PREVALENCE AND MENTAL HEALTH CORRELATES OF GAMBLING AMONG IN-SCHOOL ADOLESCENTS IN PORT HARCOURT, NIGERIA

BY

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Certification

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Declaration

I hereby declare that this research project is my original work and that it has not been submitted anywhere for diploma, degree or fellowship.

Where other sources of information have been used, they have been duly acknowledged.

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List of abbreviations

APA	American Psychiatric Association
AUDIT	Alcohol Use Disorders Identification Test
DSM	Diagnostic Statistical Manual
HADS	Hospital Anxiety and Depression Scale
ICD	International Classification of Disease
LGA	Local Government Area
MAGS	Massachusetts Gambling Scale
RSES	Rosenberg Self-esteem Scale
SDQ	Strength and Difficulties Questionnaire
SHQ	School Health Questionnaire
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization

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Abstract

Background

Gambling has no formal definition but it includes any activity whereby a person pays something of worth in order to participate in an event that presents the possibility of winning something of value whose outcome is determined at least in part by chance. It is defined in economic terms as ―wagering money or something of material value on an event with an uncertain outcome with the primary intent of winning additional money and or material goods‖. The speedy expansion and societal acceptance of legalized and high-stakes gambling, which is now considered fashionable; have raised concerns among public health officials and researchers that underage gambling represents an elevated risk for the eventual development of problem gambling. The foregoing is evident in Port Harcourt, Nigeria, through the recent proliferation of gambling and betting facilities such as Bet Naija, 1960 Bet, 360 Bet, Naira Bet, among others; especially around popular sports such as football.

The developmental milieu of adolescence which is characterized by physical and psychological changes, including risky behaviours among others, appears to be a predisposing factor to adolescents' gambling engagement. Several studies conducted among adolescents found that gambling has an association with anxiety, depression, conduct problems, and alcohol use.

There is paucity of information on adolescent gambling and the associated mental health correlates in Nigeria. This study therefore aimed to ascertain the prevalence and mental health correlates of adolescent gambling in Port Harcourt, Nigeria.

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Methodology

This study was a descriptive cross-sectional survey that was conducted in six secondary schools that were drawn from the two local government areas in Port Harcourt. The study participants comprised of senior secondary school students between the ages of 10 to 19 years with a calculated sample size of three hundred and seventy eight (378) respondents. The local government areas were stratified into industrialized and less industrialized areas; and the secondary schools were selected based on this stratification within the local government areas. In total, two public secondary schools (one each from the industrialized as well as the less industrialized areas) were selected from each local government area.

Furthermore, a private secondary school was randomly selected from each of the two local governments, thus making for a total of six secondary schools from the two local government areas. The Massachusetts Gambling Screen (MAGS) was used to assess for gambling among the adolescents. The selected mental health problems of interest were anxiety, depression, alcohol use and conduct problems; while self-esteem was incorporated as a related social construct. The Hospital Anxiety and Depression Scale (HADS) was used to assess for anxiety and depression; the Alcohol Use Disorders Identification Test (AUDIT) was used to assess for harmful alcohol use; the conduct disorder section of the Strength and Difficulty Questionnaire (SDQ) was used to assess for conduct problems and the Rosenberg Self-Esteem Scale (RSES) was used to assess for self-esteem. The data was analyzed using the Statistical package for the social sciences (SPSS). Frequency tables were used to summarize the socio-demographic characteristics of respondents; Chi square was used to determine the association between the variables. The analysis was done using the 95% level of significance.

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Results

The socio-demographic variables show that 95.6% practised Christianity, 68.3% come from monogamous families, 54.1% were boys and the highest proportion was from the SS1 class, (36.1%). The prevalence of adolescent gambling in this study was 39.9%.

The adolescents who gamble (n=135) reported some socio-economic and psychological problems associated with gambling such as: social and financial pressure (43.7%), neglected obligations (73%), returning to gambling in the hope of winning back lost money (68%) and complaints from family members (53%), among others. There was a statistically significant association between gambling and gender, the adolescents' family type, the marital status of the adolescents' parents and working to earn money, ($P<0.05$).

This study also shows that a statistically significant association exists between gambling and the following mental health problems: anxiety, depression, alcohol use and conduct problems, ($p<0.05$). One hundred and fifty six (156) adolescents reported low self-esteem (46.2%).

Conclusion

The study established that 39.9% of the adolescents who participated in this study engage in gambling, and those who gamble were found to have associated mental health problems such as anxiety, depression, conduct problem and harmful alcohol use.

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Some of the socio-demographic characteristics of the adolescents such as the marital status of the adolescents' parents, working to earn money and male gender were also associated with their gambling behaviour as well as their mental health status.

Total word count 735

Key Words: Prevalence, Gambling, Mental health correlates, Adolescence.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

There is no unanimity about a formal description of gambling, according to Dickerson and O'Connor (2006). However, a common vocabulary in most descriptions is that gambling involves risk taking. According to the philosopher, William Arthur, ―a person who risks nothing, has nothing‖ (Bauerkemper, 2012). Risk-taking underlies many human traits which are evident in evolutionary survival strategies like wanting or seeking food (Moore, 2002). Economically, gambling refers to ―wagering money or something of material value on an event with an uncertain outcome with the primary intent of winning additional money and/or material goods‖ (Bartone, 2008). Thomas Jefferson defines lottery (a form of gambling) as an effective instrument and a tax laid on the willing only, on those who can risk the price of a ticket without possible injury, for the possibility of a higher price (Bauerkemper, 2012). Perceptions about gambling vary across cultures and school of thoughts; some individuals see gambling as recreational and enjoyable while a few others see it as harmful and addictive (Calado and Griffiths, 2016). According to Charles Lamb (1832), a number of moralists condemn lotteries and refuse to see anything honourable in the desire of the ordinary gambler. The moralists critic gambling as some atheists judge religion by its ―overindulgences‖ (Bauerkemper, 2012). Gambling has evolved from just a name to a ―canopy word‖, which comprises online and offline games, respectively (Hing, Russell and Browne, 2017).

A study conducted in the United states found that gambling begins during adolescence, with 68% of adolescents in the United States of America (USA) between the ages of 14–21 years reporting

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that they had gambled in the past year (Storr *et al.*, 2012). The study also found that gaining access to gambling opportunities seems to be very much easy as the industry continues to expand through government-sponsored games in the form of lottery corporations. Also, the promotion of gambling as a glamorous form of entertainment has vindicated the initial perception of the phenomenon as bad, and has instigated the thought in some persons that it is ―normal‖ (Storr *et al.*, 2012). A similar study that was conducted to find the relationship between impulsivity and problem gambling among adolescents in Spain found that gambling has become one of the most frequently reported addictive behaviours among young people globally (Secades-Villa *et al.*, 2016). According to Bauerkemper (2012), scientists have identified four kinds of compulsive gamblers and they are as follows:

Type I gamblers, which could be called 'disorganized and emotionally unstable gamblers', are characterized by schizotypal personality traits, high degrees of impulsiveness, alcohol and substance abuse, psychopathological alterations and early onset age gambling.

Type II gamblers are the schizoid type, they are characterized by the exhibition of high levels of harm avoidance, social distancing, and alcohol abuse.

Type III gamblers are reward-sensitive, they are characterized by high levels of sensation- seeking and impulsiveness, although without any psychopathological alterations.

Type IV gamblers are described as high functioning, globally-adapted personality types, without any disorders relating to substance abuse, and no associated psychopathological alterations (Bauerkemper, 2012). In a study conducted to find out the health functioning characteristics of gambling behaviours and gambling related motivations among high school students in Connecticut, different gambling behaviours were stratified into three categories as follows:

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Strategic gambling (―games of skill‖), Non-strategic gambling (―games of chance‖) and Machine gambling (Yip *et al*., 2011)

Overall, the vulnerability of adolescents to developing gambling problems may be explained by known changes that occur during adolescence. The advancement from childhood to adulthood makes them to be prone to risk-taking behaviours, and not being aware of the potential undesirable effects of such behaviours. The foregoing is as a result of the sudden increase in their body sizes and body features which makes them to feel like they are already adults. Some of the vulnerabilities include susceptibility to peer group influence, self-esteem problems, alcohol and substance abuse, and delinquency amongst others (Huic *et al*., 2017). In a systematic study aimed to review the prevalence of adolescent problem gambling globally, since the year 2000 through 2015, 44 studies were identified and it was found that gambling is part of the life experience of most young people, and that the current generation of youths have grown up in an era where gambling opportunities are widespread. These findings are consistent with several other study findings (Calado and Griffiths, 2016). In addition, the development of technology has generated new forms of gambling through the internet, mobile phone and interactive television (Calado and Griffiths, 2016).

Given the foregoing, understanding the risk factors associated with the onset and or maintenance of gambling and its problems during the period of adolescence has implications for its prevention and treatment (Secades-Villa *et al*., 2016).

1.2 Justification and relevance of the study

Research suggest that adolescents may be more vulnerable than adults to gambling-related problems (Calado and Griffiths, 2016). Although gambling among adolescents is largely illegal, 50% to 90% of youths aged 12 to 17 years report gambling within the past year, and these high

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rates highlight the need to investigate the psychiatric correlates and social consequences of adolescent gambling (Lynch, Maciejewski and Potenza, 2004). Consequently, if the percentage of adolescents who reported gambling in 2004, according to Lynch, Maciejewski and Potenza, (2004) ranged from 50% to 90%, it is therefore pertinent to engage in adolescent gambling study, especially in the Port Harcourt metropolis of South-South, Nigeria, where there is an obvious paucity of statistical information about the phenomenon; this would be pivotal to ascertaining the prevalence of some possible mental health problems in focus as well as some socio-demographic correlates of adolescent gambling in the region.

Furthermore, the rapidly increasing availability of gambling facilities has made the assessment of gambling and the potential for developing problem gambling a clear research priority because, in the present generation, gambling could be engaged in virtually on anything (Holtgraves, 2009). More so, a prospective study that was conducted by the National research council, United States, aimed to evaluate the gambling behaviour of youths, found that a vast majority of young people engage in gambling as a result of the rapid expansion of gambling facilities which cushions their desire for proximity; the societal acceptance and the legalization of the phenomenon which makes it ―uncluttered‖ to everyone. This, on the other hand had triggered concerns among public health officials and researchers because previous studies on adolescent gambling had found that ―underage gambling‖ characterizes an elevated risk for the eventual development of ―problem gambling‖ (Winters *et al.*, 2002, Yip *et al.*, 2013). A study conducted among adolescents in Connecticut which aimed to assess the correlates of gambling on high school grounds, found that youth gambling, particularly at-risk and problem gambling (ARPG) has a connection with poor social functioning and psychiatric distresses during adolescence and later in life (Foster *et al.,* 2015). The study also found that gambling, substance use behaviours and internalizing pathology

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(e.g., depression) co-occur in adolescents, particularly in adolescent problem gamblers (Foster *et al.*,2015). Another study conducted in Canada to evaluate the difference in gambling activities found that the most popular gambling activities that people are likely to engage in are poker, sports betting, various types of lotteries, bingo, pari-mutuel wagering on (horse and dog) races, casino games such as black jack and craps, slots, and a variety of electronic gambling machines like video poker (Holtgraves, 2009). It may also be said that a vast majority of adolescents engage in gambling for several reasons probably due to the lack of information about its mental health implications even though they may exist.

Finally, because of the paucity of information about adolescent gambling and its mental health correlates and implications in Nigeria, this study becomes vital because it will elicit crucial knowledge and information about adolescent gambling, its prevalence, its mental health and socio-demographic correlates in the Port Harcourt metropolis, South-South, Nigeria**.**

For the purpose of this study, the mental health correlates that were considered were **anxiety**, **depression**, **conduct problems** and **alcohol use**, while self-esteem was examined as a psychosocial risk factor.

1.3 Aim and Objectives of the study

This study aimed to assess the prevalence and mental health correlates of gambling among adolescents in Port Harcourt.

Research questions

1. What proportion of adolescents in Port Harcourt engage in gambling?
2. What are the mental health correlates of gambling in this population?

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3. What is the association, if any, between adolescent gambling, socio-demographic correlates and the mental health of the selected adolescents in Port Harcourt?

Specific Objectives

The specific objectives of this study are to:

1. Determine the prevalence of gambling among the selected adolescents in Port Harcourt.
2. Determine the prevalence of mental health problems among the selected adolescents in Port Harcourt.
3. Determine the socio-demographic characteristics associated with adolescent gambling.
4. Investigate the association between gambling and mental health problems.
5. Determine self-esteem as a correlate of gambling among the selected adolescents

1.4 Null Hypotheses

1. The adolescents in Port Harcourt will not report gambling behaviour.
2. The adolescents who report gambling behaviour will not report mental health problems.

1.5 Primary Outcome Measures

The mental health status of adolescents who gamble in Port Harcourt.

