EFFICACY OF BRIEF MOTIVATIONAL INTERVIEWING INTERVENTION FOR TREATING GAMBLING DISORDER AMONG UNIVERSITY STUDENTS IN KENYA: A RANDOMIZED CONTROLLED TRIAL

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Abstract

The study sought to establish the efficacy of Brief Motivational Interviewing Intervention (BMII) for treating gambling disorder among university students in Kenya. The objectives of the study were to determine the efficacy of BMII in decreasing: gambling disorder symptoms; frequency of gambling; and typical amount of money placed per bet. The research design used was a parallel group, two arm, superiority randomized control trial. The study targeted university students who gamble. A total of 228 students participated in the study. The results revealed that BMII was efficacious in decreasing gambling disorder symptoms at $p<.05$ (MD=-1.733, t (100) = -7.087, p<.000); frequency of gambling at $p<.05$, (MD= -.683, t (100) = -6.072, p=.000); and typical amount placed per bet at $p<.05$ (MD=-.455; t (100) = -3.294, p=.001). The intervention is recommended as an evidence-based intervention that can be utilised in gambling disorder treatment.

Key words: Gambling, University students, Kenya, treatment, randomized controlled trial, motivational interviewing, sports betting

1.0 Introduction

Gambling has become a major health concern globally. Kenya has a high prevalence of gambling among its youth with over 70% of university students involved in online sports betting on football matches (Koross, 2016, Macharia, 2018, Geopoll, 2017). The proliferation of gambling among university students puts many of them at risk of gambling disorder. Students suffering from gambling disorder experience compromised psychological, financial and social wellbeing. They also encounter difficulties in their academic activities. Although problems as a result of disordered gambling have always existed, formal treatment of disordered gambling is still at infancy with a dearth of literature on evidence based treatments. Ssewanyana & Bitanihirwe (2018) argue that although Sub-Saharan Africa is facing an unprecedented rise in gambling problems among youth, there are no specific prevention and treatment facilities aimed at providing support to the disordered gamblers. Brief interventions, motivational interviewing, cognitive behavioural therapies and twelve steps programs are some of the treatment approaches that have shown promising results in treatment of gambling disorder (Rash & Petry, 2014; Yau & Potenza, 2015). Although the efficaciousness of the treatment approaches for gambling disorder is not unequivocal, there is general consensus that treatment is preferable to no treatment at all.

Brief interventions (BI) have particularly elicited an interest among scholars in treatment of addictions. They are aimed at identifying those engaging or at risk of harmful behaviour and motivating them to change such behaviour (Angus, et al, 2014; Henry-Edwards et al, 2003). The intervetions are usually shorter than regular therapy sessions and typically a therapist can have a single session or up to five sessions with the client. According to Angus et al.(2014) there is strong evidence on effectiveness of brief interventions in treatment of addictions. Brief interventions have largely been used in the prevention and treatment of alcohol and substance abuse. A systematic review and meta-analysis of efficacy of brief interventions for alcohol abuse among adolescents by Tanner-Smith & Lipsey (2015) found that; overall, those in the treatment group had lowered alcohol consumption and negative consequences after a follow-up of 12 months compared to the control group that did not receive any intervention. Another systematic review of randomized control trials in middle income countries such as Thailand and South Africa by Joseph and Basu (2016) found evidence of BI reducing harmful alcohol use. The use of Brief Interventions has been recommended as one of the beneficial harm reduction strategies for gambling disorder (Gainsbury, Blankers, Wilkinson, Schelleman-Offermans, & Cousijn, 2014).

Research on efficacy of BI in treatment of gambling disorder has largely yielded positive outcomes. For example a study by Swan and Hodgins (2015) in Canada found that brief advice and motivational enhancement therapy were effective in reducing gambling symptoms while Neighbors et al. (2015) found that among college students, personalized normative feedback was effective in reducing amount lost and problems associated with gambling. Petry et al(2016) conducted a systematic review of brief interventions for gambling disorder and found that most of the interventions led to a decrease in gambling symptoms and problems. Many studies on treatment of gambling disorder have however been conducted in the west where the dynamics of gambling behaviour may be different from those of the Kenyan context.

