

ANALYSIS OF ADOLESCENT PROBLEM GAMBLING AND INTERVENTION MODES

¹Mr Jirushlan Dorasamy

Abstract

Frequent gambling activities may include lotteries, sports betting, slot machines, blackjack, instant win games, online gambling and scratch cards. As a behavioural disorder, problem or pathological gambling, is characterized by preoccupation with the disorder, diminished control over gambling and recurrent maladaptive behaviour (Coyne et al., 2015). Rather than gambling being a leisurely pursuit, problem gamblers pursue it to alleviate their negative emotions and moods.

Keywords: gambling, negative emotions and moods

I. Introduction

Problem gambling can be associated with an interactive combination of risk factors. Often there is shared comorbidity with other mental illnesses, poor medical conditions, substance abuse and antisocial behaviour. Gambling can become pathologic and harmful, when it is associated with significant negative consequences like unemployment, financial losses, criminal activity, psychological functioning and family conflict (Messerlian, Derevensky, & Gupta, 2005). Additionally, Burge et al. (2006) argued that gambling becomes problematic when it negatively affects gamblers, and the overall well-being of social networks and communities. The American Psychiatric Association (2013) describes it as a composition of legal, social and self-regulatory problems arising from gambling.

There is increasing research evidence of problem gambling among adults and adolescents (Scholes-Balog, Hemphill, Toumbourou, & Dowling, 2016; McCormack & Griffiths, 2012). While gambling is prevalent across all age groups, adolescents are a more vulnerable group in view of opportunities for gambling being easily accessible from an early age, failure to recognise the problem, underestimation of gambling risks, and the inability to seek treatment. Research evidence shows that adolescents experience problem gambling at almost 2-3 times the rate compared to adults problem gambling, it is significantly higher among adolescents than in other age groups, and that problem gambling during adulthood was more likely developed at a younger age, (Delfabbro & Thrupp, 2003; Jacobs, 2000; Gupta & Derevensky, 2000). While not all types of gambling may be accessible

¹ Masters in Counselling student, Monash University, Melbourne, Australia

to adolescents, several opportunities exist like online and telephonic gambling; being able to buy tickets; and gambling by adults on their behalf.

The review by Shaffer and Hall (2001) reported that 8.3% to 20.8% of adolescents met the subclinical criteria for at risk gambling, while 3.2% to 6.4% of adolescents fulfilled the clinical criteria for problem gambling. Further, the meta analysis by Molinaro et al. (2014) found that 7.5% of students in high school were involved in problem gambling, with associated health and psychosocial problems. Similarly, the study by Chiesi, Donati, Galli, and Prime (2013) found that 7% of high school adolescents were problem gamblers, while 17% of adolescents in high school were at risk problem gamblers. Herrero-Fernández, Estévez, Sarabia, and Merino (2017) found that the rate of alcohol consumption, regular use of drugs and cigarette smoking was much lower than gambling among adolescents, with individuals engaging in gambling from 11,5 years. Additionally, adolescent problem gamblers may experience irritability, absence from school, extreme moodiness and weak personal relationships (Columb, Griffiths, & O’Gara, 2018).

II. Aetiology of adolescent problem gambling

Considering that problem gambling is a multidimensional phenomenon, it must be understood within the context of factors impacting the acquisition, progression and continuation of problems associated with gambling. Relatedly, studies by Michalczuk, Bowden-Jones, Verdejo-Garcia, and Clark (2011) and Jacobs (2000) reported that the behavioural, cognitive and affective aspects of an individual’s personality was linked to problem gambling among adolescents.

The study by Michalczuk, Bowden-Jones, Verdejo-Garcia, and Clark (2011) reported that gamblers who focus on the present during gambling are more likely to experience misunderstandings relating to probabilities during gambling and cognitive distortions like beliefs in superstitions. This is supported by Canele et al. (2016) who claimed that adolescents have a diminished potential to engage in deliberate decision making in comparison to adults, thereby making them more vulnerable and susceptible to risky decision making. These research findings suggest that distorted gambling cognitions impact problem gambling among adolescents. For example, anxiety, impulsivity, aggressiveness and higher levels of internalizing symptoms like depression were significantly associated with early gambling behaviour (Lee, Stuart, Ialongo, & Martins, 2014).

