. Given that felt stigma towards one's own gambling is only relevant for those who gamble, we also provide Table 10, which computes the correlations only for those participants who gamble. Table 11 summarises a multiple regression predicting the mean contempt score using all available variables. Those who gambled and those who gambled more (CSPG) had less contempt for (problem) gamblers. Although it falls just short of the .05 significant thresholds, it is significant PGSI scores were positively related to contempt when controlling for gambling activity. As found previously, attitudes were more negative towards problem gamblers than recreational gamblers. Table 12 shows a similar regression analysis for the Ostracism subscale. Older people and females tended to score more highly on this measure. Once again, those who did not gamble tended to have lower scores, and attitudes were more positive towards recreational than problem gamblers. Regression analysis of the self-stigma scale was slightly more complicated; due to the severe positive skew in the data. Therefore, average self-stigma scores were rounded to the nearest Likert response [1-4] and analysed using ordinal logistic regression. The results are summarised in Table 13. The results show that, among gamblers, PGSI scores were positively related to self-stigma, while CSPG scores were negatively related to self-stigma. Further, age but not gender was negatively related to self-stigma. The opposite effects of PGSI and CSPG must be interpreted with reference to the fact that these variables are quite strongly positively correlated. The correct interpretation is that those gamblers who report gambling more heavily, without admitting to gambling problems tend to have less self-stigma.



## Tables

Table 3. Standardized loadings (pattern matrix) based upon correlation matrix for EFA using all 14 items

	$b_1$	$b_2$	$h^2$
Most people think gamblers are liars.	.72		.52
Once they know a person is a gambler, most people will take his or her opinion less seriously.	.70		.61
Most people think that gamblers tend to be unreliable.	.83		.72
Most people think gamblers are unable to handle responsibility.	.81		.65
Most people think gamblers are lazy.	.69		.44
Most people think gamblers are greedy.	.59		.31
Most people believe people who gamble have no self control.	.76		.53
Most people think that gamblers tend to be irresponsible.	.30	.47	.48
Many people would be uncomfortable communicating with a gambler.		.66	.44
Most people think less of a person that gambles.		.72	.53
Most people would not hire a gambler to take care of their children.		.65	.47
Most people would be suspicious of a person if they knew they were a gambler.		.81	.64
Most people would not want to enter into a committed relationship with someone they knew gambled.		.68	.41
Many people would avoid a person who gambles.		.78	.60

$b < .20$  suppressed

Table 4. Standardized loadings (pattern matrix) based upon correlation matrix for EFA using 13 items

	$b_1$	$b_2$	$h^2$
Most people think gamblers are liars.	.72		.52
Once they know a person is a gambler, most people will take his or her opinion less seriously.	.70		.62
Most people think that gamblers tend to be unreliable.	.83		.72
Most people think gamblers are unable to handle responsibility.	.81		.65
Most people think gamblers are lazy.	.69		.44
Most people think gamblers are greedy.	.58		.31
Most people believe people who gamble have no self-control.	.76		.53
Many people would be uncomfortable communicating with a gambler.		.68	.46
Most people think less of a person that gambles.		.71	.52
Most people would not hire a gambler to take care of their children.		.64	.47
Most people would be suspicious of a person if they knew they were a gambler.		.80	.64
Most people would not want to enter into a committed relationship with someone they knew gambled.		.67	.40
Many people would avoid a person who gambles.		.77	.60

$b < .20$  suppressed

Table 5. Beta coefficients and variances of SEM model, item-factor loadings, differential coefficients for the effect of RG/PG, and variable item thresholds

	Loadings			Regression Response ~ PG vs RG target			Thresholds			Variances	
	Est.	SE	z	Est.	SE	z	1.	2.	3.	Est.	SE
Contempt (Factor 1)										.54	.02
Most people think gamblers are liars.	1.00			.54**	.06	-9.36	-1.82**	-.61**	.81**	.46	
Once they know a person is a gambler, most people will take his or her opinion less seriously.	1.12**	.03	45.32	.40**	.06	-6.90	-1.72**	-.42**	1.14**	.33	
Most people think that gamblers tend to be unreliable.	1.19**	.03	47.37	.43**	.06	-7.33	-1.88**	-.81**	-.81**	.24	
Most people think gamblers are unable to handle responsibility.	1.09**	.02	44.69	.45**	.06	-7.67	-1.78**	-.44**	-.97**	.37	
Most people think gamblers are lazy.	.93**	.03	35.14	.28**	.06	-4.72	-1.09**	.53**	1.74**	.54	
Most people think gamblers are greedy.	.76**	.03	26.00	.01	.06	-1.7	-.96**	.51**	1.71**	.69	
Most people believe people who gamble have no self control.	.96**	.02	39.54	.32**	.06	-5.40	-1.91**	-.88**	.72**	.51	
Ostracism (Factor 2)										.49	.03

Many people would be uncomfortable communicating with a gambler.	1.00			.34**	.06	5.86	-.76**	.84**	2.38**	.51
Most people think less of a person that gambles.	1.03**	.03	32.17	.32**	.06	5.50	-1.13**	0.12	1.78**	.48
Most people would not hire a gambler to take care of their children.	1.01**	.03	30.19	.24**	.06	4.20	-1.05**	.31**	1.60**	.50
Most people would be suspicious of a person if they knew they were a gambler.	1.15**	.03	34.34	.28**	.06	4.81	-1.30**	-.08	1.58**	.35
Most people would not want to enter into a committed relationship with someone they knew gambled.	.90**	.04	25.31	.46**	.06	7.57	-1.27**	-.011	1.34	.60
Many people would avoid a person who gambles.	1.11**	.03	33.17	.47**	.06	8.00	-.92**	.61**	2.09**	.39

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\*\* significant at p <.001, \* significant at p <.01

Table 6. Item statistics and item-reliability metrics for the combined scale

	Item Statistics					Scale Statistics if Item Removed			
	<i>r</i>	<i>r.cor</i>	<i>r.drop</i>	<i>m</i>	<i>SD</i>	<i>a</i>	SE	G6 (smc)	Average_ <i>r</i> S/N
Most people think gamblers are liars.	.64	.61	.57	2.3	.82	.86	.01	.88	0.34 6.3
Once they know a person is a gambler, most people will take his or her opinion less seriously.	.70	.69	.64	2.3	.77	.86	.01	.87	0.34 6.1
Most people think that gamblers tend to be unreliable.	.72	.71	.66	2.5	.79	.86	.01	.87	0.33 6.0
Most people think gamblers are unable to handle responsibility.	.69	.67	.63	2.3	.78	.86	.01	.87	0.34 6.1
Most people think gamblers are lazy.	.60	.56	.52	1.9	.69	.87	.01	.88	0.35 6.4
Most people think gamblers are greedy.	.53	.47	.43	2.1	.74	.87	.01	.88	0.36 6.7
Most people believe people who gamble have no self control.	.63	.59	.55	2.7	.78	.86	.01	.88	0.35 6.3
Many people would be uncomfortable communicating with a gambler.	.60	.55	.51	2.3	.70	.87	.01	.88	0.35 6.4
Most people think less of a person that gambles.	.61	.57	.52	2.7	.73	.86	.01	.88	0.35 6.4
Most people would not hire a gambler to take care of their children.	.62	.58	.53	2.5	.79	.86	.01	.88	0.35 6.4
Most people would be suspicious of a person if they knew they were a gambler.	.66	.63	.58	2.8	.72	.86	.01	.88	0.34 6.2

Most people would not want to enter into a committed relationship with someone they knew gambled.	.53	.48	.43	3.0	.76	.87	.01	.88	0.36 6.7
Many people would avoid a person who gambles.	.64	.64	.55	2.6	.73	.86	.01	.88	0.34 6.3

Table 7. Response frequency for each item

	Min.	Max.	1 <sup>st</sup> Quartile	3 <sup>rd</sup> Quartile	<i>M</i>	Med.	<i>SD</i>
Ostracism (PG)	1	4	2.5	3.00	2.77	2.83	.50
Ostracism (RG)	1	4	2.17	2.83	2.44	2.50	.53
Contempt (PG)	1	4	2.14	2.71	2.44	2.43	.53
Contempt (RG)	1	4	1.86	2.57	2.19	2.29	.58

	Strongly Disagree	S/W Disagree	S/W Agree	Strongly Agree
Most people think gamblers are liars.	.17	.41	.36	.06
Once they know a person is a gambler, most people will take his or her opinion less seriously.	.14	.43	.38	.04
Most people think that gamblers tend to be unreliable.	.11	.32	.49	.08
Most people think gamblers are unable to handle responsibility.	.14	.45	.36	.05
Most people think gamblers are lazy.	.25	.57	.16	.02
Most people think gamblers are greedy.	.21	.54	.22	.03
Most people believe people who gamble have no self control.	.08	.27	.54	.12
Many people would be uncomfortable communicating with a gambler.	.10	.52	.34	.03
Most people think less of a person that gambles.	.06	.30	.54	.10
Most people would not hire a gambler to take care of their children.	.08	.40	.41	.11
Most people would be suspicious of a person if they knew they were a gambler.	.04	.27	.56	.13
Most people would not want to enter into a committed relationship with someone they knew gambled.	.03	.19	.52	.26
Many people would avoid a person who gambles.	.06	.41	.45	.09