1.6 Secondary Outcome Measures

The mental health and socio-demographic correlates of gambling among adolescents in Port Harcourt. Total word count…….1,902

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CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 The historical background of gambling

The chronological background of gambling according to Bauerkemper, suggests that between 1300-1200, Moses used lots to select goats for sacrifice, in 1096, Kings allowed noblemen to gamble in crusades and in 1636, lotteries helped to establish Harvard and Ivy leagues (Bauerkemper, 2012). Furthermore, in 1776, lotteries helped to fund revolution, and those eras were known as the ―first waves‖ (Bauerkemper, 2012).

2.2.0 Gambling

Rose (1986) explains that gambling includes any activity whereby a person pays something of value (consideration) to participate in an event that presents the possibility of winning something of value (prize) whose outcome is determined at least in part by chance. According to Wilson Mizner, gambling is the surest way of getting something from nothing (Bauerkemper, 2012). The ―gambling anonymous‖ also describe gambling as ―any betting or wagering, for self or others, whether for money or not, no matter how slight or insignificant, where the outcome is uncertain or depends upon chance or skill (Bauerkemper, 2012). The Texas Council on Problem and Compulsive Gambling gave a ―common sense‖ description of problem gambling as a level of gambling that brings problem and/or pain to the gambler and /or his/her family (Bauerkemper, 2012). Previous studies have found gambling to be unhealthy and in conflict with optimal living and retrospectively, Volberg *et al.,* (2010) also found that adolescents have an increased likelihood for developing addictive behaviours such as alcohol and substance use including gambling (Van Rooij *et al.*, 2014).

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For the purpose of this study, the ―gambling anonymous‖ definition of gambling according to Jerry Bauerkemper‘s study was utilized.

To have a full grasp of the concept of gambling and its mental health correlates, a brief explanation of the following: **Health, Mental health, Mental illness, Gambling disorder** are highlighted below.

2.2.1 Health

According to the *World Health Organization* (WHO), health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity (Omigbodun, 2013). As mental health advocates, it is imperative to always state clearly that there is no health without mental health and all or almost all human endeavours entail mental processes. For example, gamblers who play sport betting always spend their time thinking about the outcome of their bets; the same thought process is applicable to all other forms of gambling notwithstanding their nature.

2.2.2 Mental health

Going by the *World Health Organization's* (WHO) Comprehensive Mental Health Action Plan 2013-2020 in Geneva, Switzerland, ―Mental health is a state of **wellbeing** in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and s\he is able to make a contribution to his or her community‖ (WHO, 2013). More importantly, child and adolescent mental health is defined as optimal psychological development and functioning, positive sense of self, ability to manage thoughts, emotions and build social relationships, aptitude to learn and acquire education and lastly the opportunity to ultimately be able to have full participation in the society (WHO, 2005; Omigbodun, 2013).

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Adolescents who suffer gambling disorder and other mental health co-morbidities may have problems with optimal psychological functioning (Kong *et al.*, 2014).

2.2.3 Mental illness

Using the *World Health Organization's* (WHO) comprehensive mental health action plan 2013-2030, mental illness is a state of **unwell** in which the individual has difficulty in realizing his\her own abilities, cannot cope with the normal stresses of life, cannot work productively and fruitfully and is not able to make positive contributions to his\her society (WHO, 2005; Omigbodun, 2013). Consonantly, the American Psychiatric Association (APA), defined mental illnesses as health conditions involving changes in thinking, emotion or behaviour or a combination of these (APA, 2018). Mental illnesses are associated with distress and or problems functioning in social, work or family activities (Parekh, 2015).

Following the lead of WHO (1979), the APA first included pathological gambling in the Diagnostic and Statistical Manual, Third Edition (DSM-III) in 1980 and subsequently revised the clinical criteria two more times (APA, 1987 and APA, 1994).

2.2.4 Gambling disorder

The DSM-V, describes gambling disorder as persistent and recurrent problematic gambling behaviours leading to clinically significant impairment or distress as indicated by the individual exhibiting four (or more) of the following in a 12 month period (APA, 2013) .

1. Needs to gamble with increasing amounts of money in order to achieve the desired excitement.
2. Is restless or irritable when attempting to cut down or stop gambling.
3. Has made repeated unsuccessful efforts to control, cutback or stop gambling.

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4. Is often preoccupied with gambling (e.g., having persistent thoughts of reliving past gambling experiences, handicapping or planning the next venture, thinking of ways to get money with which to gamble).
5. Often gambles when feeling distressed (e.g., helpless, guilty, anxious, depressed).
6. After losing money gambling, often returns another day to get even (―chasing‖ one‗s losses).
7. Lies to conceal the extent of involvement with gambling.
8. Has jeopardized or lost significant relationship, job or educational or career opportunity because of gambling.
9. Relies on others to provide money to relieve desperate financial situations caused by gambling (APA, 2013).

Mental disorders have reprehensible influences and consequences on the adolescent, the family and the community**.** The adolescent may be affected by the outcome of gambling, whether negative or positive; s\he may become impulsive or show internalizing or externalizing behaviours thus exhibiting features of anxiety or depression, behavioural problems like conduct disorders, substance use disorders and other mental health problems respectively (Secades-Villa *et al.*, 2016).

Families could experience difficulties functioning and relating with one another as prompted by the adolescent‗s gambling behaviour. This may be noticeable on instances in which some family members support the adolescent who gambles probably because of what they gain as a result of the returns or proceeds s\he gets from the game, whereas other members may as well frown at the behaviour. This may on the long run, lead to disruptive family relationships (Secades-Villa *et al.*, 2016). The community may also be affected by the adolescent‗s gambling behaviour on

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instances in which the adolescent gambler becomes a nuisance in the neighbourhood by carrying guns and weapons to intimidate people and may forcefully exploit them of their money or resources just to garner treasures that perpetuate gambling (Lynch, Maciejewski and Potenza, 2004 and Secades-Villa *et al.*, 2016).

2.3 Adolescence

WHO (2009) defines adolescence as the period of life from 10 years to 19 years. Adolescence, also known as the second decade of life, is a period in which an individual undergoes major physical and psychological changes. Alongside this, there are enormous changes in the person�the person's social interactions and relationships. Adolescence is a time of opportunity, but also one of risk. It presents a window of opportunity to set the stage for healthy and productive adulthood and to reduce the likelihood of problems in the years that lie ahead. At the same time, it is a period of risk: a period when health problems which have serious immediate consequences can occur or when problem behaviours that could have serious adverse effects on health in the future are initiated (WHO, 2009).

Physical Development in Adolescence

Adolescents experience a tremendous amount of physical growth and development. This rapid physical development begins during the prior developmental stage called Puberty and continues during adolescence (Mentalhelp.net)

Because the rate of physical development is so varied during adolescence, it often becomes a source of difficulty and discomfort for youths. Some teens will develop more slowly than their peers. As a result, they may feel self-conscious about their bodies‘ lack of maturity, relative to their peers. They may even feel disappointed or resentful because they are not receiving the same

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kind of attention their more physically mature friends and peers seem to be enjoying. This can lead to feelings of frustration because their bodies are not maturing as fast as they would like, or they may worry that something might be wrong with them (Mentalhelp.net).

Conversely, some teens may mature more quickly than their peers. This earlier development may also cause feelings of frustration and self-consciousness. These teens may be teased about their changing bodies and they may receive more attention than they desire, which can cause them to feel uncomfortable and conspicuous (Mentalhelp.net). For example, a young female teen may not be emotionally prepared to be viewed and admired in a sexual manner. Parents may wish to assist their daughters to determine the limits of what is respectful and acceptable to them, and to develop strategies for handling situations that make them feel uncomfortable. Teenage boys who develop sooner than their male peers may have an easier time because although physical prowess in males is respected and admired, it is less common for them to receive unwanted public attention (Mentalhelp.net).

During adolescence, most growth in height generally occurs during one, single growth period, or "growth spurt." Girls normally start their growth spurt between the ages of 8 and 13 years, with the most rapid growth occurring between the ages of 10 and 13 years. Girls reach their adult height between the ages of 10 and 16 years. Boys tend to begin their growth spurt a bit later than girls. On average, guys start their growth spurt between the ages of 10 and 16 years, with the most rapid growth occurring between the ages of 12 and 15 years. Boys reach their adult height between the ages of 13 and 17. Though the guys reach their adult height later than girls, young men grow to become taller than their female peers. The average height of adult women is 5'5", and the average height of adult men is 5'10". Several factors can influence potential height such as genetics and nutrition, as do certain medical conditions and medications that interfere with

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digestion and appetite. However, teens may suddenly feel awkward and uncoordinated during this time because growth does not always occur at a perfectly proportional rate. Their limbs may become longer or shorter relative to the rest of their bodies and it may confuse or frustrate young teens to inhabit a body that no longer seems familiar (Mentalhelp.net).

Besides significant changes in height, adolescents also experience changes in body composition; that is, the ratio of body fat to lean muscle mass. Teen boys' lean muscle mass greatly increases during adolescence due to the rising levels of male hormones such as testosterone which cause an increase in muscle mass. In general, boys' straight-lined, square bodies become broader at the shoulders and more tapered at the waist, forming the familiar triangular shape of adult males, their arms and legs will become more muscular and bulkier. However, factors such as heredity, nutrition, and muscle-building exercise can influence muscular development. If adolescents play sports, lift weights, or routinely workout in other ways, they are more likely to gain muscle mass. Many teen boys may feel self-conscious about their body if they believe they are not building enough muscle in comparison to their friends and classmates (Mentalhelp.net).

Teen girls continue to develop muscle mass while also adding body fat. During adolescence, girls' percentage of body fat will increase, relative to muscle mass. This additional fat is deposited in their body's midsection (hips, buttocks, and chest). Girls' straight-lined, square bodies become wider and broader at the hips, buttocks, and chest, forming the familiar hour-glass shape of adult females. Often, teen girls feel uncomfortable or upset during this growth phase because of the increase in body fat. In some rare cases, an eating disorder aimed at correcting their body size may develop as a result. Girls should be encouraged to view this change to their body composition in a positive light: as yet another indication they are becoming young women. While girls may feel "fat" during this maturation process, it may be helpful for

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them to understand that some additional body fat is necessary for women to have healthy pregnancies and in order to nurse babies (Mentalhelp.net).

While their bodies are changing and growing it's particularly important for teens and older adolescents to maintain a healthy lifestyle that includes a balanced, nutrient-rich diet, with plenty of exercise, and adequate, restful sleep. Maintaining this healthy balance helps to prevent medical problems such as obesity and diabetes and also protects mental health by creating a healthy and confident self-image (Mentalhelp.net).

Neurodevelopmental changes

Important neuronal developments also take place during the adolescent years. These developments are linked to hormonal changes but are not always dependent on them. Developments are taking place in regions of the brain, such as the limbic system, that are responsible for pleasure seeking and reward processing, emotional responses and sleep regulation. At the same time, changes are taking place in the pre-frontal cortex, the area responsible for what are called executive functions: decision-making, organization, impulse control and planning for the future. The changes in the pre-frontal cortex occur later in adolescence than the limbic system changes (WHO, 2009).

Psychological and social changes

Studies show that psychosocial, emotional changes and increasing cognitive and intellectual capacities accompany the hormonal and neurodevelopmental changes that occur in this period of life. Over the course of the second decade, adolescents develop stronger reasoning skills, logical and moral thinking, and become more capable of abstract thinking and making rational judgments.

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Changes taking place in the adolescent's environment both affect and are affected by the internal changes of adolescence. These external influences, which differ among cultures and societies, include social values and norms and the changing roles, responsibilities, relationships and expectations of this period of life (WHO, 2009).

Cognitive Development in Adolescence

During adolescence (between 12 and 18 years of age), the developing human acquires the ability to think systematically about all logical relationships within a problem. The transition from concrete thinking to formal logical operations occurs over time, each adolescent develops his or her own view of the world. Some adolescents may be able to apply logical operations to school work long before they are able to apply them to personal dilemmas. When emotional issues arise, they often interfere with an adolescent's ability to think in more complex ways. The ability to consider possibilities, as well as facts, may influence decision-making, in either positive or negative ways (stanfordchildrens'health.org)

Some common milestones indicating a progression from more simple to more complex cognitive development include the following:

Early Adolescence

The adolescent uses of formal logical operations in school work.

The adolescent questions authority and society standards.

The adolescent constructs and verbalizes his/her thoughts and views on a variety of topics (stanfordchildrens'health.org).

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Middle adolescence

The adolescent questions more extensively.

The adolescent often analyzes more extensively.

The adolescent begins to form his or her own code of ethics (for example, what do I think is right?).

The adolescent begins to develop own identity (for example, who am I?).

The adolescent begins to consider possible future goals (for example, what do I want?) (stanfordchildrens'health.org).