The therapeutic approach used in a BI largely determines its efficaciousness in treatment of gambling disorder. One of the popular evidence based therapies used in brief interventions is Motivational Interviewing (MI). MI is a goal oriented "collaborative conversation style for strengthening a person's own motivation and commitment to change" (Miller & Rollnick, 2013). The premise of MI is that behaviour change can occur if individuals are given objective feedback about their addictive behaviour and motivated to change. Compared to other non motivational interventions, MI has been found to yield robust results in treatment of disordered gambling and unhealthy behaviours (Lundahl et al, 2010). A number of randomized clinical trials (RCTs) have been conducted to establish the efficacy of MI in treatment of gambling disorder and have yielded promising results. Yakovenko et al (2015) conducted a systematic review of RCTs on gambling disorder and found that MI was efficacious in reducing gambling frequency for up to a year and reducing the amount of money spent on gambling after three months of intervention.

One of the key features of MI is its flexibility in the manner in which it can be delivered making it easily adaptable to different contexts and goals of treatment (Arkowitz et al,2015). Various researchers use MI principles in single or multiple sessions, over telephone, online therapies, group therapies or a combination of therapies in different interventions. For example Toneatto (2016) found that single session motivational intervention was as effective in treatment of gambling disorder as other longer term interventions while Hodgins et al (2009) conducted a telephone motivational interview and mailed a self help workbook to participants in the United States of America (USA) and found that it was efficacious in reducing gambling frequency and money lost. Another study by Carlbring et al (2010) in Sweden found that four individual sessions of MI were effective in reducing the gambling symptoms among a population that was also diagnosed with depression and anxiety.

A wide range of brief interventions based on MI principles can be developed by researchers depending on the population, desired outcome, resources available and nature of problems being addressed. Available literature on the efficacy of brief interventions based on MI principles is equivocal because of the varied methodologies, populations and outcome measures used. For example various studies have been conducted among patients in substance abuse treatment centres, and individuals with other mental disorders such as anxiety (Petry et al 2009; Hodgins et al 2009; Lundahl et al 2010). Also, different diagnostic criteria for gambling disorder are used such as South Oaks gambling disorder screen, DSM-V criteria and problem gambling disorder screen (Carlbring, et al., 2010; Diskn & Hodgins, 2009; Grant et al, 2011). These treatments are therefore more or less applicable only to the context in which they were tested and the diagnostic criteria used. The efficacy of the interventions may therefore not be generalised to other contexts such as Kenya which has a unique gambling culture or using a different criteria for diagnosing disordered gambling.

Literature on treatment of gambling disorder in Africa and Kenya is hitherto scarce. The increase in gambling activity over the last five years in Kenya has however led to an interest on how to reduce the harm caused by disordered gambling. The Kenyan government acknowledges that the widespread gambling in the country has led to negative social and psychological effects among the youth and vulnerable members of the

society (Obebo, 2019; Igadwah, 2019). Various attempts have been made by the government to curb the problem through legislation albeit with limited success. Increasing taxes for gambling companies, taxing winnings and blacklisting of some gambling companies are some of the interventions that have been implemented by the government (Omondi, 2019; Muraya, 2019). The government efforts, although laudable, may not be sufficient in mitigating the adverse effects of gambling disorder among the gamblers. For example, according to IPSOS & Geopoll (2019), many young people sought alternative channels of betting after the government banned some betting companies from operating in Kenya. Measures to minimise harm and provide support to the disordered gamblers are also necessary. It is against this backdrop that this study was designed to test the efficacy of Brief Motivational Interviewing Intervention (BMII) that could be used to treat gambling disorder among university students in Kenya.

1.1 Purpose of the Study
The purpose of the study was to test the efficacy of Brief Motivational Interviewing Intervention (BMII) in treatment of gambling disorder among University students in Kenya.