Accordingly, the study by Blanco et al. (2015) reported that a family history of stressful events which impacted attachment, significantly predicted problem gambling. Relatedly, with reference to family attachment, the study by Scholes-Balog et al. (2016) reported that antisocial behaviour; internalised symptoms; and drug and alcohol use increased the risk of desistance from problem gambling, while increased family attachment significantly diminished the risk of persisting problem gambling. While some research findings reported poor quality family attachment and other significant variables influencing risky adolescent behaviours, research by Calado, Alexandre, and Griffiths (2017a) posited that while family attachment did not significantly correlate with problem gambling, lower levels of family attachment significantly correlated with avoidant coping strategies. Thus, it can be argued that if adolescents were securely attached to significant others, then poor self-image, stress and inappropriate coping styles can be more effectively managed (Calado et al., 2017a). Similarly, Calado, Alexandre, and Griffiths (2017b) found that feelings of distress and anger caused by frustrating attachment needs

affected emotion focused coping. Such attachment needs which are frustrating influenced problem gambling due to the inability to regulate emotions (Scholes-Balog et al., 2016).

Another influencing factor associated with adolescent problem gambling, according to Delfabbro and Thrupp (2003), is having parents who share confident and optimistic perceptions about gambling. For example, parents who socially share optimistic opportunities of winning and the economics benefits accruing from gambling may shape the gambling beliefs of adolescents. For example, simply observing their parents buy lottery tickets and watching the excitement during draws, can significantly influence and condone adolescent perceptions that gambling is acceptable and transmit an interest in gambling from a young age into adulthood. Similarly, the study by Herrero-Fernández et al. (2017) reported that that familial and social influences impacted gambling, as 65.3% gambled with family members including their parent, while 73% of adolescents reported gambling with friends. In this instance, Gupta and Derevensky (2000) argued that such observations during adolescence may be incorrectly perceived as reflective of independence and maturity in adulthood, thereby promoting gambling to identify with adult life. However, if parents emphasize budgeting, saving and responsible money management, then risky behaviour like gambling can be considered unappealing. Therefore, it can be argued that in the absence of positive social learning from parents, gambling can be regarded as desirable, with the perception that it may generate large benefits in the short and long term.

Additionally, poor social support from friends and family negatively affects physical and mental health outcomes in adolescents. For example, risk factors for problem gambling can include conformity with deviant behaviour among peers and negative parenting practices like poor monitoring (Lussier, Derevensky, Gupta, & Vitaro, 2014). Relatedly, Scholes-Balog et al. (2016) claimed that affiliation with peers who are antisocial is a predictor of problem gambling, as interaction with such peers can reinforce problem behaviours. In this instance, Lussier, Derevensky, Gupta, and Vitaro (2014) argued that peer connectedness provided access to gambling in an unsupervised environment, with a risk of problem gambling. Further, Dussault, Brendgen, Vitaro, Wanner, and Tremblay (2011) found that adolescents with internalizing problems appreciated the beneficial and enduring effects of parental involvement in managing problem gambling.

Apart from other stressors, poor coping styles relating to tasks, emotion regulation and problem solving are potential risk factors for problem adolescent gambling. The study by Gupta, Derevensky, and Marget (2004) found that adolescents with gambling problems showed more avoidance focused and emotion based coping styles. Similarly, Cheung (2016) used the General Strain Theory (GST) to explain that the loss of positive stimuli, inability to achieve future goals and being confronted with negative stimuli can influence negative responses like anger, anxiety and depression. Often, an escapist approach to strain is internalised. As reported in the study by Lostutter, Larimer, Neighbors, and Kaljee (2011), gambling can be a deviant adaptation to strain, since evidence pointed to adolescent problem gamblers managing strain through the use of more avoidance focused coping styles. Additionally, low self-control associated with risk taking, impulsivity, dislike of cognitive activities and self-centred orientation can prevent adolescents from resisting gambling (Bergen, Newby-Clark, & Brown, 2012). Similarly, Cheung's (2016) study reported that adolescents with impaired self-control generally react with negative emotions, are averse to strain, and tend to be more inclined to adopt risky coping solutions like gambling.

Research also points to an association between pro-gambling attitudes and problem gambling (Tang & Wu, 2012; Calado et al., 2017b). This assertion is supported in the study findings of Calado et al. (2017b), which found that gambling became more frequent when adolescents had pro-gambling attitudes associated with positive gambling outcomes like an enhanced quality of life due to winnings. Relatedly, Cosenza and Nigro (2015) suggested that false and erroneous beliefs in predicting and controlling gambling outcomes can contribute to the continuation of problem gambling behaviour. As much research points to the close association between money and gambling, problem gambling is often linked to financial challenges (Petry, 2001). More so, problem gamblers tend to also be caught in the vicious cycle of trying to recoup losses from gambling. While gambling can be a challenge to resist among problem gamblers in view of the strong value attached to winning money, they paradoxically also waste their money by chasing their losses.