Late adolescence

The adolescent develops increased thoughts about global concepts such as justice, history, politics, and patriotism.

The adolescent develops idealistic views on specific topics or concerns.

The adolescent debates and develops intolerance of opposing views.

The adolescent's thinking is focused on making career decisions (stanfordchildrens'health.org).

Implications of adolescent development for health and behaviour

In many ways, adolescent development drives the changes in the disease burden between childhood to adulthood—for example, the increase with age in sexual and reproductive health problems, mental illness and injuries (WHO, 2009).

The appearance of certain health problems in adolescence, including substance use disorders, mental disorders and injuries, likely reflects both the biological changes of puberty and the

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social context in which young people are growing up. Many of the health-related behaviours that arise during adolescence have implications for both present and future health and development. For example, alcohol use and obesity in early adolescence not only compromise adolescent development, but they also predict health-compromising problems such as alcohol use and obesity in later life, with serious implications for public health (WHO, 2009).

The changes that take place during adolescence suggest nine observations with implications for health policies and programmes:

- Adolescents need explicit attention.
- Adolescents are not all the same.
- Some adolescents are particularly vulnerable.
- Adolescent development has implications for adolescent health.
- Adolescent development has health implications throughout life.
- The changes during adolescence affect how adolescents think and act.
- Adolescents need to understand the processes taking place during adolescence.
- To contribute positively to the adolescents‘ overall health, adults need to understand the processes taking place during adolescence.
- Public health and human rights converge around the concepts of adolescent development (WHO, 2009).

2.4 Risk factors of gambling

A prevalence study by Castrén *et al.,* (2013) identified different vulnerabilities and factors as being associated with adolescent gambling. The study highlighted unemployment, male gender and early onset among others as vulnerabilities of gambling (Calado and Griffiths, 2016). A study aimed to evaluate ―at-risk and problem gambling‖ among adolescents in Finland found that

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adolescents have increased likelihood for developing addictive behaviours such as gambling, and that early onset age of gambling is associated with more severe gambling behaviour (Yip *et al.*, 2013). The risk factors may be biological, social or psychological. According to a study on gambling and adverse life events among adolescents, emotionally-vulnerable youths under a lot of stress may inappropriately turn to gambling as a chance to feel important, in control if they win, or to escape or avoid dealing with their emotional concerns (Storr *et al.*, 2012). The study also showed that emotion-based, avoidant and distraction orientated coping styles are often exhibited by youths who gamble excessively (Storr *et al.*, 2012).

Routine daily stresses have also been linked to spontaneous urges to gamble among adult pathological gamblers, which may be the same for adolescents, and youths with gambling related have been found to experience a greater number of negative life events than those who did not gamble (Storr *et al.*, 2012).

Several cross-sectional studies have established links between adolescent problem gambling and several individual characteristics, including substance abuse, juvenile delinquency, school problems, psychological problems, being victimized by sexual or physical abuse, parental history of gambling problems, and being male (Winters *et al.*, 2002).

According to a study by Calado and Griffiths (2016), people engage in gambling because it has the capacity to create excitement. A study conducted by The California Institute of Technology and University College London, found that the part of the brain that controls fear may prevent gambling even when the estimated benefit is greater than the cost, conversely, those whose amygdala, containing the brain‘s fear responses are damaged, were found to gamble even when the odds are against them (Bauerkemper, 2012).

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2.5 Aetiology of gambling disorder

Aetiology is defined in general terms by Merriam- Webster as ―all causes of diseases or abnormal conditions‖ (Merriam-Webster Dictionary). Over the centuries, beliefs regarding the causes of gambling have paralleled those of other health issues and have progressed through spiritual, moral, and physical theories of causality. With advancements in science, technology, and understanding of the complex interrelationships among genetics and environment, the causes of many diseases are now well understood and in many cases preventable and, or, treatable (Moore, 2002)

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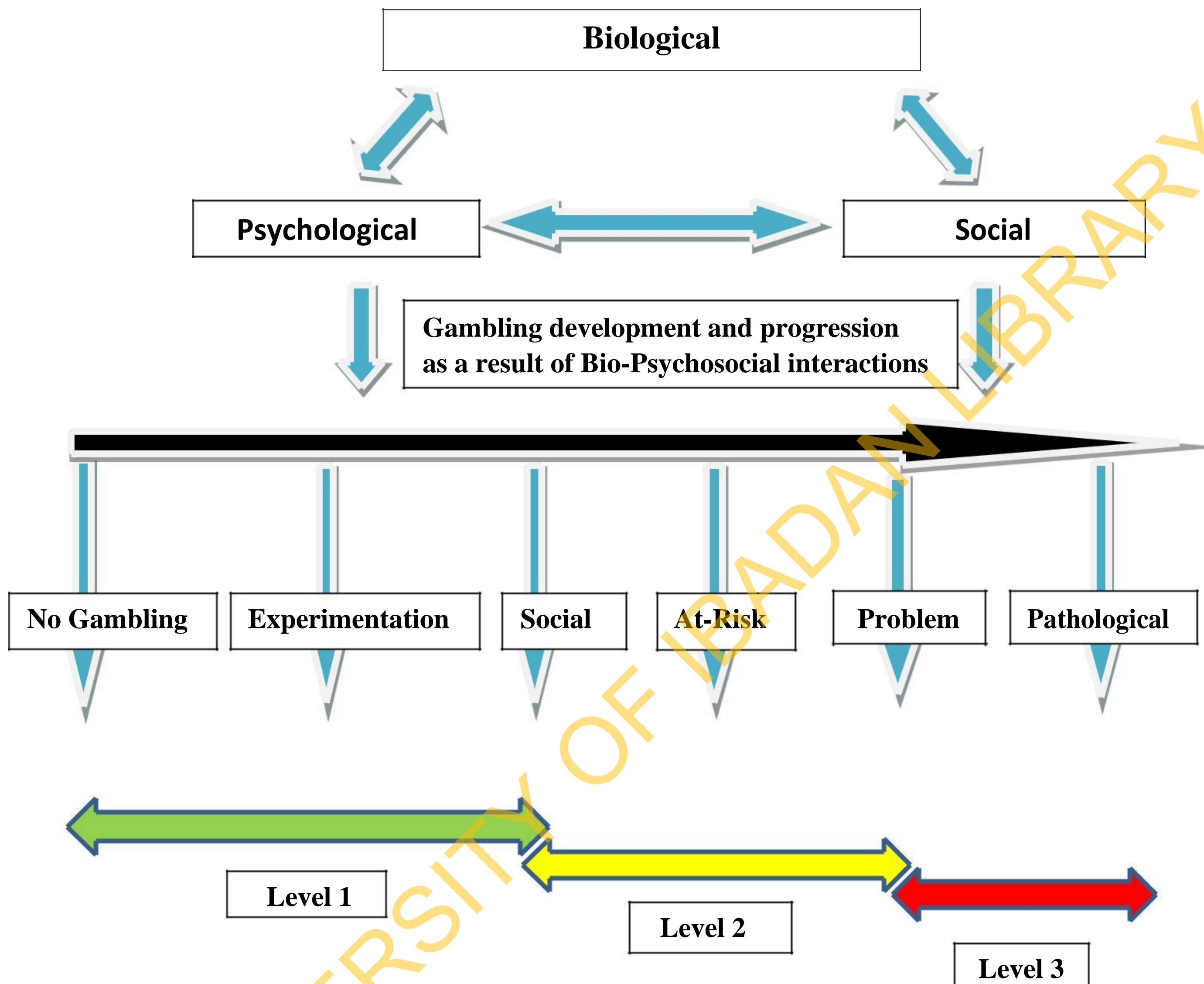
Figure 1: Gambling development and progression as a result of Bio-Psychosocial interaction (s).



Copied from (Bauerkemper, 2012) and modified for this study.

The figure above describes the development and progression of gambling from the stage of experimentation through the pathological stage as a result of bio-psychosocial interactions. The diagram shows that gambling behaviour occurs on a continuum and is not static (Bauerkemper, 2012)**.** Using the bio-psychosocial model (Dogar, 2007), reviewed George Engels‘ (1977) bio-psychosocial model‘s study, and postulated that biological, psychological and social factors

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influence the prevention, causes, presentation, management and outcome of any disease or disorder. Each of the three factors interacts continuously with the others and together constitutes the ―unique state‖ called illness (Imthiaz, 2007). Exploring the biological causes of adolescent gambling, adolescents who had immature development of the frontal cortical and subcortical monoaminergic systems during neurodevelopment may be predisposed to impulsive behaviours such as gambling (Secades-Villa *et al.*, 2016). The adolescent may have also suffered traumatic experiences in the form of parental neglect, sexual abuse, and physical abuse in the form bully by older persons or classmates, loss or abandonment which may culminate into a wide range of disorders including gambling (Moore, 2002). This may further alter their psychological functioning such as the ability to think and decide right in critical situations, which may also interfere with the kind of friends they keep The forgoing gives a practical explanation of the bio-psychosocial interaction which constitutes the unique state called illness.

2.6 Prevalence of adolescent gambling

Though gambling is frequently described as an adult behaviour, adolescents gambling problems and prevalence are approximately three times that of adults. Studies also show that higher rates of gambling and gambling-related problems exist among adolescents (Wilber *et al.*, 2006). Studies have also confirmed that rates of pathological gambling are higher amongst the adolescent population than amongst adults‘, and today's adolescents are the first to live their entire lives in a society of legalized gambling. The foregoing stems from the fact that gambling industry has grown to become an entertainment industry at a rapid pace (Storr *et al.*, 2012). The availability of gambling activities has reached an unprecedented level, no longer does one have to visit a casino or race track to place a bet (Holtgraves, 2009). Gambling opportunities are at local comer stores, restaurants and bars. Studies also show that lotteries, video lottery terminals

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(VLTs) and sports betting have become part of everyday life of many young people (Storr *et al.*, 2012). It is therefore evident that gambling facilities are everywhere and also not out of place to make a positive inference that an increase in gambling facilities will lead to a direct increase in the number of gamblers. In a systematic review of global adult gambling prevalence, 69 studies were identified and the findings showed that approximately 25-80% of adults gambled in the past year or may gamble throughout life, and about 0.12-5.8% of adults meet the criteria for problem gambling, although, several demographic characteristics were associated with adult gambling involvement and problem gambling (Calado and Griffiths,2016). Another systematic review conducted by Calado et al., (2016), found that global adolescent problem gambling prevalence range between 0.2-12.3 % (Huic *et al.,* 2017).

A study carried out among adolescents in Addis Ababa, Ethiopia, using the DSM-IV-J checklist, revealed that the majority of the samples 56.3 % (n=422) were non-problematic or social gamblers, while 36.8 % were at risk for severe problematic gambling and 6.9% were probable problematic/pathological gamblers (Abdi, Ruiter and Adal, 2015). A prevalence study on adolescent gambling in the Montreal region of Canada, utilized 817 adolescent high school students and found that in general, 80.2% of students reported having gambled during the previous year, with 35.1% gambling a minimum of once per week. (Gupta and Derevensky, 1998). Research also revealed that adolescents reported participating in gambling behaviour more often than any other addictive behaviour, including cigarette smoking, alcohol consumption, and illicit drug use (Gupta and Derevensky, 1998). Result from a study conducted among adolescent girls in Croatia showed that girls are less involved in gambling than boys (Huic *et al.*, 2017).

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2.7 Mental health correlates of adolescent gambling

The result from a study conducted to evaluate the impact of gambling in the United states, found that gambling during adolescence was linked with psychiatric, social, and substance misuse problems in adulthood (Lynch, Maciejewski and Potenza, 2004). A research conducted in 9 primary public schools in the US mid-Atlantic city found that gambling has a strong relationship with adverse and stressful life events (Storr *et al.*, 2012). A survey conducted in several different Canadian provinces found an association between gambling and financial problems, health problems and dysfunctional families (Holtgraves, 2009). Another study conducted in Oviedo, Spain, among 1,327 high school students also reported a direct relationship between impulsivity and gambling (Secades-Villa *et al.*, 2016).

2.8.0 Gambling and anxiety

Everyone feels anxious from time to time; few people get through a week without some anxious tension or a feeling that something will not go well. We may feel anxious when we are facing an important event, such as an exam or job interview, or when we perceive some threat or danger, such as waking to strange sounds in the night (Rector *et al*. 2011). However, such everyday anxiety is generally occasional, mild and brief, while the anxiety felt by the person with an anxiety disorder occurs frequently, is more intense, and lasts longer, up to hours, or even days (Rector *et al*. 2011). Anxiety disorders of any form could be characterized by the following: Irrational and excessive fear, apprehensive and tense feelings and difficulty managing daily tasks and/or distress related to these tasks (Rector *et al*. 2011).

