THE RELATIONSHIP BETWEEN DEVELOPMENTAL CAPACITATION, PEER PRESSURE AND SEXUAL RISK TAKING BEHAVIOR AMONG SECONDARY SCHOOL ADOLESCENTS IN KISUMU MUNICIPALITY, KENYA

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DECLARATION

This thesis is my original work and has not been presented for award of a degree in any other university/institution.

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DEDICATION

This thesis is dedicated to the memory of my late husband, Dr. Njau Mwai, who planted in me the seed of curiosity to search more in books.

And

To my lovely daughters, Sharie and Lynne who inspire my quest for new knowledge every day.

ABSTRACT

Sexual risk taking behavior among adolescents remains an area of interest due to its potential detrimental consequences. Researchers have pointed out that impulsivity and sensation seeking are possible expediters of adolescent sexual risk taking behavior both of which are developmentally capacitated, and whose influence may be catalyzed by peer pressure that increases during this period. In Kisumu municipality, sexual risk taking behavior among adolescents has been reported as the major contributors to the high HIV/AIDS prevalence which stands at 15 % against the national prevalence of 5.1%. Despite available evidence on the possible links, there still exists limited knowledge on the relationship between developmental capacitation and sexual risk taking as well as the mediating role of peer pressure. The purpose of the study was to examine the relationship between developmental capacitation, peer pressure and sexual risk taking among secondary school adolescents. The objectives of the study were to determine the relationship between; adolescents' developmental capacitation and sexual risk taking, determine the relationship between susceptibility to peer pressure and sexual risk taking, examine the relationship between developmental capacitation and susceptibility to peer pressure and to determine the mediation effects of peer pressure on the relationship between developmental capacitation and sexual risk taking. The study adopted descriptive survey and correlation research designs. From the study population of 10,278 secondary school students in 31 secondary schools in Kisumu Municipality, a sample size of 384 students was selected using stratified random sampling based on type of school. Ten School counselors and 10 Deputy head teachers of the sampled schools were the key informants. Data was collected using Barrat Impulsivity Scale 11, Sensation Seeking Scale V, Peer Pressure Inventory, Risky Sexual Behavior Indulgence Scale, interview schedule for school counselors and deputy head teachers and two focused group discussions. Reliability of the instruments was ascertained using Cronbach's alpha and α value of .81, .74, .69 and .79 were obtained for the five scales respectively. Content validity was established through subjecting the instruments to expert opinions of members of the department of Educational Psychology. SPSS and AMOS application packages were used to run logistic regression analyses and Structural Equation Modeling respectively. Study findings indicated a significant relationship between developmental capacitation and sexual risk taking, which varied across the genders. Sensation seeking was a better predictor of sexual risk taking among male adolescents (OR=1.847 (CI 95 %: 1.011-3.373)) while impulsivity was better predictor among the female adolescents (OR=2.023 (CI 95%: 1.123-3.647)). There was a positive significant relationship between susceptibility to peer pressure and sexual risk taking except for family and school involvement. Family involvement significantly predicted sexual risk taking among male adolescents (OR=.488(CI 95 %: .305-.783)) while misconduct made significant prediction of sexual risk taking among the female adolescents (OR= 2.847(CI 95%:1.484-5.558)). Developmental capacitation was positively and significantly correlated to all indicators of susceptibility to peer pressure except family involvement and school involvement. Peer pressure partially mediated the relationship between developmental capacitation and sexual risk taking behavior. The study recommended that behavioral strategies developed for secondary school adolescents should be gender differentiated and that peer group is a useful entry into addressing sexual risk taking challenges. These findings are useful to educational and youth stakeholders in designing appropriate preventive educational intervention programs to address adolescents' sexual risk taking behavior.

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ABBREVIATIONS AND ACRONYMS

AIDS – Acquired Immune Deficiency Syndrome

AMOS – Analysis of Moment Structures

APHRC – African Population and Health Research Center

BIS 11 – Barrat Impulsivity Scale 11

BS – Boredom Susceptibility scale

CDC – Center for Disease Control

CFA – Confirmatory Factor Analysis

DIS – Dis-Inhibition Scale

ES – Experience Seeking Scale

fMRI – Functional Magnetic Resonance Imaging

GFI – Goodness of Fit Analysis

HIV – Human Immunodeficiency Virus

KDHS – Kenya Demographic Health Survey

KNYP – Kenya National Youth Policy

KR 20 – Kuder Richardson Formula 20

MDGS – Millennium Development Goals

MOH – Ministry of Health

MOYAS – Ministry of Youth Affairs and Sports

NFI – Normed Fit Index

OLS – Ordinary Least Squares

PFC – Prefrontal Cortex

RMSEA – Root Mean Square Error of Approximation

SEM – Structural Equation Modeling

SITAN – Situational Analysis

SRMR – Standardized Root Mean Square Residual

STDs – Sexually Transmitted Diseases

TAS – Thrill Adventure Seeking scale

TLI – Tucker Lewis Index

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Adolescence is a transitional period characterized by heightened potential for recklessness and sexual risk taking behaviors (National Research Council, 2007; Papalia, Olds & Feldman, 2004). Sexual risk taking among adolescents has raised researchers' concern, because of the numerous deaths amongst this particular group related to HIV /AIDS pandemic and increased abortions (Raffaelli & Crocket, 2003). In addition, adolescence is a discovery period characterized by increased propensity towards sexual experimentation that endangers the reproductive health of adolescents (Chege, 2000; Zietsch, Verweig, Bailey, Wright, & Martin, 2010). This increased risk-taking during adolescence can be linked to the developmental changes that accompany this period (Steinberg, Cauffman, Banich, Graham, & Woolard, 2008).

The explanation provided for the propensity towards risk taking links the neurological gap caused by an immature prefrontal cortex (PFC) and a developed limbic system that results into some differential developmental incapacitations among adolescents. These are manifested in risky decision making processes and behaviors that characterizes this particular period in the life cycle (Ben- Zur & Reshef – Kfir, 2003; Bednar & Fisher, 2003); a heightened arousal for risk taking behaviors and a tendency for impulsivity (Steinberg, 2008). Additionally, the differential developmental capacitation also propagates the need for increased sensation seeking (Zuckerman, 1994). This is particularly at a time when their regulatory or impulse control system is not mature enough to regulate this heightened arousal (Acton, 2003; Kershaw, 2003; Arnets & Joiner, 2007; Zuckerman, 1994; Donohew, Zimmerman, Cupps, Novak, Colon,& Abell, 2000). The lack of self-

regulatory systems within adolescents also increases their predisposition towards impulsivity (Acton, 2003; Moeller et al 2001; Donohewet al, 2000).