Additionally, the presence of comorbidity conditions among adolescents can also aggravate gambling severity. In this instance, several research studies reported higher levels of problem gambling in cases of commonly co-occurring disorders like depression, anxiety, substance abuse and personality disorders. (Grabero et al., 2014). Accordingly, the study by Yakovenko and Hodgins (2018) reported that problem gambling and rates of unemployment were higher for those with comorbid attention deficit hyperactivity disorders, while problem gamblers had higher levels of functional and mental problems compared to problem gamblers without comorbidities. Also, since substance abuse and problem gambling share much physiological commonality, substance abuse as a behavioural disorder predicted increased gambling problems over a longer period of time (Jacobs, 2000). Similarly, the study by Scholes-Balog et al. (2016) reported that problem gambling can result in persistence, if the individual takes drugs and consumes alcohol while gambling, resulting in impaired decision making, impulsivity and excessive spending.

Shared beliefs and attitudes can make adolescents feel socially reinforced and accepted. Being part of a cohort of gamblers can give adolescents an opportunity to share their beliefs, attitudes, vulnerabilities, and life challenges. In such instances, Delfabbro and Thrupp (2003) argued that gambling was a negative form of reinforcement, as it provided an opportunity for adolescents to escape from stress, anxiety and unhappiness. Additionally, competitiveness among gamblers can become an additional driver, with problem adolescent gamblers achieving recognition through the outperformance of their peers.

III. Impact of developmental stage on adolescent problem gambling

As adolescence is a crucial developmental period, there is increased addiction vulnerability. Research evidence on neuropsychological and behavioural changes during the adolescent developmental stage have consistently reported deficit decision making abilities among this age group (Cassotti, Houde, & Moutier, 2011). Similarly, studies which used the Iowa Gambling Task assessment to analyse decision making abilities, found that adolescents had poorer decision making abilities than young adults. This was partly attributable to their greater sensitivity toward rewards and inability to inhibit impulses (Smith, Xiao, & Bechara, 2012). According to Smith et al. (2012), such decision making deficits are associated with immature development of the prefrontal cortex and subcortical regions. Relatedly, the study by Ciccarelli, Griffiths, Nigro, and Cosenza (2016) which examined decision making abilities among adolescent problem gamblers, found that adolescent problem gamblers had

cognitive distortions like biased interpretations, irrational beliefs and insensitivity to consequences. As such, impaired decision making promotes poor choices such as distorted predictions of winning associated with problem gambling and irrational confidence to recover losses.

Hope, values, purpose in life and control which are critical elements of subjective wellbeing, shape how adolescents perceive their future (Bradshaw, 2015). However, Wong and Chui (2017) argued that disruptions in the well-being of individuals during adolescence impacts psychosocial well-being. For instance, the emergence of an unfavourable economic environment may cause the adolescent to experience a diminished sense of subjective wellbeing. When the psychological well-being is impacted, there is the risk of pursuing opportunities like gambling to improve current and future economic stability. Once gambling becomes untreated and disorderly, the confidence, trust and belief in the future can weaken. This can be accompanied by greater hopelessness, uncertainty and loss of purpose in life as adolescents and adults in the future.

According to Coyne et al. (2015), an individual's self-regulation, impulsivity, stress, emotions and cognition is influenced by neurophysiologic activity. Research findings on neurophysiology have reported that risk behaviour can emerge if there are challenges with these foundational elements. (El-Sheikh & Erath, 2011). In support of the claim by Coyne et al. (2015) that the autonomic nervous system promotes social engagement and protects the body from threats by fighting or fleeing, it can be argued that a poorly functioning nervous system can predict poor psychosocial behaviours like low emotion regulation, stress, fear and addiction. Relatedly, the physiological development of adolescents can over a period of time play an important contributing role in problem gambling. For example, gambling may provide an adolescent with cognitive stimulation, in the absence of physiological stimulation which is novel and sensational. Further, gambling, can be viewed as a coping tool when threatened and stressed by social tasks (Jacobs, 2000).