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A study conducted in Dutch secondary schools in The Netherlands, aggregated the samples of the yearly Dutch monitor study for the years 2009, 2010 and 2011, and found a relationship between gambling and social anxiety (Van Rooij *et al.*, 2014).

2.8.1 Gambling and Depression

Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration (Marina *et al.*, 2012) . Moreover, depression often comes with symptoms of anxiety. These problems can become chronic or recurrent and lead to substantial impairments in an individual‘s ability to take care of his or her everyday responsibilities. At its worst, depression can lead to suicidal thoughts, attempted suicide and then suicide (Marina *et al.*, 2012).

A study conducted in four high schools in Addis Ababa, Ethiopia, found that depression and suicidal ideation had a positive relationship with gambling (Abdi, Ruiter and Adal, 2015). Another study that was conducted in a high school in Connecticut found a relationship between gambling and mood disorders (Potenza *et al.*, 2011). A survey conducted in public high schools in Connecticut, found that a strong relationship exists between gambling and depression (Cavallo, Krishnan-sarin and Potenza, 2013).

2.8.2 Gambling and Conduct Problems

The International Classification of Disease version ten (ICD-10), states that the clinical descriptions and diagnostic guidelines of conduct disorder are excessive levels of fighting or bullying, cruelty to animals or other people, severe destructiveness to property, fire-setting, stealing, repeated lying, truancy from school and running away from home (Scott, 2012). Other symptoms include unusually frequent and severe temper tantrums, defiant provocative

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behaviour, and persistent severe disobedience (Scott, 2012). Any one of these categories, if marked, is sufficient for the diagnosis (Scott, 2012). A cross sectional survey which involved 10 high schools in Connecticut, found that conduct problems and aggression were correlates of gambling (Kong *et al.*, 2014).

2.8.3 Gambling and Alcohol use/misuse

The Diagnostic Statistical Manual 5th Edition defines alcohol abuse as a problematic pattern of alcohol use that leads to clinically significant impairment or distress, as manifested by 2 of the following within a 12-month period (APA, 2013):

- *—Alcohol is often taken in large amounts or over a longer period than was intended.*
- *There is a persistent desire or unsuccessful efforts to cut down or control alcohol use.*
- *A great deal of time is spent in activities necessary to obtain alcohol, use alcohol or recover from its effects.*
- *Craving or a strong desire or urge to use alcohol.*
- *Recurrent alcohol use resulting in a failure to fulfil major role obligations at work, school or home.*
- *Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol.*
- *Important social, occupational, or recreational activities are given up or reduced because of alcohol use.*
- *Recurrent alcohol use in situations in which it is physically hazardous.*
- *Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been cause or exacerbated by alcohol.*

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- *Tolerance as defined by either of the following:*

1. *A need for markedly increased amounts of alcohol to achieve intoxication or desired effect.*
2. *A markedly diminished effect with continued use of the same amount of alcohol.*

- *Withdrawal as manifested by either of the following:*

1. *The characteristic withdrawal syndrome of alcohol*
2. *Alcohol (or a closely related substance such as benzodiazepine) is taken to relieve or avoid withdrawal symptoms"* (APA, 2013).

A study which utilized data from the National Opinion Research Centre, USA, found that alcohol, drug use and abuse\dependence were correlates of gambling (Lynch, Maciejewski and Potenza, 2004). A study conducted among 4,594 Australian adults aimed to evaluate the risk factors for gambling problems among selected gambling types (Online electronic gaming machines, Race Betting and Sports Betting), found an association between lower incomes, use of alcohol or illicit drugs and gambling (Hing, Russell and Browne, 2017). The findings from a survey conducted among high-school students in Connecticut showed a relationship between smoking and adolescent gambling (Weinberger *et al.*, 2015). Another study conducted among first year junior high school students in Finland found a positive link between gambling and smoking and drinking for intoxication (Castrén *et al.*, 2015).

2.8.4 Gambling and self-esteem

Self-esteem is having a generally positive or negative view or opinion of oneself (Louella *et al.*, 2005). On the opposite, low self-esteem is having a negative overall opinion of oneself, judging or evaluating oneself negatively, and placing a general negative value on oneself as a person (Louella *et al.*, 2005). Persons with low self-esteem might put themselves down, doubt

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themselves, often say negative things about themselves or blame themselves when things go wrong, which may be transient to depression (Louella *et al*., 2005). A study conducted in Dutch secondary schools, aggregated samples of the yearly Dutch monitor study for the years 2009, 2010 and 2011, and found that a relationship existed between gambling and negative self-esteem (Van Rooij *et al.*, 2014).

2.9 Relevance of this study to Child and Adolescent Mental Health

This study will contribute to the existing literature on child and adolescent mental health. It will provide insight about the prevalence of adolescent gambling and the associated mental health status of adolescents in Port Harcourt. The information will further provide a useful barometer to aid policy development and planning to address the resultant problems.

Total word count……5,632

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CHAPTER THREE

3.0 METHODOLOGY

3.1 Study location

This study was conducted in the two local government areas (LGAs) in Port Harcourt, the capital and largest city in Rivers State, Nigeria. It is bounded south by the Atlantic Ocean, to the North by Imo, Abia and Anambra States, to the East by Akwa-ibom State and to the west by Bayelsa State. Port Harcourt has a land mass of 11,007 km^2. As at 2016, the Port Harcourt urban area had an estimated population of over 1,865,000 inhabitants. Port Harcourt features a tropical wet climate with lengthy and heavy rainy seasons and very short dry seasons. Only the months of December and January truly qualify as dry season months in the city. The indigenes of Port Harcourt are predominantly Christians. There are two LGAs in Port Harcourt, namely Port Harcourt City and Obio-Akpor. Port Harcourt city LGA has 12 registered public secondary schools. Two are for boys, two for girls and eight co-educational schools. Forty private secondary schools are registered in Port Harcourt. Obio-Akpor LGA has 18 public secondary schools-recognized and registered and these are broken down into one public secondary school for boys, two girls' public secondary schools and fifteen co-educational public secondary schools. The registered private secondary schools are fifty in number.

Study Design

This study was a descriptive cross-sectional survey.

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Study population

The study population utilized in this study comprised of in-school senior secondary adolescents who were aged 10 to 19 years old as at the time of the study.

Inclusion Criteria

Senior secondary school students who were aged from 10 to 19 years old at the time of this study, and who provided consent and assent to participate in the research were included.

Exclusion Criteria

The study excluded junior secondary school students. Also, senior secondary students who were ill at the time of data collection and those who refused to participate for personal reasons were excluded.

Sample size calculation

A study conducted among adolescents in Addis Ababa, Ethiopia, using the DSM-IV-J checklist, revealed that the majority of the samples 56.3 % (n=422) were non-problematic or social gamblers, while 36.8 % were at risk for severe problematic gambling and 6.9% were probable problematic/pathological gamblers (Abdi, Ruiter and Adal, 2015). Therefore, the reported prevalence of 56.3% of social gamblers was utilized to calculate the sample size using the Leslie Kish formula.

$$\mathbf{n = Z^2pq/d^2}$$

Using 95% level of confidence,

Z = 95% = (P<0.05) = 1.96

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P = Prevalence = 56.3% = 0.563

q = 1 – p = 1- 0.563 = 0.437

d = Level of precision = 5% = 0.05

Solving the above,

$n = (1.96)^2 \times 0.563 \times 0.437 / 0.05^2$

Therefore,

n = 378

Sampling Technique

A list of all the public and private secondary schools in metropolis was made available by the Rivers State Ministry of Education to aid randomization and equal sample representation.

A multistage-stratified sampling method was used by the researcher to select the schools and the study participants from each of the schools. The stages are broken down as follows:

Stage 1- Local government stratification:

Port Harcourt metropolis has two local government areas (Port Harcourt City and Obio-Akpor LGAs). Each of these LGAs was further stratified into the highly industrialized and the less industrialized areas. The foregoing classification was made according to the information from the Rivers State ministry of Urban development. The chart below further illustrates the stratification.

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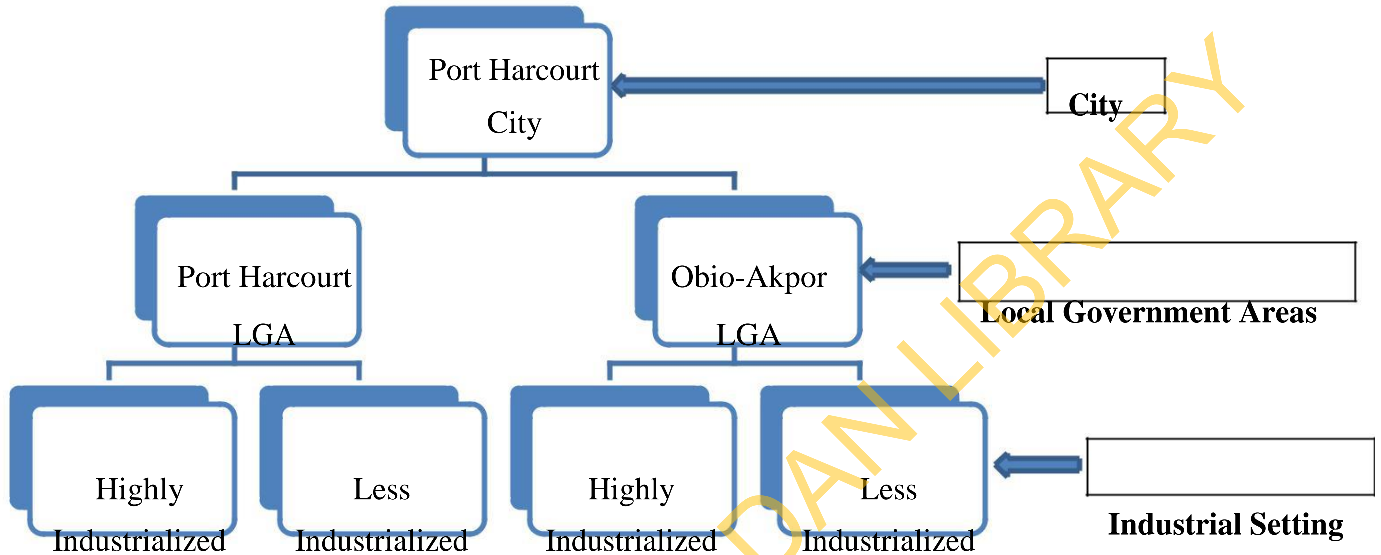
Figure 2: Local Government areas stratification



Stage 2- Secondary school stratification:

The secondary schools in Port Harcourt metropolis were stratified into two categories-public and private. In each of the local government areas, two public schools were selected; one from the highly industrialized area and the other from the less industrialized area, thus, making a total of four (4) selected public secondary schools from Port Harcourt metropolis. Furthermore, one private secondary school was randomly selected from the less industrialized area of Obio-Akpor LGA, while another private secondary school was randomly selected from the highly industrialized area of Port Harcourt LGA, thus making a total of two selected private secondary schools from Port Harcourt metropolis. The reason for selecting more public secondary schools than the private is that, data from the Rivers State Ministry of education indicates that more students attend the public secondary schools than the private secondary schools. The data

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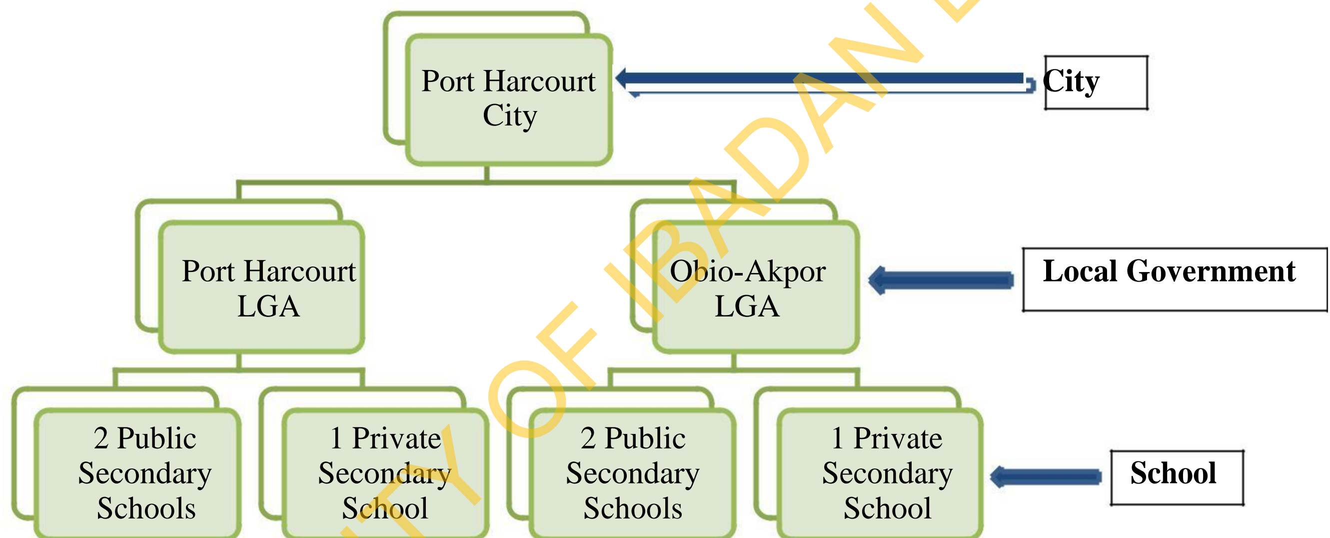
revealed that, though there are more private secondary schools than the public secondary schools in Port Harcourt metropolis, the population of all the senior secondary school students in public secondary schools in Port Harcourt is twice the population of the private secondary schools, with about 12,750 students in the 30 public secondary schools in Port Harcourt and about 5,550 students in over 90 private secondary schools in Port Harcourt. See the chart below for details.