Winters, Botzet, Falin- Horst, Baumel and Lee (2009), in their study to examine the relationship between impulsivity, risky sexual behaviors and drug abuse among young adults, established that indeed impulsivity is an underlying risk factor for many youth problems including sexual risk behaviors. In their study, where they examined a meditational model of interrelationship of drug use, sexual risk taking and impulsivity, the findings indicated that impulsivity partially mediated the association between drug use and sexual risk behavior. The study found that, adolescents with impulse control problems suffer from deficits in self- regulatory behavioral systems and that when they are faced with risk taking opportunities such as sexual activity, which promise some type of immediate reinforcement, they are more likely to relent to the urge. Among its major recommendations, the study suggested the examination of peer pressure as an important factor influencing the relationship between impulsivity and sexual risk taking.

While providing a deeper examination of impulsivity and sensation seeking across individuals aged 10 to 30 years, Steinberg Cauffman, Banich, Graham & Woolard, (2008) established that impulsivity levels are highest during adolescence when the impulse control system is immature, making adolescence a period of increased vulnerability more than in young adulthood. While the findings of Steinberg et al (2008) provide very useful fundamental basis for this study, it is important to note that their study examined a diverse range of risks undertaken by adolescents such as gambling, decision making and careless driving from a laboratory based experiment on risk taking, the current study sought to examine sexual risk taking as one of the detrimental aspects of

adolescents' risk taking from a real-life perspective by using data on actual risk indulgence. Exploration of sexual risk taking was considered crucial due to increased concerns of its detrimental consequences such as sexually transmitted diseases, unwanted pregnancies, abortions and deaths prevalent among adolescents.

Studies carried out to establish the relationship between sensation seeking and sexual risk taking confirmed that a significant relationship existed. Chandra, Krishna, Benegel and Ramakrishna (2003), in their study to establish the relationship between high risk sexual behavior and sensation seeking affirmed that indeed sensation seeking was an important factor that contributed to high sexual behavior. Similarly, Paydary, Torabi, SeyedAlinaghi, Noori, Norozi, Ameri and Ekhtiari (2016), in their study to examine impulsivity, sensation seeking and risk taking behaviors among HIV positive and HIV negative Heroine dependent users, established that HIV positive individuals scored highly on the Barrat Impulsivity scale as well as on the sensation seeking scale. They concluded that impulsivity and sensation seeking may render individuals susceptible to the practice of more risky behaviors. However, the generalizability of the findings of these studies is limited to heavy alcohol users and heroine dependent persons who formed the sample of their study. The current study sought to establish the relationship between sensation seeking and sexual risk taking among secondary school adolescents as opposed to a drug dependent population.

Evidence from research shows that high sensation seekers are more likely than low sensation seekers to be involved in risky situations (Greene et al, 2000; Donohew et al, 2000). However researchers are quick to point out that although adolescents high on sensation seeking are more likely to indulge in risky sexual behaviors, it is the proportion of them that are impulsive that are

more likely to do so (Donohew et al, 2000: Aguiyi et al, 2010). Consequently the current study proposed to examine the effects of sensation seeking on sexual risk taking behavior alongside impulsivity.

One of the documented evidence on the link between developmental capacitation and sexual risk taking was provided by the study carried out by the US Centre for Disease Control (CDC) survey indicating that college students aged 18 to 24 years frequently engaged in risky sexual behavior probably due to limitations of self-regulatory systems (Rolison & Scherman, 2003). The survey further indicated that in 2009, there was an increase in the number of new HIV infections among adolescents aged 13 –24 years with 34.2% of them reportedly falling in the sexually active group. Of concern were 21% of the sexually active adolescents that reportedly drank alcohol or used illicit drugs before having sex (CDC, 2009). Donohew et al, (2000), in their attempt to understand the increase in risky sexual taking behavior among adolescents in the U.S. , found that impulsive decision making and high sensation seeking behavior were contributing factors to sexual risk taking behaviors that were common amongst adolescents.

Evidently, adolescents' sexual risk taking may be linked to the developmental gap that occurs during puberty which increases their sensation seeking and impulsivity. However, as much as these internal attributes could influence adolescents engagement in risky sexual behaviors, research evidence has suggested that the interaction of these dispositional traits with the social environment could also determine whether those predispositions will be expressed or not, and also to what extent and in what forms these impulsive behaviors will be expressed (Arnett, 1992; Zuckerman, 1994; Arnett, 1995). Indeed adolescents' vulnerability to risky sexual behaviors has been

attributed to the vital socialization effects of peers due to the pivotal role they play in providing them with an opportunity to test their decision making skills away from adult control (Papalia et al, Bednar & Fisher, 2003; 2004; Berk, 2007). According to Berk (2007), since adolescents spend less time with adults due to schooling, adults' stage appropriate roles and commitments elsewhere, the peer influence remains one of the major contributing factors to adolescents sexual risk taking. Consequently, peers become increasingly important as they provide social influence especially in shaping the adolescents' sexual behavior.

While emphasizing the role of peers in adolescents' decision making, Berk, Bednar & Fisher, (2003) pointed out that peer groups are important in psychological development of adolescents because they serve as a guide in the formation of identity especially at a period when adolescents are beginning to establish a sense of self that is separate from adults and other family members. This suggests that peers are more likely to provide 'anti socialization support' for behaviors not acceptable to adults, the family and the community at large. In addition adolescents more than other groups, are also more likely to be prone to peer susceptibility (Steinberg, 2005; Gardner & Steinberg, 2005), possibly due to their weak self-regulation linked to distorted information processing and neurological incapacitation processes that accompany adolescence, (Dalh, 2001).