1.2 Objectives of the Study
1. To determine the efficacy of brief motivational interviewing intervention in decreasing gambling disorder symptoms
2. To determine the efficacy of brief motivational interviewing intervention in decreasing frequency of gambling
3. To determine the efficacy of brief motivational interviewing intervention in decreasing typical amount placed per bet

1.3 Hypothesis
The study tested three null hypotheses.
H_1: Brief motivational interviewing intervention does not decrease symptoms of gambling disorder
H_2: Brief motivational interviewing intervention does not decrease gambling frequency
H_3: Brief motivational interviewing intervention does not decrease typical amount placed per bet

2.0 Methodology
The study employed the use of randomized controlled trial (RCT) design. The design was found appropriate as it enabled the researcher determine overall efficacy of the intervention. The trial design was parallel two arm superiority design with 1: 1 ratio. The study therefore comprised two conditions with equal groups whereby one received an intervention while the other did not. This was aimed at statistically determining if the intervention (BMII) was "superior" to no intervention. The research participants were randomized into two groups namely; the treatment group and control group. The treatment group received the intervention (BMII) while the control group did not. Any statistical differences between the groups at after eight weeks were attributed to the intervention which is Brief Motivational Interviewing Intervention (BMII).
The independent variable in this study was Brief Motivational Interviewing Intervention (BMII) which was a novel intervention developed by the researcher.. The dependent variable was gambling disorder whose indicators were gambling disorder symptoms, gambling frequency and typical amount placed per bet. Randomization was used in allocating the participants in the two groups therefore the groups were assumed to be homogeneous. The study was conducted in one of the largest universities in Kenya. Students who were active gamblers were invited to participate in the study. A total of 228 students participated in the study.

2.1 Research Instrument

A questionnaire was used to conduct the pre-test and post-test assessments. It had three sections. The first section collected demographic information which was sex and year of study. The second section contained items adapted from the DSM-V (APA, 2013) criteria for gambling disorder. It measured gambling disorder symptoms with a binary (Yes, No) response option. Scoring of the items was done based on the responses of the participants to each item (NO=0, YES=1). The maximum score was therefore 9 while the minimum score was 0. To determine the level of gambling disorder of the respondents, the cumulative score of a respondent was categorised four namely: Non-disordered gambling (0-4), mild gambling disorder (5-6) moderate gambling disorder (7-8) and severe gambling disorder (9). The third section of the questionnaire covered gambling frequency per week and typical amount placed per bet.

2.2 Data Collection Procedures

After the necessary ethical approvals from Kenyatta University Ethics Review Committee and the respective institutions, data collection followed four distinct steps namely; Recruitment, pre-test assessment, intervention and post test assessment. The specific procedures are described as follows.

2.3 Recruitment

An invitation was sent out electronically via word of mouth, sms and WhatsApp inviting students who gamble to volunteer to participate in the study. The students who showed up at the venue of registration met the researcher who screened them for eligibility to participate in the study. Registration details recorded were name and mobile phone contact. These details were necessarily for identification and follow up purposes.

2.4 Inclusion and exclusion criteria

University students who volunteered to participate in the study were screened for the inclusion and exclusion criteria. Only active gamblers were eligible to participate in the study. Those considered to be active gamblers were: Those who had gambled for over a year and had gambled in the previous 7 days. The researcher considered this to be sufficient criteria so that any participant regardless of other psychosocial challenges had a chance to be involved in the research. A less restrictive inclusion criterion was more pragmatic and necessary to enhance external validity of the results. Those who met the inclusion criterion were involved in the study.

2.5 Randomization

Randomization was conducted using the SPSS random sample function with 50% approximations (treatment group=0, control group=1). At the end of the exercise a total of 113 participants were allocated to the treatment condition while 115 were allocated to the control condition. In total there were four cohorts in each condition (treatment and control) which comprised 25-30 participants. The researcher discussed the details of the trial with the participants and obtained informed consent before proceeding with the trial. The researcher personally administered the intervention in both conditions (treatment and control). The intervention was a novel intervention developed by the researcher and hence needed some level of expertise.