Figure 3: Secondary school stratification



Stage 3- Selection of representative sample:

The proportional sampling method was used to select secondary school students from each of the schools. This was calculated by dividing the total population of each of the senior secondary schools by the sum of the total population of all the senior secondary schools, multiplied by the calculated sample size. The sum of the total population of all the senior secondary school students from the six selected schools in Port Harcourt City is 1,429 and the calculated sample

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size is 378. The proportional sampling technique was used to select the total number of study participants from each of the classes and the sampling interval was used to select the participants.

See the Table below for details.

Table 1: Representative sample from each of the schools

Schools	Population of each senior secondary school	Representative sample
	(Calculated sample size= 378)	
School 1	468	123
School 2	117	31
School 3	196	52
School 4	120	32
School 5	245	65
School 6	283	75
Total	**1,429**	**378**

Stage 4- Selection of study participants:

The class register of each of the wings (A-D) was used as a guide to recruit students. For the purpose of randomisation, students were picked successively after a certain number which was calculated as the sampling interval. This was calculated by dividing the total number of senior secondary school students in each of the schools by their representative samples.

The table below shows the sampling interval for each of the schools

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Table 2: Calculation of sampling intervals

School	Calculation of the sampling Interval	Sampling interval
School 1	468/123 = 3.80	4
School 2	117/31 = 3.77	4
School 3	196/52 = 3.76	4
School 4	120/32 = 3.75	4
School 5	245/65 = 3.76	4
School 6	283/75 = 3.77	4

Study instruments

The following instruments were used in this study:

1. **The School Health Questionnaire**

The School Health Questionnaire (SHQ) is an instrument that has items which measure personal information, family information and school related information of the participants. For the personal information, items such as how old are you? When were you born? and are you a boy or a girl? were used. Items such as ―What is your family type?‖ ―Who do you live currently with?‖ and ―what is the marital status of your parents?‖ were some of the items that assess family information. Items such as ―what is the name of your school?‖ and ―what class are you?‖ were some of the items that assess school information. The instrument was adapted from the socio-demographic questionnaire by Omigbodun *et al.,* (2008).

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2. The Massachusetts Adolescent Gambling Screen

The Massachusetts Adolescent Gambling Screen (**MAGS**) was developed by Shaffer et al., (1994). The instrument is a brief clinical instrument that yields an index of non-pathological and pathological gambler during a 5-10 minute survey or interview. For the purpose of this study, the items on the Massachusetts Gambling Scale were scored as ‗yes or no', the first item on the scale was used to evaluate the presence or absence of gambling, while the other items were used to evaluate social, economic and psychological problems among adolescents. Questions 29 and 30 were struck out to avoid the repetition of questions on age that already appeared in the School health questionnaire. Massachusetts gambling screen has not been validated in Nigeria and has not also been used locally.

3. The Rosenberg Self-esteem Scale

The Rosenberg Self-esteem Scale (**RSES**) was developed by a Sociologist Dr. Morris Rosenberg (Rosenberg, 1965). It is a ten item Likert-type scale with items answered on a four-point scale which ranged from ―strongly agree‖ to ―strongly disagree‖. Five of the items are positively worded statements while the other 5 are negatively worded. The scale measures self-esteem by asking the respondents to reflect on their current feelings. Scores between 15 and 25 are within normal range, while scores below 15 suggest low self-esteem. The instrument has items such as ―On the whole, I am satisfied with myself‖; At times, I think I am not good at all‖ and ―I am able to do things as well as most other people‖. The Rosenberg self-esteem scale has been used locally in Nigeria and in Africa by Barnabas *et al,* (2012) and Enejoh, *et al*, (2015).

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4. The Alcohol Use Disorders Identification Test

The Alcohol Use Disorders Identification Test (AUDIT) is a 10 item screening tool developed by the World Health Organization, (WHO) to assess alcohol consumption, drinking behaviours and alcohol-related problems, (World Health Organization, 2001). It has two versions, the clinician-administered version and the self-report version. The clinician administered version was used in this study. The instrument has items such as ―How often do you have a drink containing alcohol‖? and ―How many drinks containing alcohol do you have on a typical day when you are drinking‖? A score of 8 or more is considered to indicate hazardous or harmful alcohol use (Thomas *et al*., 2001). The instrument has been validated across genders and in a wide range of racial/ethnic groups and is well suited for use in primary care settings (Thomas *et al*., 2001). For the purpose of this study, the rates of severity were recorded as ≤ 7 as normal and ≥8 as harmful use. The instrument has been used in Nigeria by Adewuya (2005) and Lasebikan (2016).

5. The Hospital Anxiety and Depression Scale

The Hospital Anxiety and Depression Scale (**HADS**) was devised in 1983 by Zigmond and Snaith, (Zigmond *et al., 1983*). It was developed to measure anxiety and depression among patients in the hospital settings and has become a popular tool for clinical practice and research. The questionnaire comprises of 7 questions for anxiety and 7 questions for depression, and takes 2–5 minutes to complete. The **HADS** does not include all the diagnostic criteria for depression. The **HADS** questionnaire has been validated in many languages. The instrument has items such as ―I feel tense and wound up?‖ and ―I look forward with enjoyment to things?‖ It is useful for initial assessment and to track progression (or resolution) of psychological symptoms. Scores of 0-7, 8-10, 11-14 and 15-21 represent absence, mild, moderate and severe levels of anxiety and depression, respectively. This instrument was employed in this study because of the short and

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brief time associated with its administration and interpretation. It is also one of the National Institute for Health and Care Excellence (NICE) recommended tools for the diagnosis of depression and anxiety. The Hospital Anxiety and Depression scale has been used in Nigeria by Abdul *et al*, (2014).

6. The Strength and Difficulties Questionnaire

The Strengths and Difficulties Questionnaire is a self-report inventory for children and adolescents, developed by a child psychiatrist from the United Kingdom (Goodman *et al,* 1997). The instrument has been validated and translated into more than 80 languages. There are three versions of the instrument, the short term, the longer form with impact supplement and the follow-up version. The conduct disorder aspect of the instrument with questions 5, 7, 12, 18 and 22 which assesses conduct problems was utilized in this study. Scores of 0, 1-3, 4 and 5-10 represent no behavioural problems, significant behavioural problems, clinically significant behavioural problems and a substantial risk of clinically significant behavioural problems, respectively. The instrument has items such as I am often accused of stealing and ―I am generally well behaved‖. For the purpose of easy interpretation of the findings from this study, the rate of severity was renamed as no conduct problem, mild, moderate and severe. The instrument has been validated and has been used in Nigeria by Bakare, *et al*., (2010) and Oluremi, (2013).

Pre-testing

A pre-test was carried out among students of a secondary school that was not part of the selected schools to test run the questionnaire administration process. At the end of the pre-test, some aspects of the questionnaire which were not easily understood were simplified by the researcher and the total time for filling the questionnaire was noted. Furthermore, the researcher discovered

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that it was best to read out and explain each of the items to the participants before they ticked their responses.

Study procedure

A copy of the ethical approval letter was taken to the various schools that were selected to participate in the research, and permission was obtained from the schools' administration. The class activity schedule was provided by the school to enable a smooth meeting with the students in their class-free periods. The data was collected through a modified self -report; that is, each item was read out clearly to the participants to enable them understand the concepts and terms that were used in the questionnaire. The participants who did not understand some terms on the questionnaire were given additional explanation until it was understood by everyone. The students would then tick the item that best tallies with their individual realities. It took a maximum of 45 minutes and a minimum of 35 minutes to fill up the questionnaire in each of the schools. Light refreshment was given to the participants in all the schools at the end of each data collection session. During and after the data collection, all the information given by the participants were kept confidential. The students' participation in the research ended immediately the data collection process was over.

Ethical Consideration

Ethical approval was obtained from the Rivers State Ministry of Health; while permission was obtained from the Directorate of Schools, of the Rivers State Ministry of Education. Permission was also obtained from the schools' administration before school access was granted. Consent forms were given to the students to give to their parents or guardians. Visitations were made to the various schools on agreed dates to collect the consent forms from the students and those who

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misplaced their forms were given another one, those who also forgot their forms at home were reminded to come along with it the next day. Those whose parents gave consent including the adolescents who gave assent were those who participated in the study. The study procedures were explained in detail and in clear terms to the students (participants) before the commencement. The research procedure did not involve any risk which would cause physical or psychological harm.

Confidentiality of data

All data collected were coded anonymously with restricted access to the researcher and the statistician.

Informed consent

The participants were given the opportunity to take the consent form home for their parents to read through and give consent; while the students also gave their assent to voluntarily participate in the study. Informed consent forms were sent to parents and guardians ahead (72 hours prior to data collection). Follow up reminders were sent via the teachers, 24 hours prior, for those parents who had not returned their forms.

Beneficence

The mental status of adolescents was assessed; this would aid information towards providing psychological interventions for the adolescents in need.

Non-maleficence

The study did not cause or predispose the participants to any form of psychological or physical harm.

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Data analysis and management

At the end of the data collection, the questionnaires were retrieved from the participants. The data collected was checked for, cleaned, entered and analyzed using the 21st version of the Statistical Package for Social Sciences (SPSS). Frequency tables were used to summarise the socio-demographic characteristics of the respondents while Chi-square was used to analyze the association between gambling and the socio-demographic characteristics of the respondents. The Chi-square was used to analyse the association between gambling and self-esteem scores of the respondents. Chi-square was also used to analyze the association between mental health problems and gambling among adolescents. The analysis was done using the 95% level of significance.

Total word count: 2,915

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CHAPTER FOUR

4.0 RESULTS

Introduction:

This chapter is divided into six sections and presents findings on the prevalence and mental health correlates of gambling among adolescents in Port Harcourt.

The first section provides a description of the socio-demographic characteristics of participants. The second section describes the prevalence of adolescent gambling in Port Harcourt and the associated socio-economic and psychological problems. The third section describes the prevalence and severity of mental problems among adolescents in Port Harcourt, the fourth section describes the socio-demographic correlates of gambling among adolescents, the fifth section describes the association between mental problems and gambling among adolescents and the sixth section describes the self-esteem correlates of gambling among adolescents in Port Harcourt.

Section One

A total of 378 participants were recruited in this study. Forty (40) questionnaires were not included in the analysis for reasons such as improper filling and refusal to continue as participants in the study respectively, while the 338 questionnaires that were analyzed were accurately filled by the participants.

4.1: Socio-demographic characteristics of the respondents

Two hundred and twenty participants (65.1%) were middle adolescents (aged 14-16 years old). One hundred and twenty two (36.1%) of the participants were in SS1. One hundred and eighty

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three (54.1%) were boys, and 323 (95.6%) were Christians. Two hundred and twelve (62.7) of the participants reported that their parents were married, and 231 (68.3%) of the participants were from monogamous families and 81 (24.0%) of the participants work to earn money. 211 (62.4%) of the respondents reported living with their parents. See Tables 4.1a and 4.1b below for details.