Studies reviewed indicate that peer pressure is a significant contributor to adolescent sexual risk taking across the globe (Cherie & Berhane, 2012; King'ori, 2014: Otanga & Wang'eri, 2013). Cherie and Berhane, 2012 established that, peer factors resulted to the highest variance of sexual risk behavior (58.5%) being accounted for by the logistic regression model adopted in the study. Similarly, King'ori (2014) established that 68 % of the secondary school adolescents felt pressured

by peers to engage in sex. Cherie and Berhane's (2012) study adopted logistic regression for data analyses, which is limited especially when examining interrelations between of observed and unobserved latent variables, to overcome this limitation the current study adopted structural equation modeling. Structural equation modeling (SEM) as Little, Bovaird, & Card (2007) argue represents an important advance in the study of multiplicative or nonlinear effects because of its ability to properly address the presence of measurement error within a statistical model. In addition, using SEM, the proportion of variance common to multiple indicators of a given construct is estimated, and the structural relations among these latent constructs are then be modeled. In the current study, SEM was useful in estimating the proportion of variance common to the various indicators of developmental capacitation, sexual risk taking and peer pressure susceptibility which were the latent variables in the study. It also enabled modeling of the relations between these latent variables.

The interpretation of the findings of the study by King'ori (2014) is limited to descriptive statistics without examination of the underlying relationships between various factors that apparently influence adolescent sexual risk taking. The current study sought to explore the underlying relationships between the variables affecting sexual risk taking among adolescents, which was expected to be more useful for informing development of interventions to address sexual taking behaviors among adolescents.

Concerns on adolescents' sexual risk taking are equally fundamental in Africa. The African Population and Health Research Center (APHRC) in 2009 pointed out that there was high prevalence of risky sexual behavior among adolescents characterized by increased deaths due to abortion, STDs and HIV/AIDs infections as well as increased cases of unwanted pregnancies

despite the various intervention programs put in place (APHRC, 2009). This, they suggest, calls for a deeper examination of the underlying mechanisms through which developmental capacitation could lead to adolescents' impulsivity, sensation seeking and indulgence in risky sexual behavior (Aguiyi, et al., 2010). The current study sought to bridge this knowledge gap by examining the underlying relationship between the variables identified as key impetus to adolescent sexual risk taking.

A study carried out in Uganda by Hulton, Cullen and Khalokho, (2000), identified peer pressure as a possible moderating factor between developmental capacitation and risk taking behaviors. This study indicated that adolescents were at an increased risk of contracting HIV/AIDs because they engaged in unprotected sex as a result of pressure from their peers to prove fertility or manhood (Hulton, Cullen & Khalokho, 2000). While moderation specifies when certain effects would hold, mediators seek to explain how and why such effects occur, and thus providing deeper understanding about mechanism of action (Gunzler, Chen, Wu & Zhang, 2013). Consequently the current study sought to reinforce this body of knowledge by examining the role of peer pressure as a mediator variable in the relationship between adolescents' developmentally instigated capacity to make decisions and sexual risk taking.

In Kenya, the possible catalyzing impact of developmental capacitation and peer pressure in increasing sexual risk taking among adolescents has been noted and made an area of such great concern to cause the government to put in place several intervention strategies to curb the consequences of sexual risk taking. One such intervention has been the development of national guidelines for the provision of youth friendly services in the country aimed at limiting irresponsible sexual practices among the youths in Kenya (Republic of Kenya, 2009; MOH, 2005; MOYAS,

2009). Despite these efforts, the prevalence of irresponsible sexual behaviors continues to be witnessed across the country (Republic of Kenya, 2015). Consequently, the current study intended to examine the underlying relationship, with an aim of providing enhance understanding of the underlying factors that exacerbate this trend.

Sexual intercourse remains the highest mode of HIV and AIDs infections. Consequently, prevalence of HIV and AIDS has widely been used to estimate the extent of sexual risk taking (TICH, 2005). Although the HIV and AIDs prevalence in Kenya has reduced to 5.1 % with that of young women aged 15 – 24 being 5.6 %, this prevalence is still considered high due to the detrimental consequences associated with the disease (KDHS, 2008). This prevalence signals unsafe sexual practices like non-condom use and multiple sexual partners among the adolescents despite increased efforts of awareness and interventions against sexually risky behavior (Ragnarsson, Ekstrom, Carter, Ilake, Lukhwaro, Marrone, & Thorson., 2001;Ongunya, Indoshi & Agak, 2000).

According to KAIS 2012, adolescents aged 15 to 24 in Kenya are sexually active with 85 % and 74 % of the females and male adolescents respectively having engaged in sexual intercourse. Other risky sexual behaviors highlighted in the report include a 21 % of adolescents aged 15-24 who had sexual intercourse by age 15 years. In addition 5 % of females and 14 % of males reported inconsistent use of condom during sexual intercourse. Further, the report indicated that 4% of women and 30 % of men aged 15 – 24 years had two or more sexual partners. This evidence illustrates the extent of sexual risk taking behavior among Kenyan adolescents. Besides 48% of all abortion cases are reportedly among girls aged 14 – 24 years (Republic of Kenya, 2010).

Sexual intercourse is the leading mode of HIV and AIDS infection; this is exacerbated by risky sexual behaviors such as early sexual debut, inconsistent use of condom during sex and also having multiple sexual partners. In Kisumu East district there has been a high prevalence of HIV/AIDs attributed to increased risky sexual behavior. Despite the national HIV/AIDs prevalence being low(5.1 %), that of Kisumu East district remains high at 11.2 %, with that of the Municipality being 15 % compared to 8 % in the rural parts of the district (TICH, 2005; Republic of Kenya, 2009). This could possibly be a manifestation of sexual irresponsibility (Njue et al, 2009). This suggested that, in order to determine the possible vulnerability factors responsible for the documented higher HIV/AIDS rates in the proposed study area, there was need to take steps towards understanding the behaviors underlying the increased sexual risk taking, including assessing the interrelationships between these factors, a need his study sought to meet.

Ragnarsson et al (2001) in their study carried out in Kenyan urban informal settlements found that 28% of the women used condoms inconsistently and had multiple partners, practices that predisposed them to HIV/AIDS infections as well unwanted pregnancies. These incidences provide an indication of the existence of sexual risk taking, and thus a need to examine the underlying relationships between factors that influence sexual risk taking. This would help determine the mechanisms by which sexual risk taking occurs hence providing necessary information by which interventions to address the situation can be developed.