There is growing evidence that impulsivity is one of the underpinning drivers of problem gambling, with high rates of impulsivity during adolescence significantly predicting the disorder (Cosenza & Nigro, 2015). As a complex and multidimensional construct, impulsivity shares commonality with behavioural traits like preference for immediate small rewards and insensitivity to consequences (Blaszczynski & Nower, 2002). In support, Cosenza and Nigro (2015) argued that impulsive individuals are more current and short term oriented, because cognitive processes influence the processing of time related information. Relatedly, another risk factor for problem gambling is the general myopic view of the future by adolescents. In comparison, studies have shown that as individuals grow older they can engage in constructive planning through the use of mental time travel which diminishes and delays impulsive immediate rewarding (Teuscher & Mitchell 2011). For example, the study by Tang and Wu ((2012) reported that without a sound and stable mind-set that is future oriented, adolescents may be prevented from making decisions which can delay financial rewards. Thus, they may increasingly engage in activities that generate instantaneous gratification, which can bring harm to them and significant others.

As noted by Donato et al. (2018), problem gambling is also impacted by contaminated mindware and the mindware gap. Contaminated mindware is influenced by subjective beliefs like superstitious thinking, while the mindware gap is based on the misunderstanding of probabilities based on past experiences and learning. The study by Donati et al. (2016) found that cognitive distortions associated with the contaminated mindware and the mindware gap significantly correlated with problem gambling. Being in the developmental stage, the cognitive functioning of adolescents can be easily distorted. Cognitive distortions like incorrect perceptions of personal

ability to control gambling outcomes can aggravate adolescent problem gambling (Edgren et al., 2016). Similarly, in relation to dual process theories focusing on cognitive functioning, adolescents are more apt toward erroneous cognition regarding gambling beliefs, attitudes and knowledge due to their susceptibility and vulnerability in relation to gambling biases and fallacies at an early age (Donati et al., 2016). Therefore, it can be contended that adolescent problem gambling can fester in the absence of learning about distorted cognitions associated with gambling.

The personality traits of adolescents are still evolving as they mature. This sensitive developmental stage during adolescence influences their behaviours, cognitions and emotions. The meta analysis by Dowling et al. (2017) showed higher rates of personality disorders among adolescent problem gamblers. Their findings argued that personality disorders like obsessive compulsive, avoidant, sensation seeking and aggressive traits positively correlated with adolescent problem gambling (Dowling et al., 2017). For example, low constraint such as self-control and high negative emotionality such as aggression among adolescents predicted problem gambling (Ariyabuddhipongs, 2013). Therefore, adolescents with maladjusted emotional and behavioural control are more likely to experience problem gambling as adults. In addition, Kuss, van Rooij, Shorter, Griffiths, and van de Mheen (2017) reported that low agreeableness which is congruent with aggression, low emotional stability which is congruent with neuroticism, and openness to experience which is congruent with novelty seeking and resourcefulness predicted addiction. Therefore, the mutually reinforcing relationship between personality traits and problem gambling suggests that the adolescents with low scores in personality traits that serve as predictors of problem gambling, can persist into problem gambling during adulthood.

IV. Consequences in the absence of treatment

Engaging in activities that generate arousal and excitement can be positively reinforcing for adolescent development. Winning can be viewed as a display of courage and risk taking, something to be admired. However, it can surface as an unhealthy trajectory to development, when social reinforcement endorses negative beliefs, like gambling is more profitable than employment or education. Therefore, dimensions like peer and family connectedness; psychosocial adjustment regarding performance at school; self-harm and substance abuse may emerge as problem areas if treatment is not effected timeously (Shaffer & Hall, 2001). Thus, in the absence of treatment, adolescent problem gamblers may continue close emotional and personal bonds with antisocial peers, thereby mitigating the development of proper social skills to function in society as adults. Relatedly, when adolescents pursue addictive behaviour throughout this development stage, peer and family connectedness they fail to nurture adaptive coping styles. This maladaptation can continue into adulthood. For example, the inability to adopt alternative coping strategies as adults may be reflected in suicide attempts (Granero et al., 2014).

Additionally, as propagated by the Theory of Reasoned Action, adolescent attitudes like gambling can supplement their income, it is not a waste of money and that they can make a livelihood from gambling can be adopted as acceptable attitudes into adulthood, if there are no interventions to correct such misconceived attitudes (Delfabbro & Thrupp, 2003). This can be exacerbated by family and friends who are pro gamblers, thereby reinforcing the influence of social norms in problem gambling. Considering the findings by Delfabbro and Thrupp (2003) that 18.5% of adolescents were in favour of increasing their current gambling activities, such

attitudes can continue into adulthood. The ramification can possibly be a continuation of problem behaviour like using gambling to escape depression, stress and anxiety.