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Table 4.1a: Socio-demographic characteristics of the respondents: Personal information of the respondents (N=338)

Variable	n (%)
Class	
SS1	122 (36.1)
SS2	100 (29.6)
SS3	116 (34.3)
Gender	
Boys	183 (54.1)
Girls	155 (45.9)
Age (Years)	
10-13 years	41(12.1)
14-16 years	220 (65.1)
17-19 years	77(22.8)
Religion	
Christianity	323 (95.6)
Islam	7(2.0)
Others	8(2.4)
The adolescent works to earn money	
Yes	81(24.0)
No	257 (76.0)

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Table 4.1b: Socio-demographic characteristics of respondents: Family information of the respondents (N=338)

Variable	n (%)
Family type	
Monogamous family	231(68.3)
Polygamous family	107(31.7)
Parents' marital status	
Married	212(62.7)
Separated/Divorced	42 (12.4)
Father is dead	37 (10.9)
Mother is dead	20(6.0)
Mother and father is dead	27(8.0)
Who do you currently live with?	
Both parents	211(62.4)
Mother alone	34 (10.1)
Father alone	20(5.9)
Others (Grandparent(s), Aunties, Uncles and Guardians	73 (21.7)
Parents level of education (Father)	
Primary	30(8.9)
Secondary	121(35.8)
Tertiary	187(55.3)
Parents level of education (Mother)	
Primary	36 (10.7)
Secondary	180(53.3)
Tertiary	122 (36)

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Section Two

4.2 Prevalence of gambling among adolescents in Port Harcourt

One hundred and thirty five adolescents, out of the total of 338 respondents, were engaged in various forms of gambling, a prevalence rate of (39.9%). They also reported some socio-economic and psychological problems associated with their gambling. Among the adolescents who gamble, 43.7% reported social and financial pressures, 44.4% reported feelings of guilt as a result of gambling, 53.3% reported that their family members worry and complain about their gambling. See figure 4.1 for the prevalence of gambling among adolescents and Table 4.2 for the associated economic, social and psychological challenges of gambling as reported by the adolescents who gamble in Port Harcourt.

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Figure 4.1 Prevalence of adolescent gambling in Port Harcourt

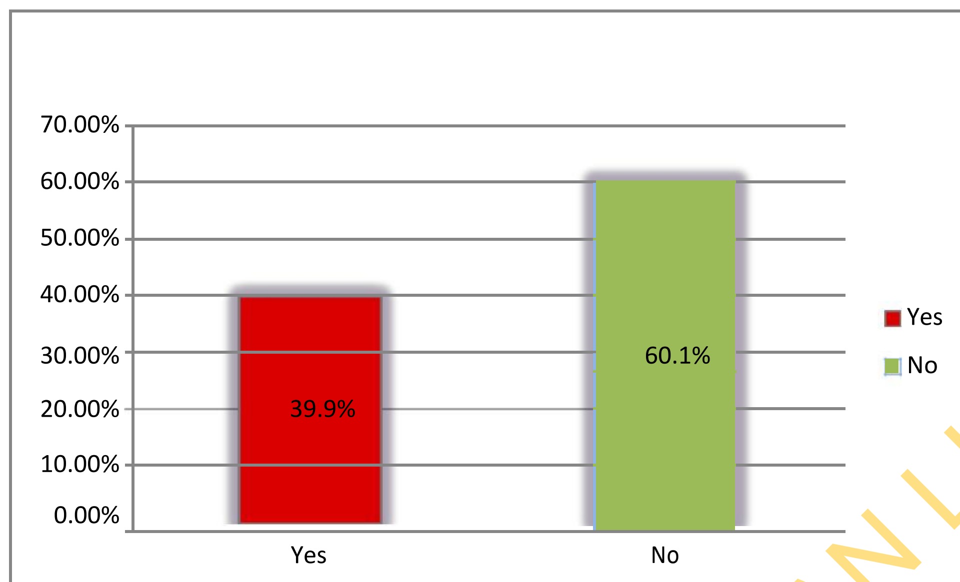

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Table 4.2: Socio-economic and psychological problems associated with adolescent gambling (N=135)

Variable	Yes	No
	n (%)	n (%)
Social and financial pressure	59 (43.7)	76 (56.3)
Feeling that the frequency of gambling is normal	88 (65.2)	47 (34.8)
Feeling the pressure to gamble when not gambling	48 (35.6)	87 (64.4)
Feeling guilty about gambling	60 (44.4)	75 (55.5)
Family members worry or complain	72 (53.3)	63(46.7)
Problems between family members and friends	50 (37)	85 (63)
Got into trouble at school because of gambling	39 (29)	96 (71)
Neglected obligations because of gambling	98 (73)	37 (27)
Arrested for gambling	50 (37)	85 (63)
Gambling increasingly larger amount to experience desired excitement	66 (49)	69 (51)
Feeling that the same amount of gambling has less effect	43 (32)	92 (68)
Feeling restless as a result of stopping to gamble	66 (49)	69 (51)
Gambling to reduce uncomfortable feeling	47 (35)	88 (65)
Gambling to escape from problems	66 (49)	69 (51)
Returned to gambling to win back lost money	92 (68)	43 (32)
Lied to family members to conceal gambling extent	52 (38.5)	83 (61.5)
Committed any illegal act just to gamble	54 (40)	81 (60)
Lost something significant because of gambling	47 (34.8)	88 (65.2)

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Section three

4.3: Prevalence of mental health problems among adolescents in Port Harcourt

The result shows that 31.1% of the respondents have anxiety, 19.2% have depression, 13.0% engage in harmful alcohol use and 16.9% have conduct problems. See Table 4.3a for details on the prevalence of mental health problems and 4.3b for details on the severity of mental health problems among adolescents in Port Harcourt.

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Table 4.3a: Prevalence of mental health problems among adolescents in Port Harcourt (N=338)

Variables	Prevalence n (%)
Anxiety	
None + Mild (Non-cases)	233 (68.9)
Moderate + Severe (Cases)	105 (31.1)
Depression	
None + Mild (Non-cases)	273 (80.8)
Moderate + Severe (Cases)	65 (19.2)
Alcohol use	
Non-harmful use	294 (87)
Harmful use	44 (13)
Conduct problems	
No conduct problem	281 (83.1)
Conduct problem	57 (16.9)

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Fig 4.2 Prevalence of mental problems among the study participants

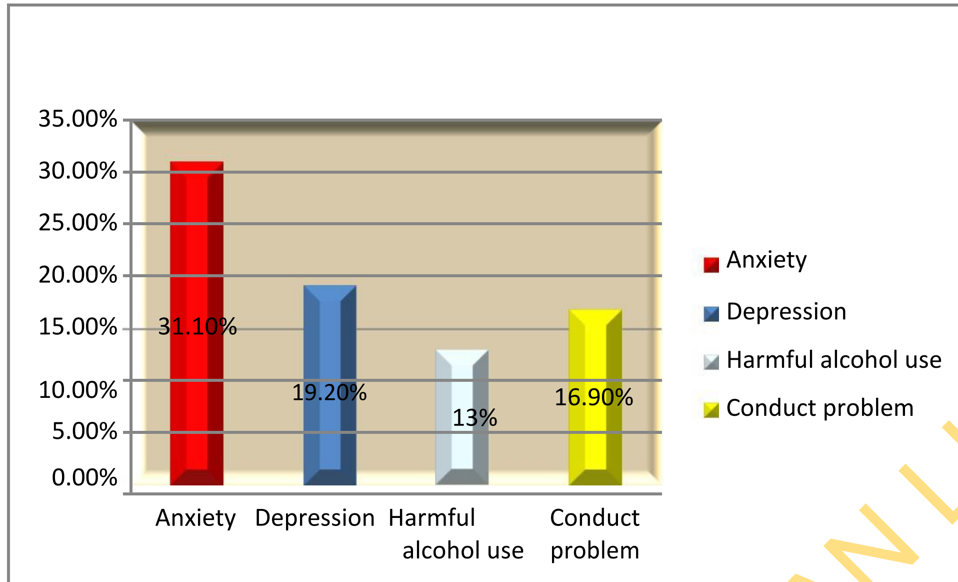

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Table 4.3b: Comparison of mental health problems among gambling and non-gambling adolescents in Port Harcourt (N=338)

Variable	General Study population	Gambling	Non-gambling
	(N=338)	(N=135)	(N=203)
Anxiety	31.1%	16.8%	14.3%
Depression	19.2%	12.4%	6.8
Harmful Alcohol use	13%	11.5%	1.5%
Conduct problem	16.9%	14.8%	2.1%

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Section Four

4.4 Socio-demographic correlates of gambling

The result shows an association between gambling and participants' family type ($P<0.05$), gambling and the marital status of the participants' parents ($P<0.05$) and gambling and doing extra work to earn money ($P<0.05$). See tables 4.4 for details.

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Table 4.4: Socio-demographic correlates of adolescent gambling in Port Harcourt (N=338)

	Have you ever gambled?				
	Yes	**No**	**Total**	x^2	**p**
	n (%)	**n (%)**	**n (%)**		
Age (years)					
10-13	12 (29.3)	29 (70.7)	41 (100)		
14-16	82 (37.3)	138 (62.7)	220 (100)	8.283	**0.016**
17-19	41 (53.2)	36 (46.8)	77 (100)		
Gender					
Male	92 (50.3)	91 (49.7)	183 (100)	17.760	**0.000**
Female	43 (27.7)	112 (72.3)	155 (100)		
Family type					
Monogamous	71 (30.7)	160 (69.3)	231 (100)	25.774	**0.000**
Polygamous	64 (59.8)	43 (40.2)	107 (100)		
Parents' marital status					
Married	72 (34)	140 (66)	212 (100)		
Separated/Divorced	15 (35.7)	27 (64.3)	42 (100)		
Father is dead	16 (43.2)	21 (56.8)	37 (100)	20.108	**0.000**
Mother is dead	12 (60)	8 (40)	20 (100)		
Mother and father dead	20 (74.1)	7 (25.9)	27 (100)		
Do you work to earn money?					
Yes	50 (61.7)	31 (38.3)	81 (100)	21.081	**0.000**
No	85 (33.1)	172 (66.9)	257 (100)		

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Section Five

4.5 Association between mental health problems and gambling among adolescents in Port Harcourt

The result shows a statistically significant association between gambling and anxiety, depression, alcohol use and conduct problems, $p<0.05$. See table 4.5 for details

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Table 4.5: Mental health correlates of gambling among adolescents (N=338)

	Have you ever gambled?				
	Yes	**No**	**Total**	x^2	**p**
	n (%)	**n (%)**	**n (%)**		
Anxiety					
No Anxiety	33 (25.2)	98 (74.8)	131 (100)		
Mild	45 (44.1)	57 (55.9)	102 (100)	22.812	**0.000**
Moderate	44 (51.8)	41 (48.2)	85 (100)		
Severe	13 (65)	7 (35)	20 (100)		
Depression					
No Depression	52 (27.1)	140 (72.9)	192 (100)		
Mild	41 (50.6)	40 (49.4)	81 (100)	33.936	**0.000**
Moderate	37 (66.1)	19 (33.9)	56 (100)		
Severe	5 (55.6)	4 (44.4)	9 (100)		
Alcohol use					
Non Harmful use	96 (32.7)	198 (67.3)	294 (100)	50.004	**0.000**
Harmful use	39 (88.6)	5 (11.4)	44 (100)		
Conduct problem					
No conduct problem	85 (30.2)	196 (69.8)	281 (100)		
Conduct problem	50 (87.7)	7 (12.3)	57 (100)	65.246	**0.000**
Self-esteem					
High	53 (29.1)	129 (70.9)	182 (100)	19.245	**0.000**
Low	82 (52.6)	74 (47.4)	156 (100)		

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Section six

4.6 Association between self-esteem and gambling among adolescents in Port Harcourt

The study shows that a statistically significant difference exists between the self-esteem scores of adolescents. The result shows that 182 (53.8%) adolescents reported high self-esteem, and 156 (46.2%) adolescents reported low self-esteem, $p<0.05$. See Table 4.6 below

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Table 4.6: Self-esteem correlates of gambling among adolescents in Port Harcourt (N=338)

	Have you ever gambled?				
	Yes	**No**	**Total**	X^2	**P**
	n (%)	**n (%)**	**n (%)**		
Self-esteem					
High	53 (29.1)	129 (70.9)	182 (100)	*19.245*	**0.000**
Low	82 (52.6)	74 (47.4)	156 (100)		

Total word count……500

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CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

5.1.0 Discussion

This study was a descriptive cross-sectional survey, to evaluate the prevalence and mental health correlates of gambling among adolescents in Port Harcourt. Several studies on gambling and pathological gambling have been conducted globally among adults and adolescents, majority of the studies were conducted in Asia, Europe and the United States. Also, a few adolescent gambling studies have been conducted in West Africa, particularly in Nigeria. This made it a research priority, especially as it would elicit knowledge about adolescent gambling in the region. This study was conducted among 338 in-secondary school students in Port Harcourt and the results provide a useful contribution to the literature on the prevalence and mental health correlates of adolescent gambling in Port Harcourt, Nigeria. This chapter will present the implications of the results and proffer explanations for the findings in the light of past studies.