A study by Nyende (2011) examining factors that predispose boys' risky behaviors in boys' day secondary schools in Kisumu Municipality found that of all aspects of risk taking, sexual risk taking was the most risky behavior that boys engaged in and that peers provided the greatest influence to sexual risk taking. Similarly, Nyasoro (2011), in his study to establish the circumstance and determinants of sexual debut and activity among school girls aged 13-15years

in Kisumu, found that, 22 % of the girls aged 13 – 15 years had engaged in sexual intercourse. Evidently this is cause for alarm due to the detrimental consequences associated with early sexual debut. Although Nyende's and Nyasoro's studies provide useful contextual evidence regarding the prevalence of sexual risk taking in Kisumu, their findings may not provide adequate information to develop interventions to address the situation. Intervention strategies can only be developed with adequate information regarding the interrelationships of the underlying factors that exacerbate sexual risk taking behavior. The current study sought to examine the inter- relations among the underlying factors that propel the high prevalence of adolescent sexual risk taking behavior in the Kisumu Municipality, which was expected to provide adequate information to develop interventions to arrest the situation.

From the foregoing, it is evident that personality traits, impulsivity and sensation seeking indeed influence an individual's sexual risk taking behavior. Further, peer pressure exacerbates this situation. The current study sought to examine this relationship further by examining the mediation effect of peer pressure on the relationship between adolescents' individual developmentally instigated capacity to make decisions and their sexual risk taking behavior. This provided a deeper insight regarding the mechanism underlying adolescents' sexual risk taking. Most of the studies reviewed employed regression analyses which are limited by its basic assumptions such as those of normality and multi-collinearity (Alavifar, Karimimalayer & Anuar, 2012). The current study adopted Structural Equation Modeling (SEM), which is regarded as superior to regression strategies due to its ability to provide the degree of fit for the entire model after controlling for the measurement error (Tabachnick & Fidell, 1996: Gunzler et al, 2013). Besides, SEM has more flexible assumptions that allow interpretation of data in the face of multi-collinerity. In addition,

SEM estimates relationships between latent and observable variables, an important aspect whose exploration is limited through regression analyses. Adoption of structural equation modeling enabled examination of the interrelations between developmental capacitation, sexual risk taking and peer pressure as latent variables indicated by various observable variables.

While studies on impulsivity, sensation seeking and peer influence and how they relate to adolescent risky sexual behavior have widely been carried out in the West (Chandra et al, 2003; Khodarahini, 2015; Paydary et al, 2016; Steinberg et al, 2008) few of such studies have been carried out in Africa suggesting the existence of a knowledge gap that needs be filled. In addition, these studies have focused on samples of alcoholic participants, drug abusers and adults to examine the constructs of impulsivity, sensation seeking, peer pressure and their relationship with sexual risk taking behavior, despite evidence that impulsivity, sensation seeking, peer pressure had highest influence among adolescents (Steinberg et al, 2008; Romer, 2010; Winters et al, 2009). The current study sought to examine the relationships between these constructs among adolescents in typical population as opposed to earlier studies carried out among anomalous groups such as addicts. This is expected to provide improved understanding that would inform appropriate intervention for adolescents at risk.

The purpose of this study therefore was to examine the relationship between developmentally prompted bias in decisions making (developmental capacitation) and sexual risk taking among adolescents.

1.2 Statement of the Problem

Adolescence represents a critical period when young people define their sexual values and often start to experiment with sexual behaviors that place them at a heightened risk of STDs and

HIV/AIDS infections. In Kenya, HIV transmission predominantly occurs through heterosexual intercourse, with non-condom use, multiple sexual partners and early sexual debut being the primary risk factors. Consequently, there has been increased interest among researchers and policy makers on sexual risk taking behavior as a way of addressing the HIV and AIDs scourge. This is because of the detrimental consequences associated with sexual risk taking e.g. STDs infections, unwanted pregnancies, abortions and deaths among adolescents.

Although there have been considerable efforts to address this issue, statistics on adolescents' involvement in sexual risk taking are still significantly high. In Kenya, one in every three HIV/AIDS cases reported occurs amongst adolescents, with 50% of new HIV infections occurring among the 15 – 24 years old. The HIV and AIDs prevalence rate was approximated to be 15 % in the district in 2009 and 18.7 % in 2012, compared to the national prevalence rate, 5.1 % in 2009 and 5.6 % in 2012 (Republic of Kenya, 2002; Republic of Kenya, 2009; Republic of Kenya, 2015). The prevalence rate for the Kisumu town area, most of which form the Municipality had a prevalence of 15 % while the rural part of the district has a prevalence rate of 8 % (Republic of Kenya, 2009). In addition, it has widely been noted that a substantial percentage of deaths among adolescents were due to pregnancy related problems with 20,000 girls being admitted in hospital with abortion related complications annually. This implied increased susceptibility to risk taking that predisposes adolescents to instances of irresponsible sexual behavior. This was against the efforts of increased awareness levels and introduction of educational programmes aimed at reducing sexual risk taking among the secondary school adolescents in the region. This can only mean that secondary school adolescents' indulgence in risky sexual behavior is a more complex problem that ought to be examined from a perspective that considers the developmental gap

occurring during puberty at a time when adolescents are vulnerable to peer pressure. This realization motivated this study within Kisumu Municipality as a step towards understanding the behaviors underlying the reported increased sexual risk taking and its relation to HIV/AIDS infections. Further the study sought to examine how these behaviors are influenced by peer pressure.

1.3 Purpose of the Study

The purpose of this study was to determine the relationship between developmental capacitation, peer pressure and adolescents' sexual risk taking behavior.

The Specific objectives of the study were:

i. To determine the relationship between adolescents' developmental capacitation and sexual risk taking behavior.
ii. To establish the relationship between susceptibility to peer pressure and sexual risk taking.
iii. To establish the relationship between developmental capacitation and susceptibility to peer pressure.
iv. To determine the mediation effect of peer pressure on the relationship between developmental capacitation and sexual risk taking behavior.

1.4 Research Questions

The following research questions guided this study;

i. What is the relationship between developmental capacitation and sexual risk taking behavior?
ii. What is the relationship between susceptibility to peer pressure and sexual risk taking among adolescents in Kisumu Municipality?

iii. What is the relationship between developmental capacitation and susceptibility to peer pressure?

iv. What is the mediation effect of peer pressure on the relationship between developmental capacitation and in sexual risk taking behavior?

1.5 Assumptions

The study was based on the following assumptions;

i. Impulsivity, sensation–seeking and susceptibility to peer pressure are manifestations of differential developmental capacitation among adolescents.

ii. There exists linear relationship between developmental capacitation, peer pressure and sexual risk taking behavior.

iii. Secondary school students in Kisumu Municipality engage in sexually risky behavior.

iv. All the students were willing to share sensitive information about their sexual behaviors.