Auger, Cantinotti and O'Loughlin (2010) reported that adults with problem gambling began gambling at an early age. Further, the study by Granero et al. (2014) reported that gambling from an early age can predict depression, substance abuse and other antisocial behaviours in adulthood if untreated. Additionally, extensive research alludes to adolescent problematic gamblers reporting higher delinquent behaviour and poor school performance (Giralt et al., 2018). These can be catalyzers for criminal activities, school dropout and higher rates of social strain. It can be posited that education on the harmful effects and fallacies of gambling can possibly help adolescents to reconsider their false gambling beliefs and the severe consequences. Without intervention, it can be suggested that their education, financial stability, employment and social adjustment can be affected in adulthood.

Several studies have reported that the family is a critical element in helping individuals cope with challenges (Estévez, Jáuregui, Sánchez-Marcos, López-González, & Griffith, 2017). Thus, a good parent-child relationship can be a buffer against problem gambling. Without a strong family attachment, the adolescent may continue with the risky behaviour into adulthood, as unsafe parental attachments do not provide emotional and protective support when adolescents face distress. In the absence of learning from family as attachment figures, long term emotional regulation deficits during adolescence can perpetuate into other problem behaviors, poor emotional abilities, unequal relationships and new mental illnesses during adulthood (Lostutter et al., 2011). Similarly, if an adolescent experienced long periods of feeling neglected and unloved, then the resultant negative self-concept can affect the development of positive relationships during adulthood. In such instances, addictions like gambling can compensate for the need to establish new relationships.

V. Multi modal treatment interventions

Generally, multi modal treatment interventions using a combination of cognitive, motivational and behavioural interventions are considered efficacious. The various treatment interventions used must be tailored to the adolescents' current state of well-being and future stages of change, while securing commitment and support from significant stakeholders like the individual, peers, family, other health professionals and the school. Ultimately, as posited by Toneatto (2016), behavioural changes are facilitated by the motivational state of the individual.

Multiple assessment and screening instruments may have to be considered, considering that multiple variables impact problem gambling. For example, the Barratt Impulsiveness Scale, Brief Biosocial Gambling Screen, South Oaks Gambling Screen and DSM-IV-Multiple Response-Juvenile (DSM-IV-MR-J) assessment and screening tools maybe used to measure various variables impacting problem gambling. Such variables may include loss of control, tolerance, progression, preoccupation, withdrawal, desistance, resistance, persistence and new incidences associated with gambling (Scholes-Balog et al., 2016). Further, the Adolescent Attachment Questionnaire (AAQ) can be used to assess distress, anger, security and availability in relation to adult attachment (Calado, Alexander, & Griffiths, 2017). Additional assessment tools include the Monetary Choice and Gambling-Related Cognitions questionnaires, which identify gambling distortions like illusion of predictive control,

impulsivity, control, interpretative bias and delayed reward discounting (Cosenza & Nigro, 2015), while the Brief COPE instrument assesses coping styles (Blanco et al. 2015). Based on the assessment results, various interventions can be used, which can be inclusive of individual and group interventions at school, in the home and in community settings.

Apart from face to face therapy, the adolescent can be introduced to motivational interviewing using web based interventions. Such interventions help to identify discrepancies between attitudes and behaviour, while strengthening motivation and self-efficacy needed for acceptable behaviour (Canele et al., 2016). The study by Diskin and Hodgins found that problem gamblers reported less losses when motivational interviewing included feedback about gambling norms, while combining motivational interviewing with the completion of cognitive behavioural therapy workbooks resulted in diminished expenditure on gambling compared to gamblers who only had workbooks. Such multimode interventions have shown evidence of benefits accruing to adolescent problem gamblers

Outside formal treatment, the adolescent can enjoy the confidentiality and non- judgemental approach offered by the internet. For example, the “Stop the Chance” game generates enhanced quantity and quality thinking about finance, which can be a motivator for the individual to engage in behaviour change (Ladouceur & Sevigny, 2003). Relatedly, Doumas, Esp, Turrisi, Hausheer and Cuffee (2014) cited increased interest in reading online feedback and stronger emotional response to personalised feedback as potential motivators for changing gambling beliefs, attitudes and behaviour. Further, the study by Canele et al. (2016) reported that online screening and testing; personalised feedback and interactive activities provided the motivation for adolescents to change their social influences, expectations and attitudes regarding self-efficacy. By focusing on abilities, attitudes and knowledge in the personal feedback, the adolescent is given information on the negative impact of problem gambling; online training and activities; and tips to reduce risky behaviour. Additionally, similar studies by Mohammadi, Abrizah, Nazari, and Attaran (2015) and Ladouceur and Sevigny (2003) reported behavioural changes resulting from enhanced information linked to unrealistic gambling beliefs and cognitive distortions related to gambling.