5.1.1 The Socio-demographic characteristics of respondents

The socio-demographic characteristics of respondents revealed that the percentage of males who participated in this study was 54.1%. This is in agreement with previous studies on gambling which suggest that males are more likely than females to engage in gambling (Huic *et al.,* 2017) and (Calado and Griffiths, 2016). The result also shows that 95.6% of the respondents were Christians. This is palpable because Christianity is the predominant religion that is practiced in the region where this study was conducted. Furthermore, 68.3% of the respondents were from monogamous families. This may have resulted from the fact that majority of the respondents and their families practice Christianity. Kostenberger and Jones (2010) in a book titled ―God,

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Marriage and Family‖, reported that the initial marriage plan of God for man was ―One man, one wife‖. This corroborates the marriage lifestyle of the people of Port Harcourt. It is also possible that though majority of the respondents and their families are Christians; some of their family structures are polygamous. The foregoing is evident in the findings of this study that about 31.7% of the respondents come from polygamous families. The result of this study also shows that (24.0%) of the adolescents do extra works to earn money. This may have been triggered by the urban nature and structure of Port Harcourt. Adolescents may have needs and may go ahead to look for ways to attend to those needs either through hawking of perishable goods on the street or doing some other petty works before or after school to meet their needs. It may have also been triggered by the inability of their parents to attend to their needs, which may on the long run, culminate into strained and or disruptive family relationships, and the cycle may continue if proper care is not taken (Secades-Villa *et al.*, 2016). This study findings also show that 220 (65.1%) were in their middle adolescence, which corroborates the findings from previous studies that early adolescents were less likely to engage in gambling compared with the middle and late adolescent age groups (Abdi, Ruiter and Adal, 2015); (Secades-Villa *et al.*, 2016) and (Floros, 2017).

5.1.2 The prevalence of gambling among adolescents

The result shows that the prevalence of adolescent gambling is 39.9%; this is in consonance with the findings from previous studies. A systematic review by Calado and Griffiths, (2016) found that approximately 30-80% of adolescents gambled in the past year or may gamble throughout life. It also agrees with the findings of Abdi, Ruiter and Adal, (2015) that about 307 students out of 422 (73%) students in Ethiopia reported that they have gambled or currently engage in gambling. There are several other studies on gambling prevalence which focused on the adult

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population as opposed the adolescent which was considered in this study. A study conducted in the United states found that gambling begins during adolescence, with 68% of adolescents in the United States of America (USA) between the ages of 14–21 years reporting that they had gambled in the past year (Storr *et al.*, 2012).

The findings of this study also shows that some of the respondents who reported to have gambled also reported some socio-economic and psychological problems like social and financial pressure, feeling guilty about gambling, complaints from friends and family members, getting into trouble at school, neglecting obligations because of gambling among other problems. This supports the findings from previous studies Abdi, Ruiter and Adal, (2015). Some of the socio-economic and psychological problems listed previously may have arisen as a result of the widespread and availability of gambling facilities in the region and the glamorization and acceptance of gambling as a normal behaviour, notwithstanding the mental health consequences. It may also be a function of the influence of their peers; this is because while some adolescents decide to quit gambling, some of their friends encourage them to give another try, some friends may even offer to add up to what they have to enable them continue the stakes. This means that peer affiliations and social norms may likely influence the adolescent‘s decision to gamble (Abdi, Ruiter and Adal, 2015) and (Weinberger et al., 2015)

5.1.3 The prevalence of mental problems among adolescents in Port Harcourt

The prevalence of the mental health problems among adolescents in Port Harcourt as revealed by this study may be a function of several factors which could include the norms of classification, socio-demographic characteristics of the respondents and environmental factors (Weinberger et al., 2015). Currently, a lot of families find it difficult to feed or even attend to the daily needs of the children. It may also be explained in terms of the ―metropolitan‖ nature of the study location,

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some adolescents may want to cease the opportunity of the industrial nature of their base or setting by engaging in activities that are perceived to ―bring money‖ which may have been caused by the widespread poverty that is faced in some families. These activities may turn out to bring money as they initially expected or may also not yield a dime; any of the situations explained previously may expose the adolescents to mental health problems because, the adolescents may be anxious while expecting the outcome of such activity or they may be moody or depressed if the activity does not turn out with the perceived outcome. This corroborates the findings of Abdi, Ruiter and Adal, (2015) and Weinberger et al., (2015) that, environmental factor and family structures and functions may influence the adolescent‗s gambling engagement. Adolescents may also engage in risky behaviours such as trying out new things, acting on impulse. Some of the adolescents who participated in the study were of the opinion that the items on the Strength and Difficulty Questionnaire which measured conduct problems were not strong enough to measure conduct problems; instead they saw the items as ―normal‖ for every adolescent in the region. Their thoughts and perceptions may have been triggered by the nature of their social environments.

5.1.4 The socio-demographic correlates of gambling

This study reveals that males are more likely than females to engage in gambling. This agrees with the findings of Huic *et al.,* (2017) in a study conducted among Croatian female adolescents. The foregoing corroborates the social perception of people about gambling, as it is believed that gambling is for the males and not the females. This study also reveals an association between gambling, family structure and working to earn money, ($p<0.05$). The is in agreement with the findings of Weinberger et al., (2015) in the study that was conducted among high school students in Connecticut, which found that family structure and function may influence adolescent

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gambling behaviour. Some of the adolescents who participated in this study reported that they live with persons who are not their parents, some live with one of their parents who is married to another person, others do not even have a parent figure. This outcome may have arisen as a result of the high level of widespread poverty, less attention given by parents to children‘s needs, child fostering, death of a parent, single parenthood or divorce among other factors which are likely to contribute to the child‘s struggle for survival; hence, the need to gamble.

5.1.5 The association between mental problems and adolescent gambling

This study revealed an association between anxiety and gambling ($p<.05$). This agrees with the finding of Van Rooij *et al.*, (2014), in a study conducted among secondary school students in 13 schools in the Netherlands. The study found that higher problematic gamblers had higher scores of social anxiety. Just like it is very natural for everyone to get tensed before and or after any presentation such as an interview or examination, gamblers may also feel tensed while they expect the outcome of their stake, which may be seen as staying away from social gatherings. This, in a way makes them to focus on the outcome of their stakes.

The result of this study also shows an association between depression and gambling ($p<.05$). This is in consonance with the findings of previous studies. Cavallo, Krishnan-sarin and Potenza, (2013) in a study conducted in Connecticut among high school adolescents found that problem gamblers are more likely to report dysphoria/depression.

The findings of this study also show that an association exist between alcohol use and gambling ($p<.05$). This finding agrees with the findings of Lynch, Maciejewski and Potenza, (2004) in the study which was conducted in the United states among 534 adolescents and 2,417 adults, which found that adolescent gamblers are more likely to report alcohol use than adolescent non

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gamblers. The resulting consonance may have arisen as a result of the culture and lifestyle of the people in the study location. The exploratory nature of adolescents which is characterised by risky behaviours and impulsivity among others may have also been a precipitating factor of adolescent alcohol use (National Institute on Alcohol abuse and Alcoholism, 2006). The foregoing may be the same for Nigerian because there are no functional or legal rules governing the use of alcohol, hence, some adolescents find and use it without regarding the legal, physical, psychological and the health implications that may be associated.

The result of this study further showed an association between conduct problems and gambling, ($p<.05$), This agrees with the findings of Kong *et al.*, (2014) in a cross-sectional survey among high school students in Connecticut, which found that gamblers were more likely to engage in serious fights and also carry weapons. This situation is common with offline gamblers who are very conscious of their gambling settings, when a gambler notices any foul play, he resorts into physical combat in order to secure or protect his wagered material or asset. Additionally, Cultural beliefs and practices vary from place to place, some beliefs lay a great emphasis on basic behavioural dispositions like ―Doing things the way you are told to do them‖, ―being accused of lying‖, ―taking something which doesn‛t belong to you‖ among others, whereas some other cultures do not. Majority of the adolescents who participated in this study observed that the items which measure conduct problems on the Strength and Difficulty Questionnaire were ―normal‖ and ―part of every growing child and adolescent‖, this further explains that the severity of the items were based on the British norm.

The foregoing may have also underwritten to the prevalence of conduct problems among the adolescents in Port Harcourt who participated in this study. This is because; the classification of

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the severity of conduct problems according to the Strength and Difficulty Questionnaire was based on the British norm (Goodman *et al,* 1997).

In summary, though some gamblers exhibit mental health problems such as identified in this study as a result of gambling, others may have similar problems, and which may have been caused by other factors such as socio-demographic and environmental characteristics.

Some of the adolescents who reported gambling also reported some mental health problems as well as low self-esteem compared with the non-gambling adolescents. This may be because of several different family compositions and the level of widespread poverty in the country which makes some parents to be incapacitated in terms of attending to the needs of their children. Some adolescents may have also given up or lost interest in becoming something useful to themselves and the wider society which is made visible in their self-esteem scores. It is also very evident that the socio-demographic characteristics of the participants also influenced their gambling behaviour.

5.2 Limitations of the study

The ―Massachusetts Gambling Scale‖ which was used to assess the presence or absence of gambling was not culturally adapted as respondents needed extra explanations and clarifications about the terms that are utilized in the instrument.

Majority of the private schools were reluctant to allow their students to participate in the study.

It was difficult to recruit female participants as some of them said gambling is for the males alone.

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5.3 Conclusion

This study has showed that some of the adolescents in Port Harcourt engage in gambling and the prevalence is high. The study also showed that those adolescents who are involved in gambling reported to have mental problems and low self-esteem, compared to their peers who do not gamble. The findings of this study also showed that an association exists between gambling and some socio-demographic characteristics such as the family types, gender, doing extra works to earn money and the marital status of the adolescents‘ parents. The findings of this study also showed an association between gambling and mental problems such as anxiety, depression, harmful alcohol use and conduct problems. Though a relationship exists between gambling and mental health problems, not all the adolescents who gamble will have mental health problems. Furthermore, the findings of this study show an association between gambling and low self-esteem. Summarily, this study findings show that the associations between gambling and socio-demographic characteristics and gambling and mental health problems are not peculiar to the adolescents who gamble, those who do not gamble also reported some these problems but not as high as those who gamble.

5.4 Recommendations

1. Culturally appropriate and context-specific instruments should be developed for research in gambling in Nigeria, this will enable an appropriate measurement and determination of the prevalence of gambling in Nigeria. Furthermore, future studies may focus specifically on pathological gambling to delineate the extent of the problem and the need for interventions.
2. As part of the school health programme, teachers should be trained on how to use short screening instruments to screen the students of anxiety, depression and conduct problems.

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3. Public awareness campaigns to counter the glamorization of gambling among adolescents and young persons should be promoted; this will inform the general public on the association between gambling and mental health problems.

Total word count……3,160

Grand total word count………..14,844

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Appendices

CONSENT/ASSENT FORM

I am a post graduate student of Child and Adolescent Mental Health in the Centre for Child and Adolescent Mental Health, University of Ibadan. I am conducting a research titled ―Mental health correlates of gambling among adolescents in Port Harcourt, Nigeria‖? Previous studies have shown that a vast majority of adolescents globally engage in gambling and they may be prone to mental health problems. Do the adolescents in Port Harcourt gamble, what‗s the proportion? What are the mental health correlates of gambling in this population? The study‗s aim is to get answers to the above questions. Questionnaires will be used to get information from you. Ethical approval and permission has been given by the Rivers State Ministry of Health and Education respectively. Remember that you have no direct benefit from this research but any information you supply may aid policy. Your information will be treated with uttermost confidentiality and your participation in this research ends immediately you fill up the questionnaire; you may also decline your participation if you want to.

I have read the foregoing information and all the questions I asked about the research have been answered. I hereby consent that my ward should participate voluntarily in this study.

_____________________________ _____________________________

SIGNATURE OF PARTICIPANT'S GUARDIAN **RESEARCHER'S SIGNATURE**

____

DATE

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CONSENT\ASSENT FORM

I have read the information about the research and all the questions I asked have been answered. I hereby give assent to voluntarily participate in this study.

PARTICIPANT'S SIGNATURE **RESEARCHR'S SIGNATURE**

____

DATE

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Serial Number__________________

CENTRE FOR CHILD AND ADOLESCENT MENTAL HEALTH, UNIVERSITY OF IBADAN, IBADAN, NIGERIA

PREVALENCE AND MENTAL HEALTH CORRELATES OF GAMBLING AMONG IN-SCHOOL ADOLESCENTS IN PORT HARCOURT

This questionnaire is strictly designed for research purpose and it aims to assess the mental health correlates of gambling among adolescents in Port Harcourt. I assure you that any information given by you will be treated with uttermost confidentiality. Your sincere response to each of the questions is highly required.

SECTION ONE

Please write the answers to the questions as they apply to you.