1.6 Scope of the Study

The study was carried out in Kisumu Municipality. It involved students in Form one to Form Three enrolled in the secondary schools within the Municipality. It considered impulsivity and sensation seeking as the observable measures of development capacitation and how they relate to adolescents' sexual risk taking behavior. The study examined the role of peer pressure in the relationship between adolescents' developmental capacitation and sexual risk taking behavior. The five subscales of peer pressure inventory were adopted as the indicators of peer pressure. Sensation seeking behavior and impulsivity were adopted as the observable measures of developmental capacitation. The study adopted sexual experience, condom use, multiple sexual partners, sex under influence of alcohol/drugs and early sexual debut as the indicators for sexual risk taking behavior.

1.7 Significance of the Study

The findings of this study are important since they provide information upon which interventions towards sexual risk taking can be developed. In addition, the findings provided important information on the underlying relationships between impulsivity, sensation seeking, susceptibility to peer pressure and sexual risk taking behavior among adolescents This has greatly enriched the existing body of literature by providing a Kenyan perspective to risk taking behaviors amongst adolescents. The findings may also be useful to policy makers in the field of education and youth affairs to design appropriate intervention strategies aimed at addressing adolescent sexual risk taking behaviors, which has become a great area of concern especially because of the dire consequences associated with the adolescent deaths.

1.8 Limitation of the Study

The study was limited by the following factors;

i. The study did not employ the use fMRI - Functional Magnetic Resonance Imaging to assess the neurological aspects of developmental capacitation but rather measured the outcomes of developmental capacitation as indicated by impulsivity and sensation seeking. Therefore the specificity of developmental capacitation is limited.
ii. The study heavily relied on self-report measures of the constructs of impulsivity, sensation seeking and susceptibility to peer pressure which rely on the honesty of the respondents.
iii. The study was limited to adolescents in schools within Kisumu municipality and therefore the generalizations of the findings for adolescents outside the study population may be limited.

1.9 Conceptual Model

The current study was based on a conceptual framework in which developmental capacitation was adopted as the independent variable, sexual risk taking was the dependent variable while susceptibility to peer pressure was adopted as the mediating variable in the relationship between developmental capacitation and sexual risk taking behavior. Since the study intended to use Structural equation modeling, developmental capacitation was adopted as the latent independent variable (exogenous variable) with impulsivity and sensation seeking as its observed variables/ indicators. Developmental capacitation was conceptualized as the resultant behavioral bias of the temporal gap in adolescents created by the two distinct brain systems, socio-emotional and cognitive, which mature in different times in the lifespan of an adolescent .In the study developmental capacitation was not measured directly through brain imaging but rather the resultant behaviors, sensation seeking and impulsivity, were measured to indicate the extent of developmental capacitation.

Adolescents' sexual risk taking behavior was the dependent variable (endogenous variable) in the study. It was conceptualized as adolescents' engagement of sexual practices that predispose them to infections and/or unwanted pregnancy. It had five indicators namely; sexual experience, early sexual debut, multiple sexual partners, having sex under the influence of alcohol/drugs, and inconsistent condom use during sex.

Susceptibility to peer pressure was adopted as the mediating variable with five indicators which included adolescents succumbing to the push by their friends, age mates and schoolmates to engage in risky behaviors. The five indicators of susceptibility to peer pressure included; conformity to

peer behaviors, pressure for family involvement, school involvement, peer involvement and misconduct.

The proposed conceptual framework heavily borrowed from the dual system model, advanced by Steinberg (2008). The model suggests that around the time of puberty, risk taking increases as a result of the brain's socio emotional changes that occur during this period. This process leads to an increase in sensation seeking specially in the presence of peers. During this time, Steinberg (2008) argues, the cognitive control system of the brain which is responsible for self-regulation and impulse control is still immature and thus not capable of regulating the impulses. The theory emphasizes that it is this temporal gap between the arousal of the socio-emotional system and the full maturation of the cognitive control system that makes adolescence a period of heightened vulnerability.

Further, the model borrowed from the social development theory which postulates that the socializing process occurs at distinct periods within the development of an individual with different socializing agent dominating each period. During adolescence, peers dominate the socializing process. This has strong implications since it is during this time that the adolescent begins the process of individuation, as he seeks to obtain a distinct identity from his family (Catalana & Hawkins, 1996).

The proposed model in the study epitomized the interrelationship between developmental capacitation, sexual risk taking and susceptibility to peer pressure. The model proposed that there existed direct effects of developmental capacitation and sexual risk taking. Additionally, the

introduction of susceptibility to peer pressure as a mediator reduced these direct effects due (See Fig1.1).

Baron and Kenny (1986) proposed examination of the three paths relating the dependent, independent and the mediating variables. The first path relate the independent variable (Developmental capacitation) and the dependent variable (sexual Risk taking behavior); while the second one relates the dependent variable (developmental capacitation) and the mediator (peer pressure susceptibility). The third path to be examined according to Baron and Kenny (1986) , is the one relating the mediator(peer pressure susceptibility) and the dependent variable (Sexual risk taking behavior). It is expected that if the mediator (susceptibility to peer pressure) is effective, then the direct path between developmental capacitation and sexual risk taking would be significantly reduced (as indicated by the broken line).

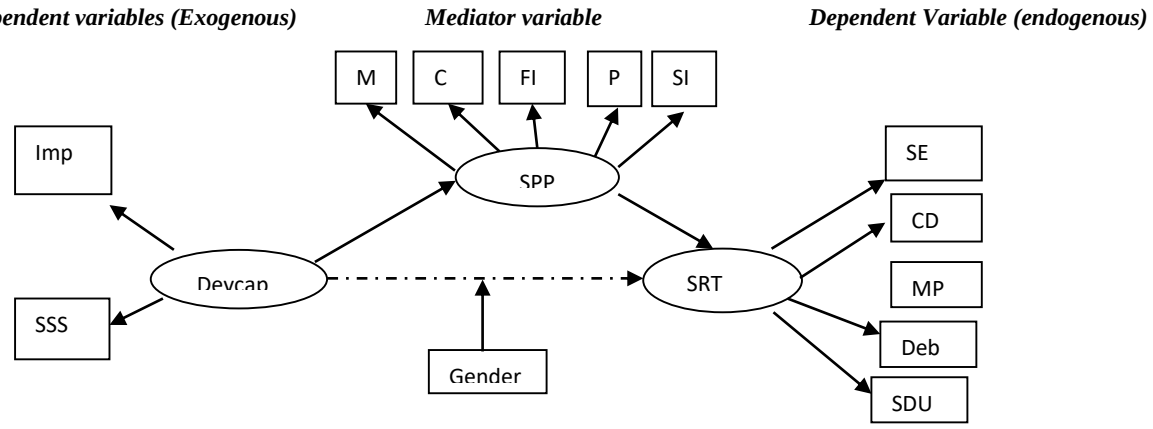


Fig 1.1: Modular representation of the interrelationship between the exogenous, endogenous and mediator variables and their indicators.