Table 8. Results from EFA of self –stigma items

	$b_1$	$b_2$	$h^2$
I feel the need to hide my gambling from my friends.	.91	.23	.92
I sometimes have the thought that I've screwed up my life by gambling.	.91	.24	.93
Most people would always suspect that I had returned to gambling, even if I didn't gamble anymore.	.93	.22	.95
People have insulted me because of my gambling.	.91		.90
I have the thought that I should be ashamed of myself for my gambling.	.97		.93
People can tell that I am a gambler by the way I look.	.86		.75
Others think I am not worth the investment of time and resources because I am a gambler.	.95		.89
I sometimes have the thought that I deserve the bad things that have happened to me in life because I gamble.	.94		.88
I feel the stress in my life is what causes me to gamble.	.93		.86
Others view me as morally weak because I am a gambler.	.96		.91
I avoid situations where another person might have to depend on me.	.96		.91
I don't think I can be trusted because I gamble.	.96		.91
Once they know I'm a gambler, most people will take my opinion less seriously.	.97		.93

$b < .20$  suppressed



Table 9. Bivariate correlations between the variables, for the full sample (Excluding stigma towards own gambling)

	1.	2.	3.	4.	5.	6.	7.	8.
1. Age	1	PS	PS	P	P	P	P	P
2. Gender (F)	-.19***	1	PC	PS	PS	PS	PS	PS
3. Gamble	-.01	-.16***	1	PS	PS	PS	PS	PS
4. Contempt	-.01	.03	-.16***	1	P	P	P	P
5. Ostracism	.05	.11***	-.18***	.46***	1	P	P	P
6. ATGS	-.05	-.02	-.05	-.03	-.02	1	P	P
7. PGSI	-.01	-.12***	.57***	-.02	-.04	-.06*	1	P
8. CSPG	.06*	-.15***	.69***	-.09**	-.10***	-.01	.60***	1

P = Pearson, PS = Polyserial, PC = Polychoric, \*\*\*p <.001, \*\*p <.01, \*p < .05.

Table 10. Bivariate correlations between the variables (including only participants who gamble)

	1.	2.	3.	4.	5.	6.	7.	8.
1. Age	1	PS	P	P	P	P	P	P
2. Gender (F)	-.22***	1	PS	PS	PS	PS	PS	PS
3. Stigma -own	-.11*	-.08	1	P	P	P	P	P
4. Contempt	-.04	.03	.16***	1	P	P	P	P
5. Ostracism	.02	.13**	.02	.43***	1	P	P	P
6. ATGS	-.08	.04	-.03	-.11	-.03	1	P	P
7. PGSI	-.02	-.15**	.30***	.03	.01	-.10*	1	P
8. CSPG	.13**	-.18***	.07	-.06	-.06	.03	.55***	1

P = Pearson, PS = Polyserial, PC = Polychoric, \*\*\*p <.001, \*\*p <.01, \*p < .05.

Table 11. Multiple regression predicting the mean contempt score using all available variables

	<i>b</i>	SE	<i>t</i>
Age	-.01	.01	-0.43
Gender (F)	.01	.03	0.22
Gamble	-.12	.04	-3.25**
ATGS	-.01	.06	-1.60
PGSI	.22	.12	1.74
CSPG	-.08	.04	-2.09 *
Target (RG vs PG)	.24	.03	-8.34 ***

DV = Contempt, \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .

Table 12. Multiple regression predicting the mean ostracism score using all available variables

	<i>b</i>	SE	<i>t</i>
Age	.03	.01	2.62 **
Gender (F)	.09	.03	3.18**
Gamble	-.15	.04	-4.20***
ATGS	-.00	.05	-0.05
PGSI	.14	.12	1.14
CSPG	-.06	.04	1.58
Target (RG vs PG)	.24	.03	-8.61 ***

DV = Ostracism, \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .

Table 13. Ordinal logistic regression predicting self-stigma for those who gambled

	<i>b</i>	SE	<i>t</i>
Age	-.20	.09	-2.18*
Gender (F)	-.15	.23	0.63
ATGS	-.11	.46	-0.23
PGSI	2.75	.52	5.31***
CSPG	-.41	.19	-2.19 *

DV = Self Stigma, \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .

Figures

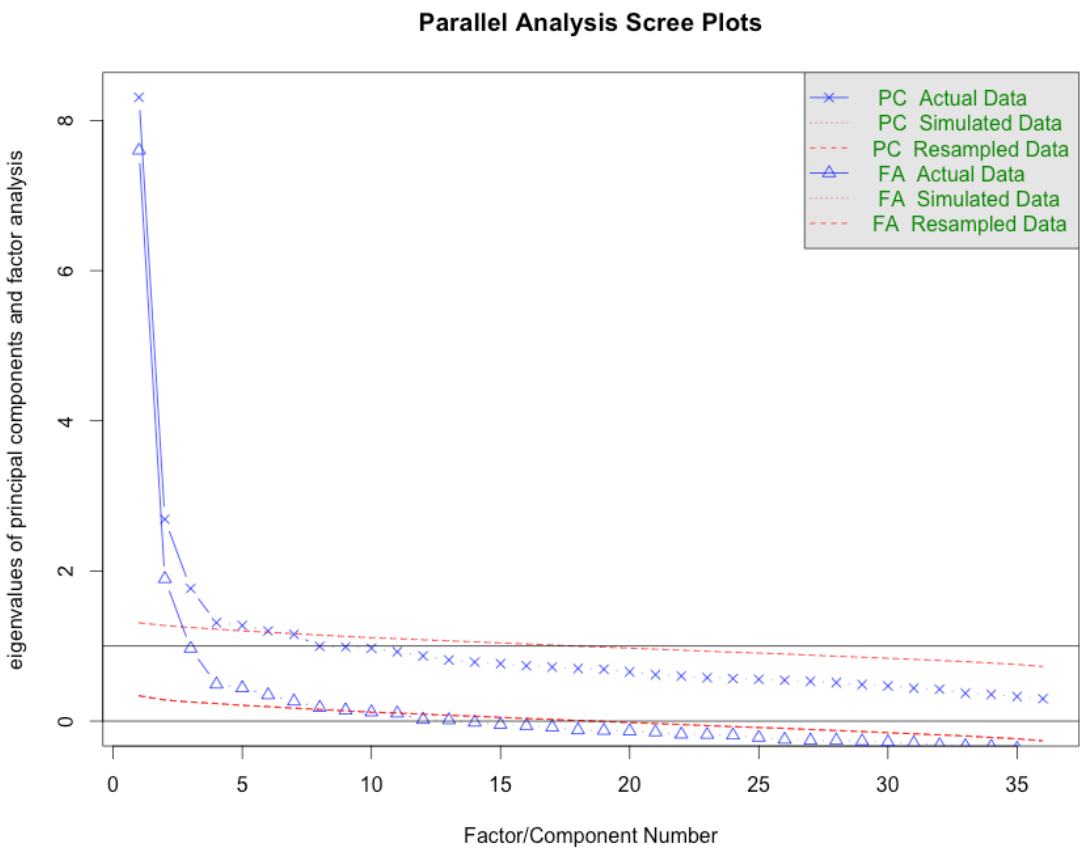


Figure 1. Parallel Analysis of factor structure using standard Pearson correlation matrix and removing mean differences due to PG and RG item targets

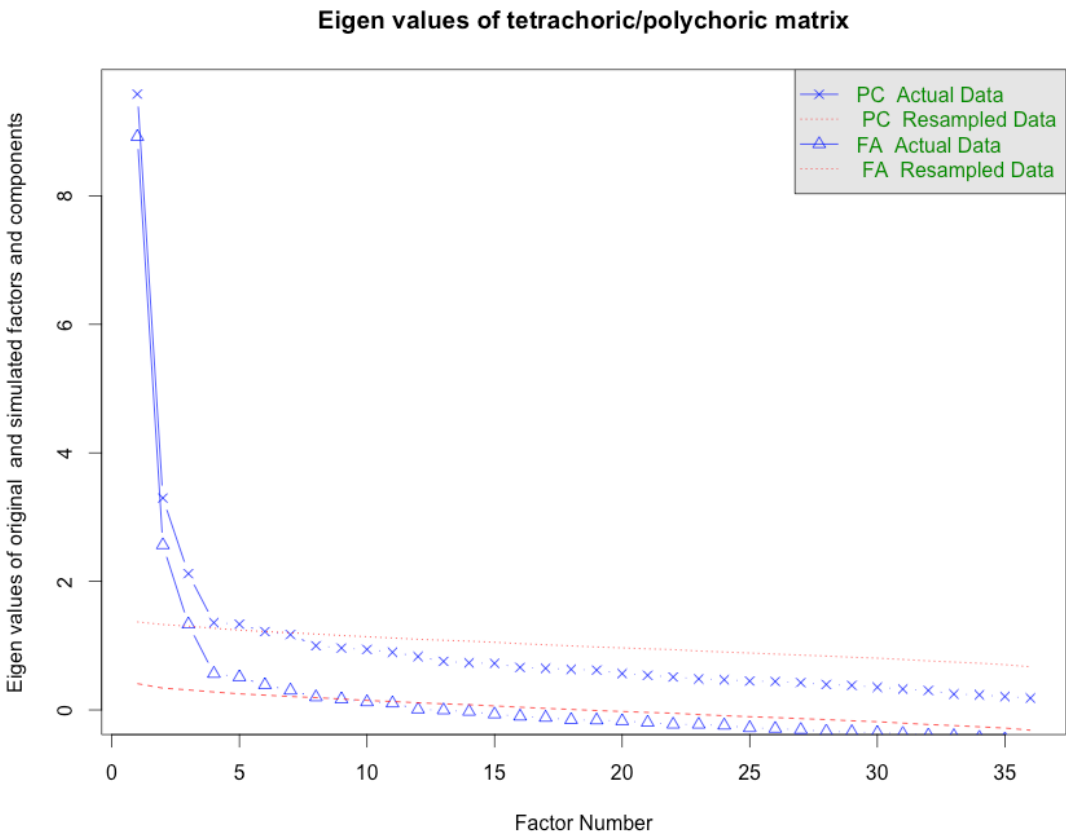


Figure 2. Parallel Analysis of factor structure using a polychoric correlation matrix without removing mean differences due to PG and RG item targets