PERSONAL INFORMATION

1. What is the name of your school? ____________________________________
2. What class are you? ____________________________________
3. Where do you live currently? ________________________________
4. What is your date of birth? Day/Month/Year______________________
5. How old are you? _________
6. Are you a boy or a girl? __________________
7. Do you practice a religion? ________
8. If you practice a religion, please write down the type of religion ______________

FAMILY INFORMATION

9. What is your family type? ________________________
10. What is the number of your mother's children? ______________
11. What is the number of your father's children? _______________
12. What is your position among your mother's children? _______________
13. What is your position among your father's children? _________________
14. What is the marital status of your parents? ________

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(a) Married (b) Separated/Divorced (c) Father is dead (d) Mother is dead (e) Mother and Father are dead

15. Who do you live with presently? ____________________

(a) Parents (b) Mother (c) Father (d) grandparents (e) Grandmother (f) Grandfather (g) Others, Please specify _________________________

16. Do you work to earn money? _____________

If yes, please describe what you do

17. What is your father's level of education? __________________________

18. What is your father's occupation? _________________________

19. What is your mother's level of education? ___________________

20. What is your mother's occupation? ___________________________

SECTION TWO

GAMBLING

Please circle the response that best represents your answer. You may skip to 29 if you have never gambled

Question **Response**

21. Have you ever gambled (for example, bet money on the lottery, sporting events, casino games, cards, racing or other games of chance)? Yes No

22. Have you ever experienced social, psychological or financial pressure to start gambling or to increase how much you gamble? Yes No

23. How much do you usually gamble compared to most other people? Less/About the same/More

24. Do you feel that the amount or frequency of your gambling is normal? Yes No

25. Do friends or relatives think of you as a normal gambler? Yes No

26. Do you ever feel pressure to gamble when you do not gamble? Yes No

27. Do you ever feel guilty about your gambling? Yes No

28. Does any member of your family ever worry or complain of your gambling? Yes No

29. Have you ever thought that you should reduce or stop gambling? Yes No

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30. Are you always able to stop gambling when you want? Yes No
31. Has your gambling ever created problem between you and any member of your family or

friends? Yes No **32.** Have you ever gotten into trouble at school because of your gambling? Yes No

33. Have you ever neglected your obligations (eg. Family, work or school) for two or more days in a row because you were gambling? Yes No

34. Have you ever gone to anyone for help about your gambling? Yes No

35. Have you ever been arrested for a gambling related activity? Yes No

36. Have you been preoccupied during the past 12 months with thinking of ways to get money for gambling or reliving past gambling experiences (eg. Handicapping or selecting a number)? Yes No

37. During the past 12 months, have you gambled increasingly larger amount of money to experience your desired gambling excitement? Yes No

38. During the past 12 months, did you find that the same amount of gambling had less effect on you than before? Yes No

39. Has stopping gambling or cutting down how much you gamble made you feel restless or irritable during the past 12 months? Yes No

40. During the past 12 months, did you gamble to reduce any uncomfortable feelings (eg. Restlessness or irritability) that resulted from having previously stopped or reduced gambling? Yes No

41. Have you gambled as a way of escaping from problems or reliving feelings of helplessness, guilt, anxiety or depression during the past 12 months? Yes No

42. During the past 12 months, after losing money gambling, have you returned to gambling on another day to win back your lost money? Yes No

43. Have you lied to family members or others to conceal the extent to which you have been gambling in the past 12 months? Yes No

44. Have you committed any illegal acts (eg. Forgery, fraud, theft, embezzlement, etc) during the past 12 months to finance your gambling? Yes No

45. During the past 12 months, have you jeopardized or lost a significant relationship, job, educational or career opportunity because of your gambling? Yes No

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46. During the past 12 months, have you relied on other sources (eg. Family, friends, co-workers and bank) to provide you with money to resolve a desperate financial situation caused by your gambling? Yes No

47. During the past 12 months, have you made efforts unsuccessfully to limit, reduce of stop gambling? Yes No

48. How old were you when you placed your first bet? _____________________

49. How honest were your response to each of the questions on this survey?

Not at all honest / Somewhat dishonest / Somewhat honest / Very honest

SECTION 3

SELF-ESTEEM

Below is a list of statements that explain the general feelings about yourself, please circle the option that best describes your answer. SA = strongly agree, A = agree, D= disagree SD= strongly disagree

50. On the whole, I am satisfied with myself	SA	A	D	SD
51. At times, I think I am not good at all	SA	A	D	SD
52. I feel that I have a number of good qualities	SA	A	D	SD
53. I am able to do things as well as most other people	SA	A	D	SD
54. I feel I do not have much to be proud of	SA	A	D	SD
55. I certainly feel useless at times	SA	A	D	SD
56. I feel that I am a person of worth at least on an equal plane with others	SA	A	D	SD
57. I wish I could have more respect for myself	SA	A	D	SD
58. All in all, I am inclined to feel that I am a failure	SA	A	D	SD
59. I take a positive attitude toward myself	SA	A	D	SD

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SECTION 4

ALCOHOL USE

Please read the questions carefully and mark X in the option that best describes your

Questions	**0**	**1**	**2**	**3**	**4**
60. How often do you have a drink containing alcohol?	Never skip to 9-10	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
61. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
62. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Week ly	Daily or almost daily
63. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Week ly	Daily or almost daily
64. How often during the last year have you failed to do what was normally expected from you because of drinking?	Never	Less than monthly	Monthly	Week ly	Daily or almost daily
65. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Week ly	Daily or almost

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					daily
66. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
67. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
68. Have you or someone else been injured as a result of your drinking?	No	Yes but not in the last year	Yes, during the last year		
69. Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?	No	Yes but not in the last year	Yes, during the last year		

SECTION 5

ANXIETY AND DEPRESSION

Please tick (√) the option that best describes your answer

Questions

70. I feel tense and ‗wound up‘

(3) Most of the time

(2) A lot of the time

(1) From time to time (occasionally)

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(0) Not at all

71. I get a sort of frightened feeling as if something awful is about to happen

(3) Very definitely and quite badly

(2) Yes, but not too badly

(1) A little but it doesn't worry me

(0) Not at all

72. Worrying thoughts go through my mind

(3) A great deal of the time

(2) A lot of the time

(1) From time to time but not often

(0) Only occasionally

73. I can sit at ease and feel relaxed

(0) Definitely

(1) Usually

(2) Not often

(3) Not at all

74. I get a sort of frightened feeling like _butterflies' in the stomach

(3) Nearly all the time

(2) Very often

(1) Sometimes

(0) Not at all

75. I feel restless as I have to be on the move

(3) Very much indeed

(2) Quite a lot

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(1) Not very much

(0) Not at all

76. I get sudden feelings of panic

(3) Very often indeed

(2) Quite often

(1) Not very often

(0) Not at all

77. I still enjoy the things I used to enjoy

(0) Definitely as much

(1) Not quite as much

(2) Only a little

(3) Hardly at all

78. I can laugh and see the funny side of things

(0) As much as I always could

(1) Not quite as much now

(2) Definitely not as much now

(3) Not at all

79. I feel cheerful

(3) Not at all

(2) Not often

(1) Sometimes

(0) Most of the time

80. I feel as if I am slowed down

(3) Nearly all the time

(2) Very often

(1) Sometimes

(0) Not at all

81. I have lost interest in my appearance

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(3) Definitely

(2) I don‘t take as much care as I should

(1) I may not take quite as much care

(0) I take just as much care

82. I look forward with enjoyment to things

(0) As much as I ever deed

(1) Rather less than I used to

(2) Definitely less than I used to

(3) Hardly at all

83. I can enjoy a good book or radio/TV programme

(0) Often

(1) Sometimes

(2) Not often

(3) Very seldom

SECTION 6

BEHAVIOUR

Please mark X in the response that best describes your answer

Questions	**Answers**		
84. I get very angry and often lose my temper	Not true	Somewhat true	Certainly true
85. I usually do as I am told	Not true	Somewhat true	Certainly true
86. I fight a lot, I can make other people do what I want	Not true	Somewhat true	Certainly true
87. I am often accused of lying and cheating	Not true	Somewhat true	Certainly true
88. I take things that are not mine from home, school, or elsewhere.	Not true	Somewhat true	Certainly true

Thank you for your patience in completing this questionnaire.

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GOVERNMENT OF RIVERS STATE OF NIGERIA

OFFICE OF THE PERMANENT SECRETARY

RIVERS STATE MINISTRY OF EDUCATION, RIVERS STATE SECRETARIAT COMPLEX, PORT HARCOURT

List of public secondary schools in Port Harcourt and Obio-Akpor local government areas

PORT HARCOURT LOCAL GOVERNMENT AREA (PHALGA)

Government Comprehensive Secondary	Borikiri, Port Harcourt
School Enitonna High School (Boys)	Borikiri, Port Harcourt
Government Secondary School Baptist High	Amadi-ama, Port Harcourt
School (Boys) Government Girls Secondary	Borikiri, Port Harcourt
School Government Girls Secondary School	Abuloma, Port Harcourt
	Orominieke, Port Harcourt

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OBIO-AKPOR LOCAL GOVERNMENT AREA (OBALGA)

Name of School	Address
Government Secondary School Niger	Eneka, Obio-Akpor
Delta Science School Government	Rumola, Obio-Akpor
Secondary School Government	Rumuepirikom, OBALGA
Secondary School Government Girls'	Nkpolu, Obio-Akpor
Secondary School Government	Rumuokwuta, OBALAGA
Secondary School Government	Ozuoba, Obio-Akpor
Secondary School Government Girls	Rumuolumeni, Obio-Akpor
Secondary School Government	Rumuokoro, Obio-Akpor
Secondary School	Rumuapara, Obio-Akpor

List of private secondary schools in Port Harcourt and Obio-Akpor local government areas

PORT HARCOURT LOCAL GOVERNMENT AREA

Name of School	Address
Kenneth commercial and Technical college	Diobu, Port Harcourt
RSUST Demonstration Sec. Sch.	Diobu, Port Harcourt
Joemax Secretarial Institute of Commerce	Elekahia, Port Harcourt
Tago educational Centre	Abuloma, Port Harcourt

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Allenco Comprehensive College	Diobu, Port Harcourt
Midtown College	Diobu, Port Harcourt
Niger Grammar School	D/Line, Port Harcourt
Lolo Comprehensive Secondary School	Diobu, Port Harcourt
Ojims College	Diobu, Port Harcourt
National Professional Secondary School	Port Harcourt
Emarid College	Port Harcourt
Lao Russel Memorial Secondary School	Port Harcourt
Our Lady of Fatima College	Port Harcourt
Aladumo High School	Port Harcourt
Tantua Intl. High School	Port Harcourt
New Covenant Secondary School	Port Harcourt
Levinda College	Port Harcourt
Christ the King College	Port Harcourt
Beryl Comprehensive College	Port Harcourt
Philip Academy	Port Harcourt
Starlets Academy	Port Harcourt
The Light Secondary School	Port Harcourt

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Base Comprehensive College	Port Harcourt
Iverock College	Port Harcourt
Methodist Comprehensive High School	Port Harcourt
Green field Academy	Port Harcourt
Faith Baptist College	Port Harcourt
Dave International Secondary School	Port Harcourt
Graceland International Secondary School	Port Harcourt
Dietams International Secondary School	Port Harcourt
St. Mary's Catholic Model School	Port Harcourt
Millennium High School	Port Harcourt
Stepping Stone East High School	Port Harcourt
Methodist Girls High School	Port Harcourt

OBIO-AKPOR LOCAL GOVERNMENT AREA

Name of School	Address
Sacred Heart Seminary College	Obio-Akpor
Commerce and Industry Trade Centre	Obio-Akpor
Lincoln Comprehensive College	Obio-Akpor

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Brain field Secondary School	Obio-Akpor
Hallel College	Obio-Akpor
Bishop Crowther Memorial School	Obio-Akpor
Chucks Comprehensive College	Obio-Akpor
Bereton College	Obio-Akpor
Uniport Demonstration Secondary School	Obio-Akpor
Jephtha Comprehensive Secondary School	Obio-Akpor
First International Academy	Obio-Akpor
Istan Comprehensive High School	Obio-Akpor
Benviato Secondary School	Obio-Akpor
Faith International College	Obio-Akpor
Royal Girls Academy	Obio-Akpor
Salvation High Secondary School	Obio-Akpor
Holy Child College	Obio-Akpor
Redemption Secondary School	Obio-Akpor
Tender foot Secondary School	Obio-Akpor
Victory Comprehensive College	Obio-Akpor
Glorious Child International College	Obio-Akpor

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Blessed Comprehensive Secondary School	Obio-Akpor
Titi Trinity College	Obio-Akpor
Success Comprehensive High School	Obio-Akpor
Salem College	Obio-Akpor
Olobo Premier College	Obio-Akpor
Grace field Academy	Obio-Akpor
City Model College	Obio-Akpor
Perfect International Secondary School	Obio-Akpor
King David College	Obio-Akpor
Mary Gold International School	Obio-Akpor
Grace life Missionary Secondary School	Obio-Akpor
Merit International School	Obio-Akpor
Covenant Academy	Obio-Akpor
First fruit Christian Academy	Obio-Akpor
Nobel Academy	Obio-Akpor
Rosysteps International School	Obio-Akpor

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