KEY

***SE**- Sexual experience*
***CD-** inconsistent condom use*

***MP-** Multiple sexual partners*
***Deb**- sexual debut*
***SDU-** Sex under the influence of alcohol/drugs*
***M**- Misconduct*
***C**- Conformity*
***FI**- Family Involvement*
***PI**- peer Involvement*
***SI**- School Involvement*
***SRT**- sexual risk taking Behavior*
***SSS**- sensation seeking*
***Imp**- Impulsivity*
***DevCap**- developmental capacitation*
***SPP**- susceptibility to peer pressure*

1.10 Operational Definition of Terms

Adolescents – Secondary school students in Kisumu Municipality aged between 13 and 19 years.

Developmental capacitation- the differential ability of the adolescents to assess risks, determined by levels of impulsivity and sensation seeking.

Life time sexual experience- referred to the ever having sexual intercourse in one's lifetime as at the time of the study.

Mediation- will be said to have taken place when the direct effect of developmental capacitation on sexual risk taking have been significantly reduced by the introduction of peer pressure into the model.

Sexual risk taking behavior- engagement in one or more of the following behaviors; involvement in sex, with a stranger, with multiple sexual partners, under the influence of alcohol/drugs, inconsistent use of condom or involvement in sexual intercourse before age 14 years.

Susceptibility to peer pressure-adolescents succumbing to the push by their friends, age mates and schoolmates to conform to peers, indulge in peer activities, involve in school related activities, family related activities as well as to engage in unconventional behaviors.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section presents reviewed literature on the relationship between developmental capacitation and sexual risk taking and among adolescents; Peer pressure and sexual risk taking, developmental capacitation and peer pressure as well as literature on the mediation by peer pressure

2.2 Adolescents Developmental Capacitation and Sexual Risk taking Behavior

There exists research evidence on increased sexual risk taking among adolescents than any other group in the life span (Papalia et al, 2004). Consequently, it is important to evaluate sexual risk taking behavior among adolescents because of the detrimental consequences associated with sexual risk especially the HIV/AIDS pandemic (Raffaelli & Crocket, 2003). Since adolescence is largely characterized by great sexual experimentation that endangers the reproductive health of young people, researchers have termed risky sexual behavior as a major health issue among the youth with unwanted pregnancy, unsafe abortion and STDs top on the list (Chege, 2000; Zietsch et al, 2010). Evidently, adolescent sexual risk taking still attracts increased research interest.

Results of the 2009 Youth Risk behavior Survey (YRBS) in the U.S. indicated that 46 % of the students in grades 9 through 12 had engaged in sex, with 65 %and 42 % of the males and females respectively having had sex before the age of 13 years (CDC, 2010). The same report also noted that 28 % of the males and 10.5 % of the female students that were sexually active had 4 or more sexual partners, a behavior described as risky for STDs and HIV/AIDs infection. This report though informative does not seek to establish the underlying factors leading to these behaviors, a

gap the current study sought to fill by examining the underlying mechanisms that propagate sexual risk taking behavior.

A study conducted in Zambia on sexual behavior and sexually transmitted diseases involving 126 men, established that a third of the men had multiple premarital sexual partners and that use of condoms was not widely accepted (Ndubani & Hojer, 2001). Notably this study only concentrated on men leaving out the women who are equally affected by risky sexual behavior. In addition this study limits sexual risk taking to premarital sex and condom use, leaving out other vital aspects of sexual risk taking like early sexual debut and number of sexual partners. The current study looked at sexual risk taking among males and females, and included broader aspects of sexual risk taking besides premarital sex and condom use.

The Kenya Demographic health Survey (KHDS 2008/2009) pointed out an increased prevalence of sexual experimentation among adolescents aged 15 to 19 years; that out of a population of 1,761 aged between 15- 19, 11.5% of the females had engaged in sex by age 15 years and 22.3% of the males. In addition the survey reported that by age 18 years, about half of the female adolescents (47 %) have had sexual intercourse as compared to 58 % of the boys (KNBS &ICF Macro, 2010). The survey further pointed out that since HIV transmission in Kenya occurred predominantly through heterosexual intercourse between an infected person and a non-infected person, age at first sex marked the time when most adolescents risked infection (KNBS &ICF Macro, 2010). As an intervention strategy to curb increased adolescents' involvement in risky sexual behavior, the Ministry of Health has come up with guidelines for provision of youth friendly services to address the ever increasing adolescent patients with reproductive complications (MOH, 2005). This has

been necessary since most of people engaging in risky sex are adolescents aged 15 – 24 years resulting to the highest rates of new HIV/AIDS infections (KDHS, 2003; MOH, 2005; MOYAS, 2009; Republic of Kenya, 2009; Republic of Kenya, 2010).

Similarly, the Kenyan Status Report on the Millennium Development Goals (MDGs) of 2005 cited increased indulgence in risky sex, strong resistance to condom use and low sex abstinence among adolescents aged 15 – 24 years, as the major challenges affecting the implementation of goal six of the MDGs (Republic of Kenya, 2005). A baseline house hold survey carried out in major urban centers in Kenya in 2010 indicated that there was increased irresponsible sexual behavior that was rampant in poorer urban areas (Ministry of Public Health & Sanitation, 2011). Except the statistics indicating the prevalence of sexually related adolescent health challenges, little efforts have been put in place to understand the underlying factors that lead to this increased sexual risk taking among adolescents, a dimension the current study explored.