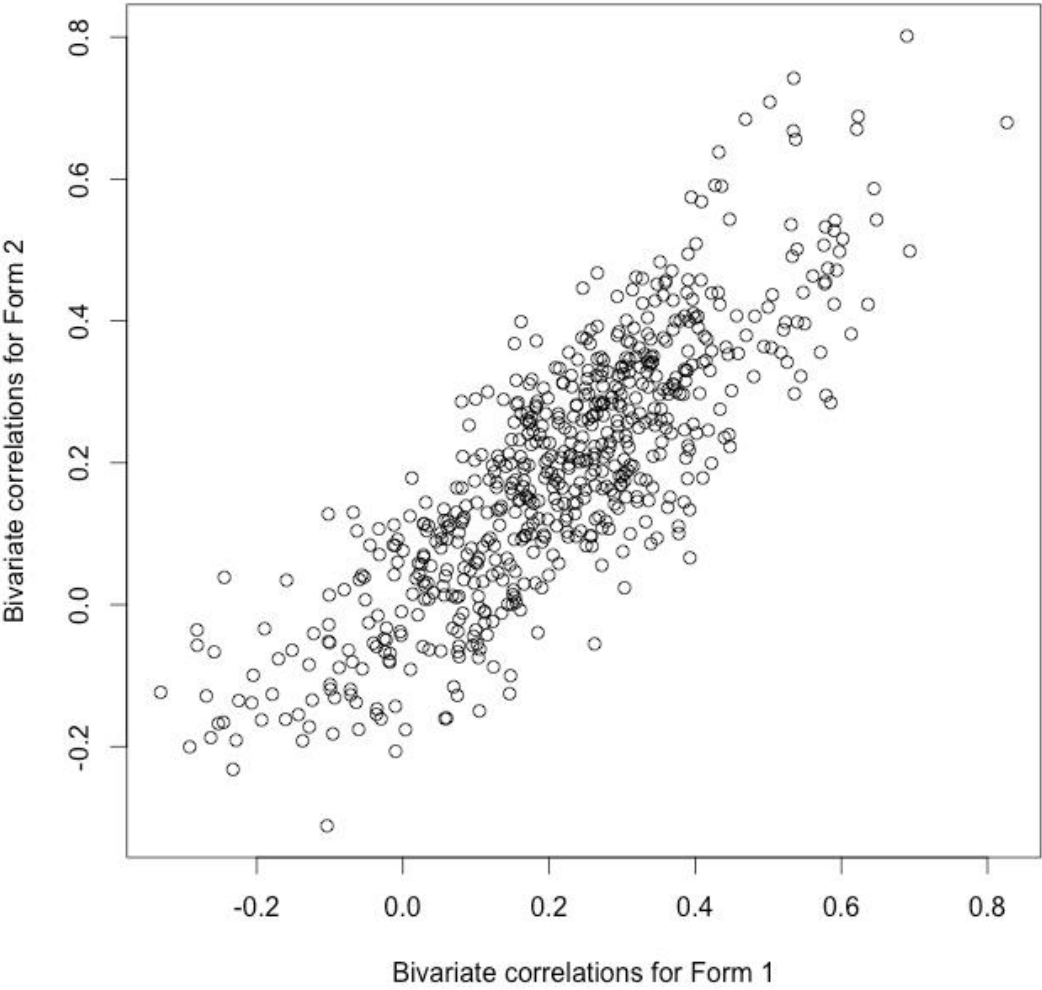


Figure 3. Comparison of bivariate correlations (lower triangle of the correlation matrix) between Form 1 and Form 2. Forms differ in terms of whether the item target was PG or RG

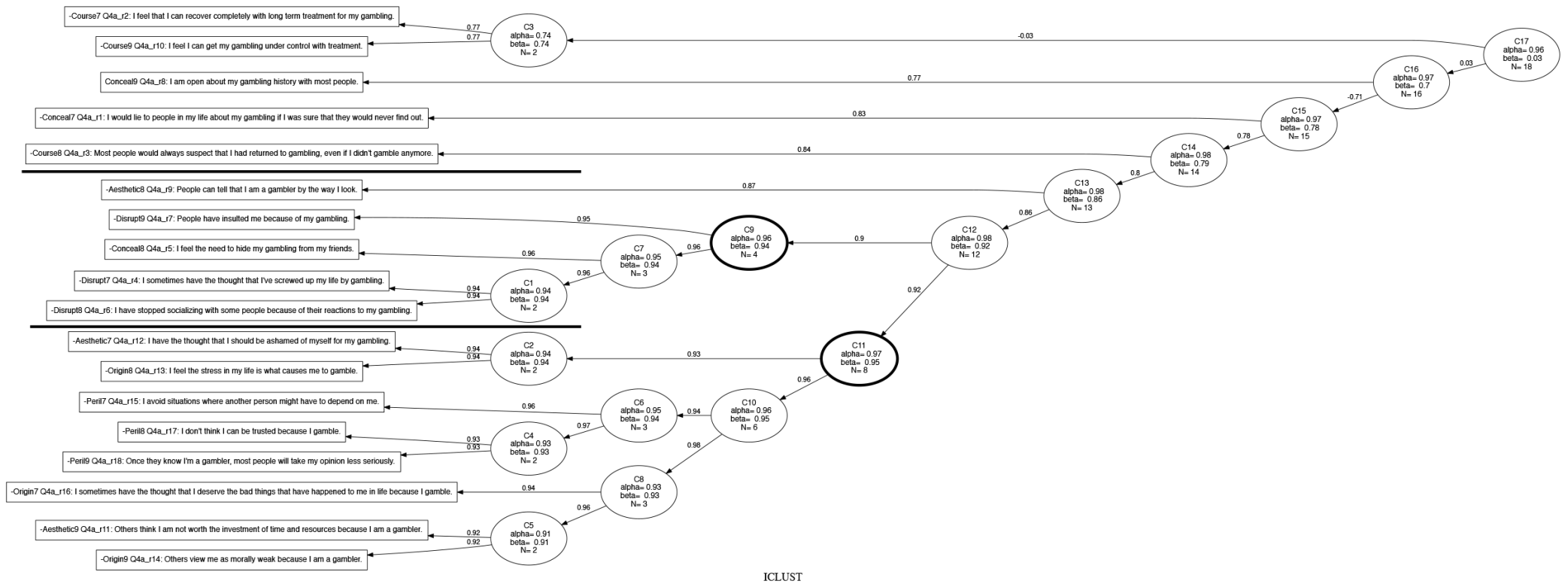


Figure 4. Results of ICLUST algorithm applied to the full concourse of stigma items