Also, digital interventions provide wide possibilities for an integrated treatment approach for problem gambling. It can be useful for building self-reliance and self-management skills for the adolescent, outside face to face interventions. One such intervention is serious games, using non-gaming contexts to increase engagement, motivation and behaviour change (Elfeddali, de Vries, Bolman, Pronk, & Wiers, 2016). For example, one such serious game is the PlayMancer game, which focuses on improving problem solving skills, emotion regulation and diminishing risky decision making (Kerst & Waters, 2014). Such interventions can be included in the school curriculum for both non-problem and problem gamblers, thereby ensuring prosocial peer connectedness and confidentiality.

Relatedly, Gladwin, Figner, Crone and Wiers (2011) claimed that addictive and problem behaviours are associated with working memory deficits linked to cognitive biases, impulsivity and weak delay discounting. In such instances, the adolescent can be subjected to working memory training, which includes developing the ability to process, hold and manipulate information (Field et al., 2007). For example, mentally storing and recalling information can be practiced using recall tasks, thereby helping to control thoughts, emotions, regulating

behaviour and decision making. This can be reinforced by regular diarising to monitor progress towards recovery and ensuring early detections of possible risks of relapse.

Since the lack of inhibitory control predicts problematic addictive behaviour, training in inhibitory control tasks can help to control impulsivity. Thus, Boffo, Willemen, Pronk, Wiers, and Dom (2017) suggested that tasks like the stop signal task exercises and go/no-go task helped in motor and cognitive inhibition control. Inhibition control can diminish cravings, thereby making the gambling less appealing and increase the motivation for behaviour change. Such tasks can be individually administered individually or in group sessions with other adolescents affected by various addiction disorders.

Capacitating parents in helping adolescents to change their behaviour is another consideration. One example of psychosocial intervention investigated in the study by Kazdin (2018) was parent management training, which focused on addictive behaviours. The emphasis was on changing the adolescent's responses in various interpersonal contexts, using learning from prompting and modelling. Parent management capacity building targets areas like shaping behaviour, positive reinforcement and consequences of disorderly behaviour. Kazdin (2018) also used a concurrent approach, which focused on training adolescents in cognitive problem-solving skills. For example, if the adolescent uses aggression as an alternate to interpersonal problems, role play can be used to teach the adolescent strategies in managing interpersonal relationships. The study by Kazdin (2018) found that both interventions, either in individual or group settings increased family harmony and prosocial behaviour.

Since poor social support has been commonly identified as a risk factor, social support initiatives can help to minimise psychological strain. Strong social support is fundamentally important for strengthening social, personal and family relationships, while reducing isolation and loneliness (Wu et al., 2016). Initiatives including parents, students and teachers should not only target risk gamblers, but also problem gamblers. Further, talks at school by gamblers in recovery, can provide first hand sharing of information and primary evidence of experiences. Additionally, encouraging engagement in prosocial behaviour like joining school forums, civic organizations and youth programmes can be potential desistors, as argued by McCormack and Griffiths (2012) that adolescents with prosocial behaviour are more likely to endorse societal values. This can be further expanded through collaboration between organisations and schools in organizing campaigns to help in awareness creation and treatment seeking.

Finally, adolescent problem gamblers can be exposed to websites, parent meetings, helplines, games and teaching modules at school. For example, all stakeholders can be subjected to a workshop like the Stacked Deck programme, comprising of interactive lessons focusing on false probability beliefs, the illusion of control and fallacies regarding gambling profitability. Such interactive lessons teach adolescent problem gamblers skills in rational decision making (Canele et al., 2016).

VI. Conclusion

Incorrect beliefs and thinking; personal attitudes; and normative perceptions underpinning problem gambling is often an outcome of how a problem gambler thinks cognitively (Burge, Pietrzak & Petry, 2006). Psychotherapy and pharmacological interventions can be considered if there are comorbid issues impacting problem gambling. Therefore, concurrent interventions with other health specialists will be needed, depending on the

multiple domains impacting the disorder. As argued by Yakovenko and Hodgins (2018), in the absence of treating comorbid issues, ping pong treatment outcomes and functioning may emerge, with the adolescent benefitting very little from an unintegrated treatment approach.

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