Njue et al (2009) in their study aimed at establishing the correlates of adolescents' sexual and reproductive health behavior, found out that 32 % of the respondents had ever had sexual intercourse, 23 % never used condoms because they did not think they were at risk , 53 % had multiple sexual partners. They also found out that there was early sexual debut, 13 years for females and 14 years for males. All these are factors that are likely to predispose Kenyan adolescents to risky sexual behaviors. This concern was also highlighted by the African Population and Health Research Center (APHRC) that called for a policy shift from awareness creation to reproductive health programs that address multiple risk factors and intervene in risk perception among sexually active adolescents (APHRC, 2009). The findings of Njue et al (2009) indicated

high prevalence of sexual risk taking behavior despite attempts to put up interventions and calls for a deeper examination of the mechanisms underlying adolescents' sexual risk taking behavior. Although these studies provide vital statistics on the prevalence of adolescent involvement in risky sexual behavior, they did not provide any attempt to understand factors underlying this behavior and therefore offer limited intervention towards addressing sexual risk taking among adolescents. The current study was an attempt to improve this body of knowledge by examining how peer pressure mediates on developmentally related capacitation to influence sexual risk taking among adolescents.

In the current study, developmental capacitation was conceptualized as the differential ability of an adolescent to decide on whether or not to take up risk, a situation occasioned by a temporal gap that exists among adolescents. According to Steinberg (2008), this temporal gap results from the differing timelines of maturity of the cognitive control and the social emotional systems of the brain during adolescence. This differential developmental capacitation propagates the need for increased sensation seeking as well as impulsive decision making. Steinberg et al, (2008), emphasize that during adolescence, there exists a heightened vulnerability to risk as a result of a combination of a relatively higher inclination to seek excitement (sensation seeking) and relatively immature capacity for self-control (impulsivity). This is what Zuckerman, (1994), also indicated as heightened arousal for risk taking behaviors and a tendency for impulsivity (Acton, 2003; Moeller et al 2001; Donohew et al, 2000; Steinberg, 2008). Impulsivity and sensational seeking are therefore significant developmental factors that affect risk taking by influencing the decision making process among adolescents. The current study therefore sought to examine how these developmental factors would influence adolescents' sexual risk taking behavior.

2.2.1 Impulsivity and Sexual Risk taking

Impulsivity refers to a predisposition toward rapid unplanned reactions to internal or external stimuli without regard to negative consequences of these reactions to the individual or others (Moeller et al., 2001). Although it was initially conceptualized as a one-dimensional trait, later research suggested that it is a multidimensional trait comprising of three sub traits:-cognitive impulsivity which refers to the aspects of quick cognitive decision making, motor impulsivity or acting without thinking and non- planning impulsivity which refers to the lack of planning/ 'futuring' (Moeller et al, 2001). Adolescents special vulnerability and risk proneness is related to a temporal gap brought about by the stimulation of the socio emotional system coupled with late maturation of the cognitive control system (Steinberg, 2008).This gap results to an increased tendency of impulsivity among the adolescents since the self-regulation system and impulse control are still developing (Steinberg, 2008; Dalh, 2001)

Impulsivity has been regarded as a major risk factor implicated for adolescents' engagement in maladaptive behaviors (Acton, 2003; Arnett & Joiner, 2007; Zimmerman, 2009). Kershaw and Niccolli (2003) in their study on perceived susceptibility to pregnancy and sexually transmitted diseases among adolescents affirmed that impulsivity was an underlying factor for sexually risky behaviors. Their findings have been supported by Lejuez and others in a study aimed at establishing the mediating effects of impulsivity on drug use and sexual risky behavior (Lejuez et al, 2005). Their study found a significant positive correlation between sexually risky behavior and impulsivity; $r= 0.29$ ($p > 0.001$).

While the findings of Kershaw and Niccolli (2003) and Lejuez (2005), provide significant findings, the examination of social context that impulsiveness is manifested among adolescents would have considerably enhanced existing body of literature. Consequently the current study sought to examine the relationship between impulsivity and sexual risk taking in the light of peer influence, which researchers consider paramount in understanding adolescents' behavior. In addition, the inclusion of sensation seeking and peer pressure was considered vital, since these factors are also likely to interrelate with impulsiveness to influence sexual risk taking. This was particularly important since more current research has indicated that a combination of impulsive behavior and sensation seeking is likely to result into even more increased tendency towards sexually risky behaviors.

Researchers on adolescents' development have established that the peer group is an important socializing factor that is likely to determine how factors like impulsivity are likely to manifest themselves. Such a multidimensional approach is bound to enrich the holistic understanding of adolescent sexual risk taking. Lejuez's study concentrated on adolescents who were drug abusers. Consequently, the significant correlation may have been as a result of adolescents' drug involvement and not necessarily due to impulsivity. Since the current study examined impulsivity in a normal population, it was hoped that the understanding of the effects of impulsivity on adolescents' involvement in risky sexual behavior would be improved.

A research by Donohew and colleagues (2000) on sensation seeking, impulsive decision making and risky sex among 2,949 ninth (9^{th}) grade students in 17 high schools in two Midwestern Cities of the U.S. revealed that female students high on impulsivity reported high incidences of unwanted sex under pressure, when drunk, and had five or more sexual partners, used alcohol

before sex and never refused unsafe sex than those low on impulsivity. Notably this study provide useful information on impulsivity and sexual risk taking, however, it only concentrated on the females. The current study incorporated all the genders in the examination of how sensation seeking and impulsivity influences sexual risk taking.

In support of these findings Kershaw and Niccolli (2003) confirmed that indeed impulsivity is an underlying risk factor for sexually risky behavior and that adolescents with deficits in self-regulatory behavioral system have a greater likelihood of engaging in sexually risky behavior. From their study, Kershaw and Niccolli (2003) affirmed that most adolescents only practice safe sex after contracting an STD or becoming pregnant.

Correspondingly, Winters, Botzet, Falin- Horst, Baumel and Lee (2009), in their study to examine the relationship between impulsivity, risky sexual behaviors and drug abuse in a sample of 89 young adults, established that indeed impulsivity is an underlying risk factor for many youth problems including sexual risk behaviors. While the results of this study are enriching, the sample of the study is limited to 89 young adults whose mean age was 18.7 years. Research evidence indicate that impulsivity levels are highest during adolescence (Steinberg, 2008: Steinberg et al, 2008), when the impulse control system is immature, making adolescence a period of increased vulnerability more than in young adulthood. It was imperative that the current study examine the contribution of impulsivity towards sexual risk taking among adolescents, a group that is evidently most vulnerable to impulsivity than young adulthood.