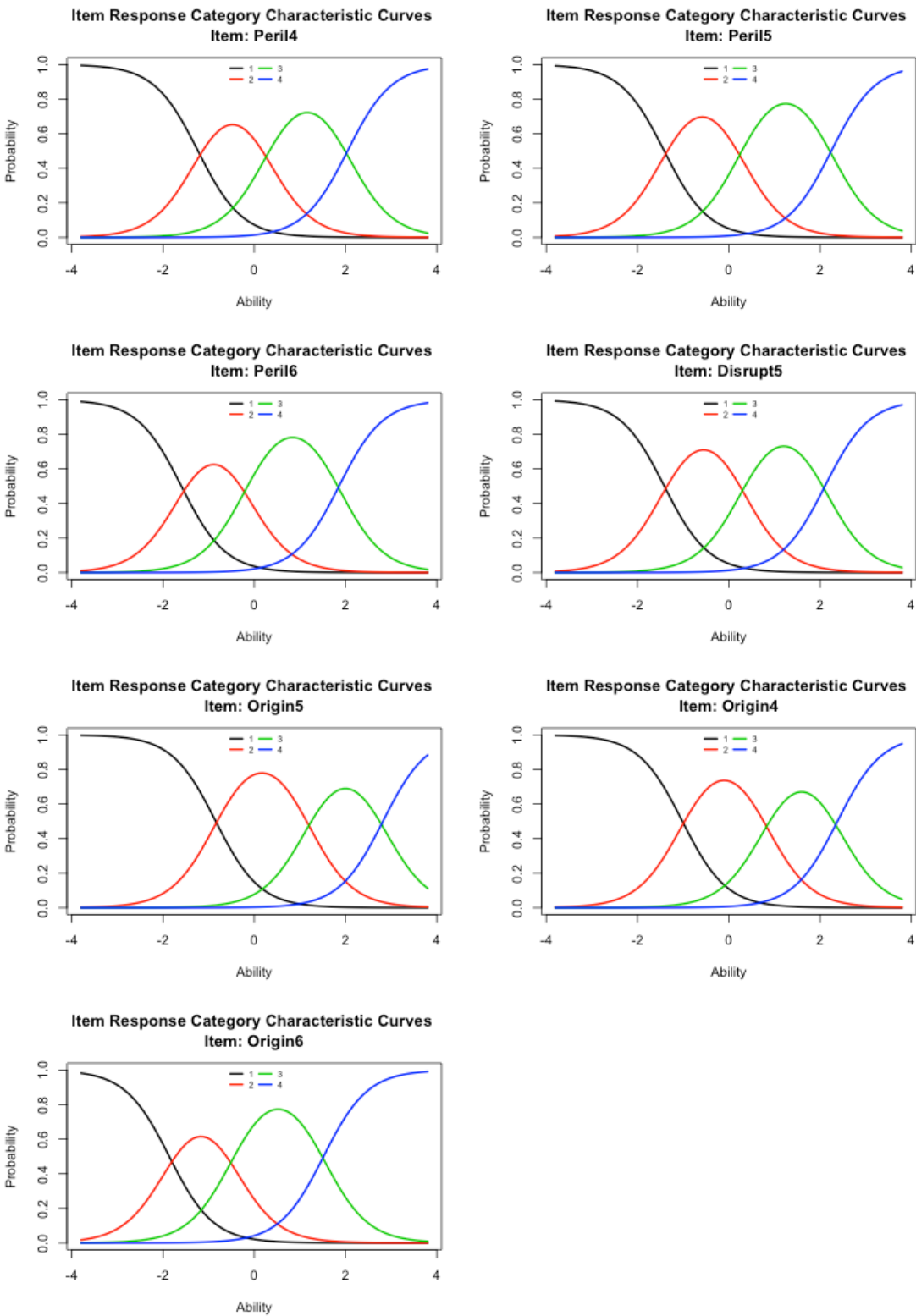


Figure 5. Item characteristic curves for the items as indicators of the latent construct 'Contempt'



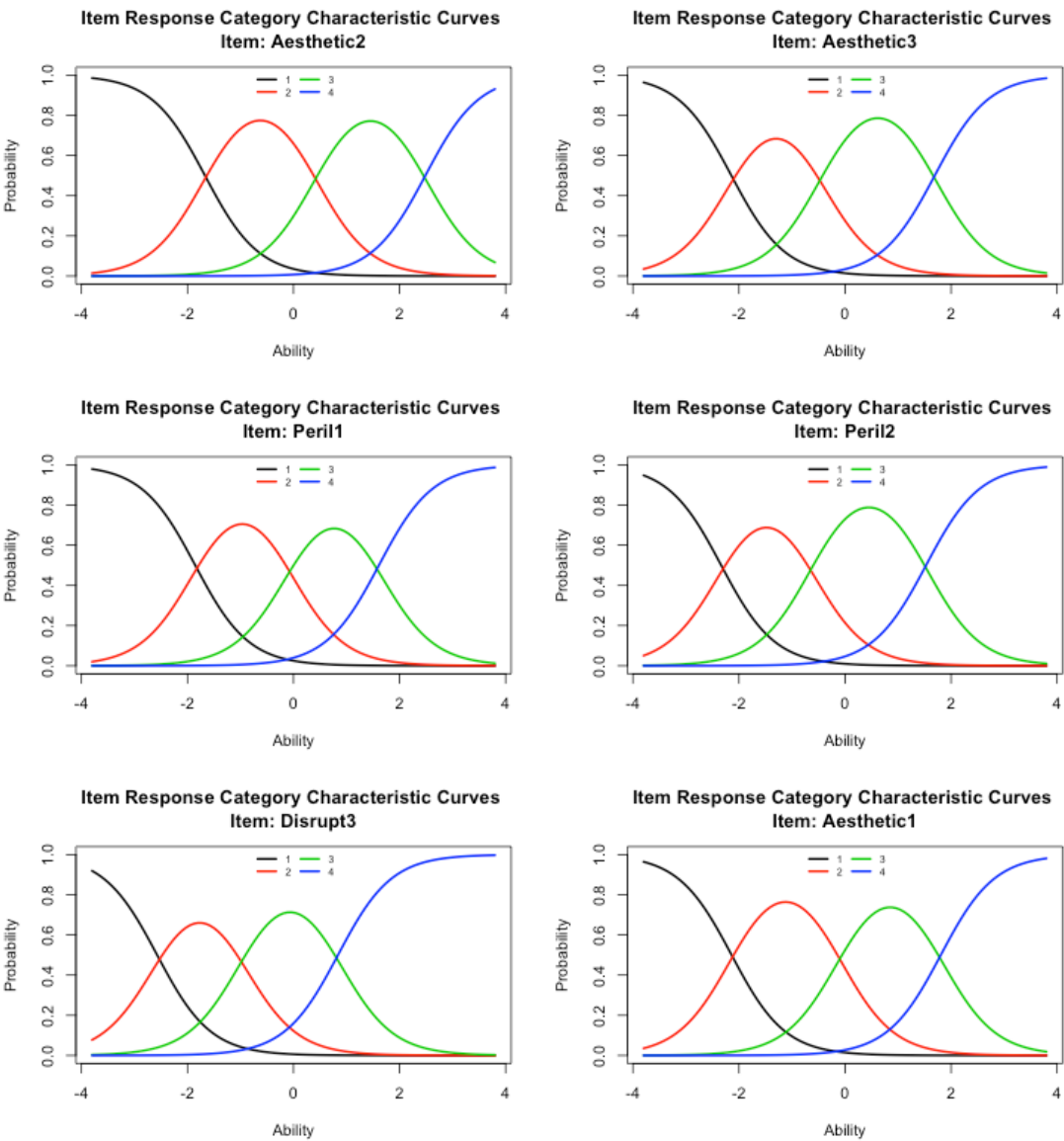


Figure 6. Item characteristic curves for the items as indicators of the latent construct ‘Ostracism’

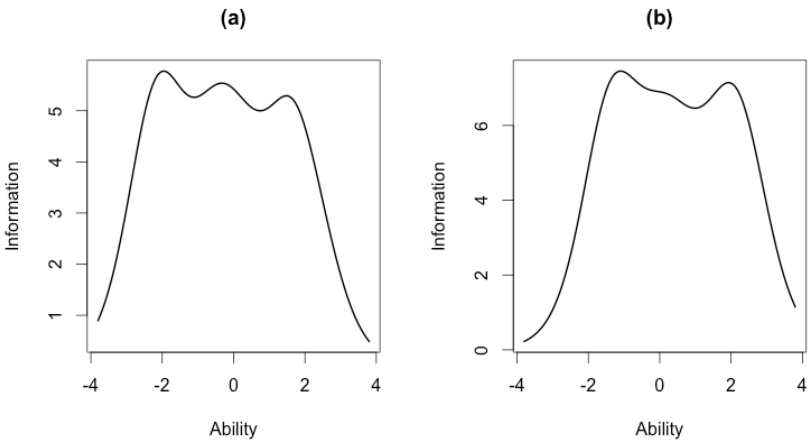


Figure 7. Test information curves for the ostracism (a) and contempt (b) subscales