2.6 Pre-test Assessment

The pre-test assessment was aimed at establishing the baseline data on gambling experiences of the respondents before the intervention. This would be statistically compared to post intervention data to determine if there were significant changes as a result of the intervention. This was done soon after

randomization. Participants in the control condition were given the pre-test assessment in groups of 25-30 and informed that they would be contacted after 8 weeks. Participants in the treatment condition, in groups of 25-30, were given the pre-test assessment followed by the intervention (BMII). After the intervention, they were equally informed that they will be contacted after 8 weeks.

2.7 Post-test Assessment
After 8 weeks all the participants were invited via phone calls, sms and WhatsApp for the post test at a venue within the university. The data collected from the participants at pre-test and post–test was matched according to the codes allocated to their respective names.

This study had three outcomes namely: gambling disorder symptoms, gambling frequency per week and typical amount placed per bet.

3.0 Results and discussion
The study comprised 228 university students who met the inclusion criteria for the study. A majority (89%) of the respondents were male while only 11% were female. The respondents were drawn from all years of study a majority of whom were fourth year (36.4%) and third year (32%) students. An analysis of the cumulative scores on the gambling disorder questionnaire revealed that on average the respondents were disordered gamblers (M=5.50, SD=2.331).

The null hypothesis that BMII was not effective in decreasing gambling disorder symptoms was tested using paired samples t-test. The results revealed that BMII was efficacious in decreasing gambling disorder symptoms at $p<.05$ (MD=-1.733, t (100) = -7.087, $p<.05$) as shown in Table 1

Table 1: Paired Samples t-test on Gambling Disorder Symptoms

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	C2 – C1	.223	1.007	.104	.017	.430	2.151	93	.034
Pair 2	T2--T1	-1.733	2.457	.245	-2.218	-1.248	-7.087	100	.000

(C1: Control group pre-test, C2: Control group post-test, T1: Treatment group pre-test, T2: Treatment group post-test).

The results reveal that among the control group there was a positive weak and significant mean difference between pre-test and post-test (MD=.223, t (93) = 2.151, p=.034.). This is an indication that the control group which did not receive any intervention experienced an increase in the symptoms of gambling disorder during the period of study. This finding implies that gambling disorder is a progressive mental health condition that gets worse with time if intervention measures are not taken.

In the treatment group, there was a strong negative significant difference between treatment group at post-test (MD=-1.733, t (100) = -7.087, p=.000). The null hypothesis that BMII is not effective in decreasing gambling disorder symptoms was therefore rejected (i.e., p<.05). BMII was determined to be efficacious in decreasing gambling disorder symptoms. The results support earlier findings by Calrbring et al. (2010) and Hodgins, et al. (2009) who found that brief interventions were as efficacious in decreasing symptom

severity. Considering that the control group experienced an increase in severity of symptoms, the assertion that treatment is better than no treatment is supported by these results. BMII is therefore a suitable harm reduction intervention for university students who may need to reduce or control their gambling. The design and nature of BMII was aimed at empowering the student to reflect about his or her gambling behaviour and take specific steps to control their gambling. This can be attributed to the psycho-education component of the intervention and the therapeutic effect of group dynamics that were at the core of the intervention.

To find out if BMII was effective in decreasing gambling frequency among the respondents, Paired samples t-tests results led to the rejection of the null hypothesis that BMII was not effective in decreasing gambling frequency (p<.05, (MD= -.683, t (100) = -6.072, p=.000) as shown in Table 2

Table 2: Paired samples t-test Frequency of Gambling among groups

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	C2 – C1	.183	.691	.702	.041	.325	2.552	92	.012
Pair 2	T2--T1	-.683	1.131	.113	-.906	-.460	-6.072	100	.000

(C1: Control group pre-test, C2: Control group post-test, T1: Treatment group pre-test, T2: Treatment group post-test).

The results show that BMII was efficacious in decreasing the gambling frequency of university students. One of the key components of BMII was to psycho-educate the participants on the various ways they can use to control their gambling. The decrease in gambling frequency among the participants would not only lead to a decrease in problems associated with excessive gambling such as loss of time and money but also provide them with a sense of control on their gambling behaviour. University students who gamble less often are therefore likely to have more time for their studies and other productive activities.