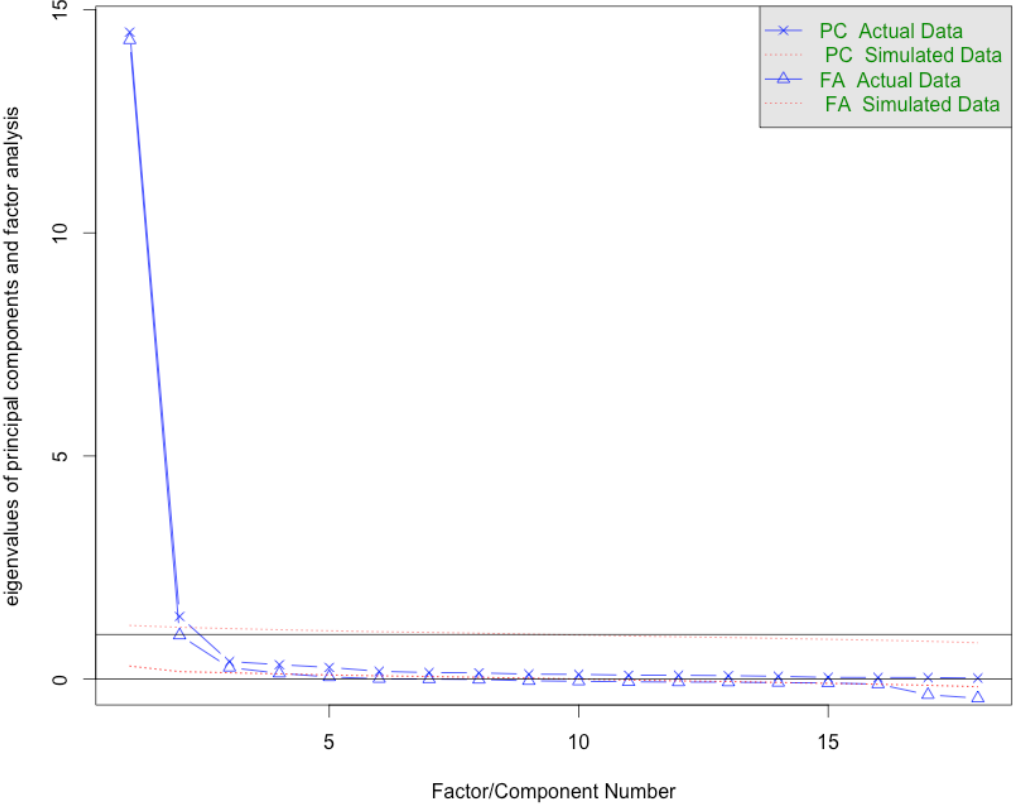
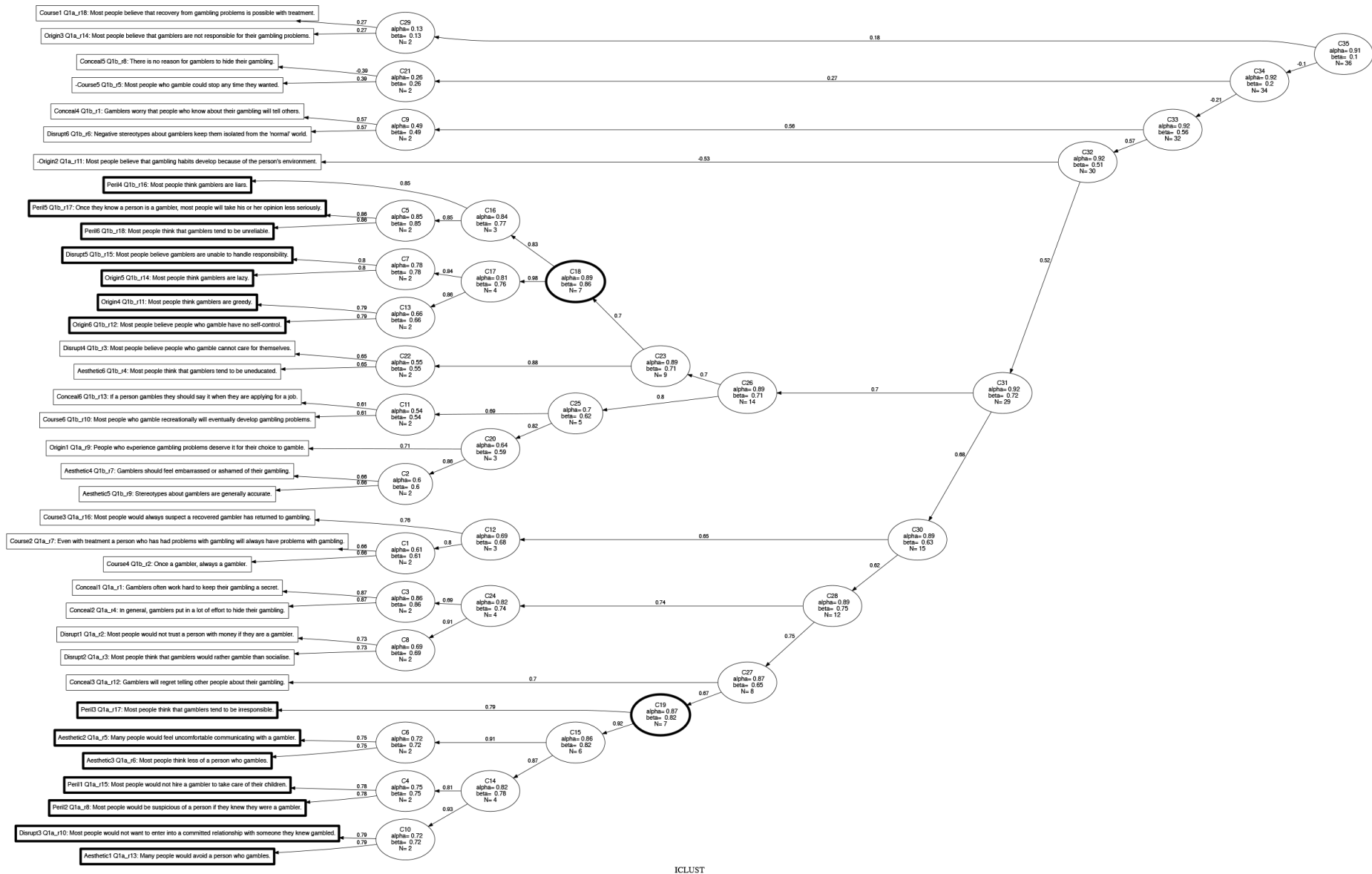


Figure 8. Parallel analysis to indicate the number of latent dimensions within the own-gambling stigma scale



## Conclusions

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The present study, to our knowledge, is the first to undertake the construction and validation of both perceived and experienced stigma scales specific to gambling. Three types of stigma were initially considered for inclusion: enacted, perceived and internalised (experienced). Issues relating to social desirability bias and evaluation apprehension meant that attempts to measure enacted stigma using a scale instrument were unlikely to be successful. An examination of other forms of stigma, the way they have been measured and methodological issues in relation to the construction of the measurement instrument, were examined to inform the current project. This review proved useful both in terms of methodological issues and in generating potential items for inclusion in the scales, particularly the initial development of the parallel scales for both perceived and experienced stigma.

The clear delineation between experienced and perceived stigma was evident during analysis. Consequently, the Gambling Perceived Stigma Scale (GPSS) and the Gambling Experienced Stigma Scale (GESS) were validated independently. Both scales indicated strong psychometric properties, although further validation with a larger sample of heavy or problem gamblers is required for the GESS. The key findings for the scales were that:

- Analysis of the GPSS indicated a strong two-factor model of perceived stigma with dimensions of Contempt and Ostracism. Moderate correlations suggest that the use of these sub-scales may be more meaningful than a global Perceived Stigma scale. The full scale is presented following the conclusions.
- Analysis of the GESS suggested a single uni-dimensional Experienced Stigma Scale and both scales discriminate well between stigma held towards recreational and problem gambling targets. The full scale is presented following the conclusions.

Although analysis of the factor structure did not support the six-dimension stigma framework adopted from Jones et al. (1984), the identified dimensions of Contempt and Ostracism align closely with the Jones framework, particularly in the areas of peril and aesthetics. Importantly, these dimensions are also consistent with literature examining stigma utilising measures such as desire for social distance (e.g., Angermeyer & Matschinger, 2003). Thus, while a six-dimension model of stigma does not appear to be the most efficient framework within which to assess gambling related stigma, a theoretical examination derived from this foundation is a subset that is relevant to the understanding of the origin of gambling related stigma.

Importantly, the useful delineation of experienced and perceived stigma offers a means to approach and address the potential impact of stigma in the lives of those with gambling problems. Whilst it is known that stigma is linked with reduced likelihood of accessing treatment, little is known about how stigma in recreational and problem gambling impacts treatment seeking differentially. This scale provides the methods and tools to address this issue. In addition the scales provide practitioners, health care workers, treatment providers and policy makers with tools that may usefully inform awareness and understanding of the stigma both experienced and perceived by those who gamble. The generalizability of the perceived and experienced stigma scales will depend on successful dissemination and utilisation in the community, and among researchers and practitioners to increase awareness of the processes of stigma involved in gambling.

While the psychometric properties of the Experienced Stigma scale suggest a strong uni-dimensional global scale, it is important to highlight that only a limited proportion of the sample self-identified as regular or recent gamblers and, thus, caution should be used in interpretation of the results. Further

development of the GESS is recommended and should seek to include a larger population sample or purposeful sampling of people with high levels of consumption of gambling products or who experience problems with gambling. In addition, it is likely that the scale may be further reduced with additional validation.

The finding of negative attitudes to gambling and self-stigma experienced amongst those participants who gamble should also be investigated further. Although this finding is consistent with previous studies (Donaldson et al., 2015; Orford, Griffiths, Wardle, Sproston, & Erens, 2009; Salonen et al., 2014), the paradoxical relationship between observed attitudes towards gambling and engagement in gambling activities remains to be comprehensively explored. This relationship is important in understanding the nature and origin of this stigma, and also the potential associated harm, and suggests that beyond any self-recrimination due to the over investment of time or money in gambling, that there is a judgement about the nature of the activity compared with other recreational pursuits.

These scales offer utility in terms of the measurement of stigma relating to gambling and its impact as a potential barrier to treatment for those who experience problems with gambling. In addition, the scales allow assessment of the impact of stigma on the conduct of research into gambling, and measurement of the effectiveness of efforts to reduce gambling related stigma. Importantly, the findings of this study provide a broad and rigorous platform on which to base future scale validation and application.

## Gambling Perceived Stigma Scale (GPSS)

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We are interested in your thoughts about people who gamble. For each of the following statements, please consider how you think people who gamble are generally perceived by others.

Important: When you think about gambling DO NOT include lottery tickets, instant scratch tickets or raffles, but DO include all other types of gambling such as poker machines, card games, racing, sports betting, day trading, bingo and casino games.

*[For each item, substitute Recreational / Problem gambling target as required]*

Strongly Disagree (1)   Somewhat Disagree (2)   Somewhat Agree (3)   Strongly Agree (4)

### Contempt Subscale

1. Most people think [gamblers / problem gamblers] are liars
2. Once they know a person is a [gambler / problem gambler], most people will take his or her opinion less seriously
3. Most people think that [gamblers / problem gamblers] tend to be unreliable
4. Most people think that [gamblers / problem gamblers] are unable to handle responsibility
5. Most people think that [gamblers / problem gamblers] are lazy
6. Most people think that [gamblers / problem gamblers] are greedy
7. Most people believe that [people who gamble / problem gamblers] have no self-control

### Ostracism Subscale

8. Many people would be uncomfortable communicating with a [gambler / problem gambler]
9. Most people think less of a [person who gambles / problem gambler]
10. Most people would not hire a [gambler / problem gambler] to take care of their children
11. Most people would be suspicious of a person if they knew they were a [gambler / problem gambler]
12. Most people would not want to enter into a committed relationship with someone they knew [gambled / had a gambling problem]
13. Many people would avoid a person who [gambles / had a gambling problem]

## Gambling Experienced Stigma Scale (GESS)

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We are interested in your thoughts about your own gambling experiences. Please indicate how much you agree with each of the following statements.

Important: When you think about gambling DO NOT include lottery tickets, instant scratch tickets or raffles, but DO include all other types of gambling such as poker machines, card games, racing, sports betting, day trading, bingo and casino games.

Strongly Disagree (1)   Somewhat Disagree (2)   Somewhat Agree (3)   Strongly Agree (4)

1. I feel the need to hide my gambling from my friends
2. I sometimes have the thought that I've screwed up my life by gambling
3. Most people would always suspect that I'd returned to gambling, even if I didn't gamble anymore
4. People have insulted me because of my gambling
5. I have the thought that I should be ashamed of myself for my gambling
6. People can tell that I am a gambler by the way I look
7. Others think I am not worth the investment of time and resources because I am a gambler
8. I sometimes have the thought that I deserve the bad things that have happened to me in life because I gamble
9. I feel the stress in my life is what causes me to gamble
10. Others view me as morally weak because I am a gambler
11. I avoid situations where another person might have to depend on me
12. I don't think I can be trusted because I gamble
13. Once they know I'm a gambler, most people will take my opinion less seriously



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## Appendices

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**Appendix A: Stigma measurement scales identified from literature review**

Scale name	Condition used for	Measures perceived stigma	Measures internalised stigma	Other items measured	Psychometric properties reported	Studies used in of relevance
Discrimination, alienation, perceived devaluation and coping – scale not named	Illicit drug use	3 items	3 items	Discrimination, coping behaviour	Yes, in same article	(Ahern et al., 2007)
The Self-Stigma of Depression Scale (SSDS)	Depression	-	16 items	-	Yes, in same article	(Barney et al., 2010)
Perceived Devaluation and Discrimination (PDD)	Mental illness, depression, gambling, substance abuse, alcohol abuse, smoking	12 items	-	-	Yes, in other articles	(Björkman et al., 2007; Brown et al., 2010; Horsch, 2011; Link, 1987; Link, Mirotznik, & Cullen, 1991; Luoma et al., 2010; Palamar et al., 2012; Reynolds et al., 2008; Stuber et al, 2008)
Social Distance Scale (SDS)	Asperger's Disorder, mental illness, gambling	-	-	Desired social distance	Yes, in other articles	(Butler & Gillis, 2011; Feldman & Crandall, 2007; Horsch, 2011; Norman et al, 2012)
Day's Mental Illness Stigma Scale	Mental illness	27 items	-	1 item – professional efficacy	Yes, in same article	(Day et al., 2007)
Stigma and attitudes towards antenatal depression in health care – scale not named	Antenatal depression	-	-	Fear, stigma, nervousness, willingness to care for, and social distance	Yes, in same article	(Gawley et al., 2011)

Developing and validating a scale to measure the enacted and felt stigma of gambling

Scale name	Condition used for	Measures perceived stigma	Measures internalised stigma	Other items measured	Psychometric properties reported	Studies used in of relevance
Attribution Questionnaire (AQ)	Gambling	-	-	Behavioural attributions towards stigmatised conditions	Yes, in other article	(Horch, 2011)
Self-Stigma of Mental Illness Scale(SSMIS)	Gambling	-	30 items	-	Yes, in other article	(Horch, 2011)
Stigma-related Interpersonal Rejection(SRIR)	Gambling	-	-	9 items - discrimination	Yes, in other article	(Horch, 2011)
Depression Self-Stigma Scale (DSSS)	Depression	4 items	18 items	6 items – discrimination, 4 items- treatment stigma	Yes, in same article	(Kanter et al., 2008)
Mental Illness Clinicians Attitudes (MICA) Scale	Mental Illness	-	-	Clinicians attitudes towards mental illness	Yes, in same article	(Kassam, Glozier, Leese, Henderson, & Thornicroft, 2010)
Opening Minds Scale for Health Care Providers (OMS-HC)	Mental Illness	-	-	Clinicians attitudes towards mental illness	Yes, in same article	(Kassam, Papish, Modgill, & Patten, 2012)
The Stigma Scale (SS)	Mental Illness	-	11 items	12 items - discrimination	Yes, in same article	(King et al., 2007)

Scale name	Condition used for	Measures perceived stigma	Measures internalised stigma	Other items measured	Psychometric properties reported	Studies used in of relevance
Coping Orientations: Secrecy, Avoidance-withdrawal and Education – scale not named	Mental Illness	4 items - secrecy	1 item – secrecy, 7 items - withdrawal	5 items – education of others	Yes, in same article – coping efforts increased stigma	(Link et al., 1991)
Substance Abuse Self-Stigma Scale (SASSS)	Substance abuse	-	8 items – self-devaluation, 9 items – discrimination , 13 items-avoidance, 10 items – values disengagement	-	Yes, in same article	(Luoma et al., 2013)
Internalised Stigma of Mental Illness (ISMI)	Mental Illness	-	19 items	5 items – discrimination, 5 items – stigma resistance	Yes, in same and other articles	(Brown et al., 2010; Ritsher et al., 2003; Sibitz et al, 2011)
Self-Stigma Of Seeking Help (SSOSH) scale	Mental Illness	-	10 items – treatment seeking stigma	-	Yes, in same article	(Vogel et al., 2006)



## APPENDIX B: QUESTIONNAIRE

### Beliefs about Gambling and Gamblers

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Question Name: Start

=====

CQUniversity Australian Health and Social Science (AHSS) Project

Thank you for your support of our research, we sincerely appreciate it.

### VERSION 1

#### Section 1: General gambling

=====

Question Name: Q1a

=====

We are interested in your thoughts about people who gamble. For each of the following statements, please consider how you think people who gamble are generally perceived by others.

Important: When you think about gambling DO NOT include lottery tickets, instant scratch tickets or raffles, but DO include all other types of gambling such as poker machines, card games, racing, sports betting, day trading, bingo and casino games.

**Q1a: Please indicate the degree to which you agree or disagree with each of the statements below.**

- 1 *Gamblers often work hard to keep their gambling a secret.*
- 2 *Most people would not trust a person with money if they are a gambler.*
- 3 *Most people think that gamblers would rather gamble than socialise.*
- 4 *In general, gamblers put in a lot effort to hide their gambling.*
- 5 *Many people would feel uncomfortable communicating with a gambler.*
- 6 *Most people think less of a person who gambles.*
- 7 *Even with treatment a person who has had problems with gambling will always have problems with gambling.*
- 8 *Most people would be suspicious of a person if they knew they were a gambler.*
- 9 *People who experience gambling problems deserve it for their choice to gamble.*
- 10 *Most people would not want to enter into a committed relationship with someone they knew gambled.*
- 11 *Most people believe that gambling habits develop because of the person's environment.*
- 12 *Gamblers will regret telling other people about their gambling.*
- 13 *Many people would avoid a person who gambles.*
- 14 *Most people believe that gamblers are not responsible for their gambling problems.*
- 15 *Most people would not hire a gambler to take care of their children.*
- 16 *Most people would always suspect a recovered gambler has returned to gambling.*
- 17 *Most people think that gamblers tend to be irresponsible.*
- 18 *Most people believe that recovery from gambling problems is possible with treatment.*

- 1 Strongly disagree
- 2 Somewhat disagree
- 3 Somewhat agree
- 4 Strongly agree

## Section 2: Problem gambling

=====

Question Name: Q2a

=====

We are now interested in your thoughts about people who experience problems as a result of their gambling. For each of the following statements, please consider how you think people who gamble are generally perceived by others.