The hypothesis that BMII was not effective in decreasing typical amount placed per bet was tested using paired samples t-test. The hypothesis was rejected at p<.05 (MD=-.455; t (100) = -3.294, p=.001) as shown in Table 3.

Table 3: Paired Samples t-test for Typical Amount Placed per Bet

	Paired Differences					t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
C2 – C1	-.011	.730	.076	-.161	.140	-.142	92	.887
T2--T1	-.455	1.389	.138	-.730	-.181	-3.294	100	.001

(C1: Control group pre-test, C2: Control group post-test, T1: Treatment group pre-test, T2: Treatment group post-test).

The current study did not focus on total expenditures on gambling but the typical amount placed per bet. Although various researchers use different approaches to measure gambling expenditure, Wood and Williams (2007) opine that typical amount placed per bet provides a more robust measure of gambling behaviour compared to other ways of determining on gambling expenditure. For example, total gambling expenditure can be influenced by how often an individual gambles. Considering that BMII was found to be efficacious in decreasing gambling frequency and typical amount placed per bet one could argue that the cumulative gambling expenditure was consequently reduced as a result of the intervention.

3.1 Limitations of the study

It is important to note that the intervention was short term and did not eliminate gambling behaviour among most participants. This means that there is a possibility of relapse in the long-term.

4.0 Conclusion

The following conclusions were drawn from the discussion of the findings.

Male university students are at higher risk of gambling disorder and concerted efforts need to be put in place with an aim of helping them overcome the problem. Many university student gamblers hold favourable views about gambling hence are preoccupied with gambling.

Gambling disorder is a silent epidemic among university students with many of those who gamble experiencing adverse effects on their psychological wellbeing. Many of these students gamble frequently and use a significant proportion of their upkeep money on gambling. This places them at high risk of getting into unnecessary debt through and financial difficulties. BMII provides an intervention that can be utilized to reduce not only the frequency of gambling but also the amount of money they use to place bets. This reduces the amount of time and money lost through gambling and consequently alleviates the experience of symptoms associated with gambling disorder.

BMII is effective in treating psychological distress associated with gambling disorder. This provides an evidence based intervention for gamblers who would otherwise suffer from gambling disorder without any recourse for treatment. An evidence based intervention for gambling disorder has been lacking in the country. BMII is the first such manualized intervention that could be replicated and used across the country in treating gambling disorder. The scientific yet simple design of BMII provides a practical intervention that is contextualised to the Kenyan context.

The efficacy of BMII supports a harm reduction approach in mitigating the negative effects of compulsive gambling among university students. This approach is more practical and feasible especially among gamblers who are unlikely to proactively seek treatment. The design of BMII, whereby it can be delivered in a psycho-educational format to groups in a single session, means that the intervention can be utilised to reach many students in the university who would otherwise not be reached by other interventions such as individual and longer term therapies. In addition to that, BMII is effective in motivating gamblers to take control of their gambling hence both abstinence and moderation goals can be achieved. Although a goal of total abstinence from gambling is noble, not many individuals are willing to pursue that goal; some may be willing to control or moderate their gambling. This makes BMII a suitable intervention for gambling disorder among university students. BMII however has a limitation that decreased symptoms of gambling disorder and did not completely stop the gambling behaviour of university students.

5.0 Recommendations

The following recommendations are made from this study.

1. Psychological counsellors are encouraged to adopt BMII as an evidence based intervention for treatment of gambling disorder
2. Universities are encouraged to adopt BMII as one of the interventions aimed at supporting students who struggle with gambling disorder
3. Government and agencies concerned with policy and regulation of gambling in the country are challenged to develop structural and policy interventions aimed at not only collecting tax form gambling companies but also alleviating the psychological and social burden on gamblers.
4. BMII is recommended as an evidence based intervention that can be utilised by policy makers to mitigate the problems associated with gambling disorder in the country
5. Capacity building with relevant skills on the use of BMII is encouraged to train professionals who may need to help students with gambling disorder problems
6. University students who experience problems as a result of their gambling are encouraged to seek treatment from professionals trained in evidence based interventions such as BMII

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