**Q2a: Please indicate the degree to which you agree or disagree with each of the statements below.**

- 1 *Problem gamblers worry that people who know about their gambling will tell others.*
- 2 *Once a problem gambler, always a problem gambler.*
- 3 *Most people believe people who have gambling problems cannot care for themselves.*
- 4 *Most people think problem gamblers are lazy.*
- 5 *Most people believe problem gamblers are unable to handle responsibility.*
- 6 *There is no reason for problem gamblers to hide their gambling.*
- 7 *Negative stereotypes about problem gamblers keep them isolated from the 'normal' world*
- 8 *Most people who gamble recreationally will eventually develop gambling problems.*
- 9 *Most people think problem gamblers are liars.*
- 10 *Problem gamblers should feel embarrassed or ashamed of their gambling.*
- 11 *Stereotypes about problem gamblers are generally accurate.*
- 12 *Most people think that problem gamblers tend to be uneducated.*
- 13 *Most people who have a gambling problem could stop any time they wanted.*
- 14 *Most people think problem gamblers are greedy.*
- 15 *If a person has a problem with their gambling they should say it when they are applying for a job.*
- 16 *Most people believe problem gamblers have no self-control.*
- 17 *Once they know a person is a problem gambler, most people will take his or her opinion less seriously.*
- 18 *Most people think that problem gamblers tend to be unreliable.*

- 1 Strongly disagree
- 2 Somewhat disagree
- 3 Somewhat agree
- 4 Strongly agree

## Section 3: Personal Gambling

=====

Question Name: Q3a

=====

This section of the survey will ask about your own gambling experiences.

Important: When you think about gambling DO NOT include lottery tickets, instant scratch tickets or raffles, but DO include all other types of gambling such as poker machines, card games, racing, sports betting, day trading, bingo and casino games.

**Q3a: Have you gambled at all within the last 12 months?**

- 1 Yes
- 2 No

=====

Question Name: Q4a

=====

We are now interested in your thoughts about your own gambling. For each of the following statements, please consider how you think people who gamble are generally perceived by others.

**Q4a: Please indicate the degree to which you agree or disagree with each of the statements below.**

- 1 *I would lie to people in my life about my gambling if I was sure that they would never find out.*
- 2 *I feel that I can recover completely with long term treatment for my gambling.*
- 3 *Most people would always suspect that I had returned to gambling, even if I didn't gamble anymore.*
- 4 *I sometimes have the thought that I've screwed up my life by gambling.*
- 5 *I feel the need to hide my gambling from my friends.*
- 6 *I have stopped socializing with some people because of their reactions to my gambling.*
- 7 *People have insulted me because of my gambling.*
- 8 *I am open about my gambling history with most people.*
- 9 *People can tell that I am a gambler by the way I look.*
- 10 *I feel I can get my gambling under-control with treatment.*
- 11 *Others think I am not worth the investment of time and resources because I am a gambler.*
- 12 *I have the thought that I should be ashamed of myself for my gambling.*
- 13 *I feel the stress in my life is what causes me to gamble.*
- 14 *Others view me as morally weak because I am a gambler.*
- 15 *I avoid situations where another person might have to depend on me.*
- 16 *I sometimes have the thought that I deserve the bad things that have happened to me in life because I gamble.*
- 17 *I don't think I can be trusted because I gamble.*
- 18 *Once they know I'm a gambler, most people will take my opinion less seriously.*

- 1 Strongly disagree
- 2 Somewhat disagree
- 3 Somewhat agree
- 4 Strongly agree

## VERSION 2

### Section 1: General gambling

=====

Question Name: Q1b

=====

We are interested in your thoughts about people who gamble. For each of the following statements, please consider how you think people who gamble are generally perceived by others.

Important: When you think about gambling DO NOT include lottery tickets, instant scratch tickets or raffles, but DO include all other types of gambling such as poker machines, card games, racing, sports betting, day trading, bingo and casino games.

**Q1: Please indicate the degree to which you agree or disagree with each of the statements below.**

- 1 *Gamblers worry that people who know about their gambling will tell others.*
- 2 *Once a gambler, always a gambler.*
- 3 *Most people believe people who gamble cannot care for themselves.*
- 4 *Most people think that gamblers tend to be uneducated.*
- 5 *Most people who gamble could stop any time they wanted.*
- 6 *Negative stereotypes about gamblers keep them isolated from the 'normal' world*
- 7 *Gamblers should feel embarrassed or ashamed of their gambling.*
- 8 *There is no reason for gamblers to hide their gambling.*
- 9 *Stereotypes about gamblers are generally accurate.*
- 10 *Most people who gamble recreationally will eventually develop gambling problems.*
- 11 *Most people think gamblers are greedy.*
- 12 *Most people believe people who gamble have no self-control.*
- 13 *If a person gambles they should say it when they are applying for a job.*
- 14 *Most people think gamblers are lazy.*
- 15 *Most people believe gamblers are unable to handle responsibility.*
- 16 *Most people think gamblers are liars.*
- 17 *Once they know a person is a gambler, most people will take his or her opinion less seriously.*
- 18 *Most people think that gamblers tend to be unreliable.*

- 1 Strongly disagree
- 2 Somewhat disagree
- 3 Somewhat agree
- 4 Strongly agree

### Section 2: Problem gambling

=====

Question Name: Q2b

=====

We are now interested in your thoughts about people who experience problems as a result of their gambling. For each of the following statements, please consider how you think people who gamble are generally perceived by others.

**Q2: Please indicate the degree to which you agree or disagree with each of the statements below.**

- 1 *Problem gamblers often work hard to keep their gambling a secret.*
- 2 *Most people believe that recovery from gambling problems is possible with treatment.*
- 3 *Most people would not trust a person with money if they are a problem gambler.*
- 4 *In general, problem gamblers put in a lot of effort to hide their gambling.*
- 5 *Most people believe that gambling problems develop because of the person's environment.*
- 6 *Most people would always suspect a recovered problem gambler has returned to gambling.*
- 7 *Most people think that problem gamblers would rather gamble than socialise.*
- 8 *Most people would not want to enter into a committed relationship with someone they knew had a gambling problem.*

- 9 *Many people would avoid a person who had a gambling problem.*
  - 10 *Problem gamblers will regret telling other people about their gambling.*
  - 11 *Many people would feel uncomfortable communicating with a problem gambler.*
  - 12 *Most people think less of a problem gambler.*
  - 13 *People who experience gambling problems deserve it for their choice to gamble.*
  - 14 *Even with treatment a person who has had problems with gambling will always have problems with gambling.*
  - 15 *Most people would not hire a problem gambler to take care of their children.*
  - 16 *Most people would be suspicious of a person if they knew they were a problem gambler.*
  - 17 *Most people believe that gamblers are not responsible for their gambling problems.*
  - 18 *Most people think that problem gamblers tend to be irresponsible.*
- 
- 1 Strongly disagree
  - 2 Somewhat disagree
  - 3 Somewhat agree
  - 4 Strongly agree

### Section 3: Personal Gambling

=====

Question Name: Q3b

=====

This section of the survey will ask about your own gambling experiences.

Important: When you think about gambling DO NOT include lottery tickets, instant scratch tickets or raffles, but DO include all other types of gambling such as poker machines, card games, racing, sports betting, day trading, bingo and casino games.

#### Q3: Have you gambled at all within the last 12 months?

- 1 Yes
- 2 No

=====

Question Name: Q4b

=====

We are now interested in your thoughts about your own gambling. For each of the following statements, please consider how you think people who gamble are generally perceived by others.

#### Q4: Please indicate the degree to which you agree or disagree with each of the statements below.

- 1 *I would lie to people in my life about my gambling if I was sure that they would never find out.*
- 2 *I feel that I can recover completely with long term treatment for my gambling.*
- 3 *I sometimes have the thought that I've screwed up my life by gambling.*
- 4 *I have stopped socializing with some people because of their reactions to my gambling.*
- 5 *I feel the need to hide my gambling from my friends.*
- 6 *Most people would always suspect that I had returned to gambling, even if I didn't gamble anymore.*
- 7 *People have insulted me because of my gambling.*
- 8 *Others view me as morally weak because I am a gambler.*
- 9 *People can tell that I am a gambler by the way I look.*
- 10 *I am open about my gambling history with most people.*
- 11 *Others think I am not worth the investment of time and resources because I am a gambler.*
- 12 *I sometimes have the thought that I deserve the bad things that have happened to me in life because I gamble.*
- 13 *I feel I can get my gambling under-control with treatment.*
- 14 *I feel the stress in my life is what causes me to gamble.*
- 15 *I have the thought that I should be ashamed of myself for my gambling.*
- 16 *I avoid situations where another person might have to depend on me.*

- 17 *I don't think I can be trusted because I gamble.*  
18 *Once they know I'm a gambler, most people will take my opinion less seriously.*

- 1 Strongly disagree  
2 Somewhat disagree  
3 Somewhat agree  
4 Strongly agree

=====

Question Name: Q5

=====

The next 3 questions ask you to reflect on your gambling over the last 12 months

Important: When you think about gambling DO NOT include lottery tickets, instant scratch tickets or raffles, but DO include all other types of gambling such as poker machines, card games, racing, sports betting, day trading, bingo and casino games.

**Q5a: How often did you gamble in the past 12 months?**

- 1 Monthly or less  
2 2 to 4 times a month  
3 2 to 3 times a week  
4 4 to 5 times a week  
5 6 or more times a week

=====

Question Name: Q5b

=====

**Q5b: How much time did you spend gambling on a typical day in which you gambled in the past 12 months?**

- 1 Less than 30 minutes  
2 More than 30 min but less than 1 hour  
3 More than 1 hours but less than 2 hours  
4 More than 2 hours but less than 3 hours  
5 More than 3 hours

=====

Question Name: Q5c

=====

**Q5c: How often did you spend more than 2 hours gambling (on a single occasion) in the past 12 months?**

- 1 Never  
2 Less than monthly  
3 Monthly  
4 Weekly  
5 Daily or almost daily

=====

Question Name: Q5d

=====

The next 9 questions ask you to reflect on your gambling over the last 12 months.

**Q5d: In the last 12 months (select best answer).**

- 1 *Have you bet more than you could really afford to lose?*
  - 2 *Still thinking about the last 12 month, have you needed to gamble with larger amounts of money to get the same feeling of excitement?*
  - 3 *When you gambled, did you go back another day to try to win back the money you lost?*
  - 4 *Have you borrowed money or sold anything to get money to gamble?*
  - 5 *Have you felt that you might have a problem with gambling?*
  - 6 *Has gambling caused you any health problems, including stress or anxiety?*
  - 7 *Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?*
  - 8 *Has your gambling caused any financial problems for you or your household?*
  - 9 *Have you felt guilty about the way you gamble or what happens when you gamble?*
- 1 Never
  - 2 Sometimes
  - 3 Most of the time
  - 4 Almost always

**Section 4: Attitudes toward gambling**

=====

Question Name: Q6

=====

The following is a series of statements related to gambling. Please indicate your agreement with the statement ranging from strongly agree to strongly disagree. There is no right or wrong answer; this is simply your own personal attitudes and opinions.

**Q6: Please indicate the degree to which you agree or disagree with each of the statements below.**

- 1 *There are too many opportunities for gambling nowadays.*
- 2 *People should have the right to gamble whenever they want.*
- 3 *Gambling should be discouraged.*
- 4 *Most people who gamble do so sensibly.*
- 5 *Gambling is a fool's game.*
- 6 *Gambling is dangerous for family life.*
- 7 *Gambling is an important part of cultural life.*
- 8 *Gambling is a harmless form of entertainment.*
- 9 *Gambling is a waste of time.*
- 10 *On balance gambling is good for society.*
- 11 *Gambling livens up life.*
- 12 *It would be better if gambling was banned altogether.*
- 13 *Gambling is like a drug.*
- 14 *Gambling is good for communities.*

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

## Section 5: Demographics

=====

Question Name: Q7

=====

We will end the survey with a few general questions about you.

### Q7: What is your gender?

- 1 Male
- 2 Female

=====

Question Name: Q8

=====

### Q8: What is your current age?

Please enter your age here. You must be over the age of 18 to participate in this project.

=====

Question Name: Q9

=====

### Q9: What is your present marital status?

- 1 Single (never married)
- 2 Widowed
- 3 Divorced/Separated
- 4 Married
- 5 De facto
- 6 Other [Respondent Specify]

=====

Question Name: Q10

=====

### Q10: In which country were you born?

- 1 Australia
- 2 Other, please specify: [Respondent Specify]

=====

Question Name: Q11

=====

### Q11: Which cultural background do you most identify with?

- 1 American
- 2 Australian
- 3 Chinese
- 4 Dutch
- 5 English
- 6 Filipino
- 7 German
- 8 Greek
- 9 Indian
- 10 Irish
- 11 Italian
- 12 Japanese
- 13 Malaysian
- 14 New Zealand



- 15 Scottish
- 16 South African
- 17 Swedish
- 18 Swiss
- 19 Vietnamese
- 20 Other (please specify) [Respondent Specify]

=====

Question Name: Q12

=====

**Q12: Do you identify yourself as Aboriginal and/or Torres Strait Islander?**

- 1 Yes
- 2 No

=====

Question Name: Q13

=====

**Q13: What is the highest level of education you have completed?**

- 1 No schooling
- 2 Year 8/equivalent or below
- 3 Year 9/equivalent
- 4 Year 10/equivalent
- 5 Year 11/equivalent
- 6 Year 12/equivalent
- 7 Technical studies, Trade Certificate, etc
- 8 Tertiary studies, Diploma, Advanced Diploma
- 9 Tertiary studies, Bachelor degree
- 10 Tertiary studies, Graduate Diploma, Diploma
- 11 Tertiary studies, Postgraduate including Masters, PhD

=====

Question Name: Q14

=====

**Q14: What is your current MAIN employment status?**

- 1 Employed full-time
- 2 Employed part-time
- 3 Employed casual
- 4 Self-employed (full-time equivalent)
- 5 Self-employed (part-time equivalent)
- 6 Self-employed (casual equivalent)
- 7 Unemployed
- 8 Home duties
- 9 Student
- 10 Retired
- 11 Pensioner

=====

Question Name: Q15a

=====

**Q15a: What is your approximate personal income level? Not including the income of a spouse, partner or family member (include income from all sources before taxes and any spending).**

- 1 Negative/Nil income
- 2 \$1-\$199 weekly (\$1-\$10,399 per year)
- 3 \$200-\$299 weekly (\$10,400-\$15,599 per year)
- 4 \$300-\$399 weekly (\$15,600-\$20,799 per year)
- 5 \$400-\$599 weekly (\$20,800-\$31,199 per year)
- 6 \$600-\$799 weekly (\$31,200-\$41,599 per year)
- 7 \$800-\$999 weekly (\$41,600-\$51,999 per year)
- 8 \$1,000-\$1,249 weekly (\$52,000-\$64,999 per year)
- 9 \$1,250-\$1,499 weekly (\$65,000-\$77,999 per year)
- 10 \$1,500-\$1,999 weekly (\$78,000-\$103,999 per year)
- 11 \$2,000-\$2,499 weekly (\$104,000-\$129,999 per year)
- 12 \$2,500-\$2,999 weekly (\$130,000-\$155,999 per year)
- 13 \$3,000-\$3,499 weekly (\$156,000-\$181,999 per year)
- 14 \$3,500-\$3,999 weekly (\$182,000-\$207,999 per year)
- 15 \$4,000-\$4,999 weekly (\$208,000-\$259,999 per year)
- 16 \$5,000 or more weekly (\$260,000 or more per year)

=====

Question Name: Q15b

=====

**Q15b: What is the total income level of ALL people living in your household? Including any other household member (include income from all sources before taxes and any spending).**

- 1 Negative/Nil income
- 2 \$1-\$199 weekly (\$1-\$10,399 per year)
- 3 \$200-\$299 weekly (\$10,400-\$15,599 per year)
- 4 \$300-\$399 weekly (\$15,600-\$20,799 per year)
- 5 \$400-\$599 weekly (\$20,800-\$31,199 per year)
- 6 \$600-\$799 weekly (\$31,200-\$41,599 per year)
- 7 \$800-\$999 weekly (\$41,600-\$51,999 per year)
- 8 \$1,000-\$1,249 weekly (\$52,000-\$64,999 per year)
- 9 \$1,250-\$1,499 weekly (\$65,000-\$77,999 per year)
- 10 \$1,500-\$1,999 weekly (\$78,000-\$103,999 per year)
- 11 \$2,000-\$2,499 weekly (\$104,000-\$129,999 per year)
- 12 \$2,500-\$2,999 weekly (\$130,000-\$155,999 per year)
- 13 \$3,000-\$3,499 weekly (\$156,000-\$181,999 per year)
- 14 \$3,500-\$3,999 weekly (\$182,000-\$207,999 per year)
- 15 \$4,000-\$4,999 weekly (\$208,000-\$259,999 per year)
- 16 \$5,000 or more weekly (\$260,000 or more per year)

=====

Question Name: Q16

=====

**Q16: Do you currently live in an urban area (major city), a regional town/city or a rural area?**

- 1 Urban
- 2 Regional town or city
- 3 Rural

=====

Question Name: Q17

=====

**Q17: What is your current residential postcode?**

Enter 9999 if you are unsure

=====

Question Name: QCOM

=====

**That brings us to the end of the survey. If you would like to add any comments please do so below.**

Thank you very much for taking the time to answer these questions. We look forward to contacting for the next AHSS project!

Please click on the arrow below to submit your survey.

If you experience any discomfort due to completing this questionnaire, please contact one of the following services:

Life Line phone counselling: 13 11 14

Beyond Blue depression and anxiety initiative: 1300 22 46 36

Gamblers Anonymous Helpline: (02) 9726 6625