Reviewed literature revealed that impulsivity was indeed an important personality trait that has significant influence on adolescents' sexual risk taking behavior. However, these studies exhibit a

weakness from the samples used in their respective studies. Donohew et al (2000) used a female only sample which limits the generalizability of the findings to only one gender; there exists research evidence that gender plays an important role in the expression of impulsivity as a personality trait (Crockett, Rafaelli, & Shen 2006). Similarly, the sample in the study by Winters et al (2009) comprised of young adults against a backdrop of evidence indicating the impulsivity was more chronic during adolescence. Thus current study sought to examine the relationship between impulsivity and sexual risk taking among adolescents.

2.2.2 Sensation Seeking and Sexual Risk taking

Sensation seeking is a trait widely related to risk taking among adolescents (Zuckerman, 1994; Donohew et al, 2000; Aguiyi etal, 2010). It is defined as a trait characterized by the seeking of varied, novel, complex and intense sensations and experiences and the willingness to take physical, social, legal and financial risks (Zuckerman, 1994). Zuckerman points out that sensation seekers underestimates or accepts risk as the price for the reward provided by the sensation or the experience. Accordingly, risk is not an essential motivation for the behavior but rather the experience the behavior provides. Sensation seeking is divided into four traits which correspond to the four subscales developed by Zuckerman to measure sensation seeking. The four sub traits are; 1) Thrill and adventure seeking which reflects an individual's desire to act in risky, impulsive and adventurous activities that offer unique sensations, 2) Experience seeking – the pursuit of new sensations, 3) Disinhibition – reflects the impulsive extroverted behaviors of an individual and 4) Boredom susceptibility which reflects antipathy to repetitive experiences (Malkin & Rabinowitz, 1998). The current study explored a combination of all the four scales of sensation seeking to determine the overall sensation seeking score.

Research on sensation seeking has focused on high sensation seekers versus low sensation seekers. High sensation seekers are reported to be receptive to stimuli that are intense, novel and arousing, and that they consider low levels of arousal as 'boring'. On the other side, low sensation seekers tend to reject stimuli that are highly intense, preferring familiar and less complex stimuli (Donohew et al, 2000). Evidence from research shows that high sensation seekers are more likely than low sensation seekers to be involved in risky situations (Greene et al, 2000; Donohew et al, 2000). However researchers are quick to point out that although adolescents high on sensation seeking are more likely to indulge in risky sexual behaviors, it is the proportion of them that are impulsive that are more likely to do so (Donohew et al, 2000: Aguiyi et al, 2010). Consequently the current study proposed to examine the effects of sensation seeking on sexual risk taking behavior alongside impulsivity.

A study carried out by Chandra, Krishna, Benegel and Ramakrishna (2003) to establish the relationship between high risk sexual behavior and sensation seeking in a sample of 177 heavy alcohol users who were admitted in the National Institute of Mental Health and Neuroscience in Bangalore India, affirmed that indeed sensation seeking was an important factor that contributed to high sexual behavior. The generalizability of Chandra's study is limited to heavy alcohol users who formed their sample, it is not clear from their study whether the high sexual behavior among the respondents may have been as a result of heavy drinking and not necessarily sensation seeking. The current study sought to enhance the generalizability of relationship between sensation seeking and sexual risk taking into an archetypal adolescent population.

Similarly, Paydary, Torabi, SeyedAlinaghi, Noori, Norozi, Ameri and Ekhtiari (2016), in their study to examine impulsivity, sensation seeking and risk taking behaviors among HIV positive and HIV negative Heroine dependent users, established that HIV positive individuals scored highly on the Barrat Impulsivity Scale as well as on the Sensation Seeking Scale. They concluded that impulsivity and sensation seeking were likely render individuals susceptible to the practice of more risky behaviors. Their findings, like those of Chandra et al. (2013), may not be generalized beyond HIV positive heroine dependent population, from which they drew their samples. The current study sought to bridge this generalizability gap by using a sample drawn from a typical community population of adolescents.

Roeser (2013), in a study to examine personal and social factors in risk taking behavior, found that sensation seeking was a significant factor in risk taking behavior. Further her study concluded that the relationship between peer involvement in risky sex and risky sexual behavior was statistically significant. Roeser's study was carried out in a college population, whose ages ranged from 18 to 25 years, and examined risk taking behavior as a composite of six subscales one of which was sexual risk taking. The current study intended to examine sensation seeking and sexual risk taking in a relatively younger population (Secondary school adolescents), an age according to researchers is more vulnerable to sensation seeking.

Winters et al (2009) in their study to examine a mediational model of interrelationship of drug use, sexual risk taking and impulsivity, established that impulsivity partially mediated the association between drug use and sexual risk behavior. The study found out that, adolescents with impulse control problems suffer from deficits in self- regulatory behavioral systems, and that when they

are faced with risk taking opportunities such as sexual activity, which promise some type of immediate reinforcement, they are more likely to relent to the urge. Among its major recommendations, the study suggested the examination of peer pressure as an important factor that contributes to sexual risk taking behavior. Notably the sample used by Winters and colleagues was small (n=89), who comprised of young adults, mean age 18.7. Researchers concur that evidence of deficits in self-regulation are more pronounced among adolescents than young adults, it was therefore paramount to examine how impulsivity related to sexual risk taking in a larger, younger sample.

In examining the effect of impulsivity and sensation seeking as factors responsible for heightened adolescents' vulnerability to risk taking, Steinberg et at (2008), point out that the heightened vulnerability to risks witnessed during middle adolescence may be due to the combination of relatively higher inclination to seek excitement and relatively immature capacities for self-control. The current study examined the contribution of these two very important traits towards sexual risk taking. The two variables were conceptualized as indicator variables for developmental capacitation that influences the extent to which adolescents will or will not take up sexual risk taking.

Reviewed literature reveals that indeed sensation seeking is an important factor determining adolescent sexual risk taking. From the studies conducted, it is evident that most of them were carried out in a sample that is alcohol or drug dependent, and as such the established contribution of sensations seeking to sexual risk taking behavior cannot easily be delineated from those of the effect of drug/alcohol. In addition the study carried out by Roeser (2013) involved older

adolescents whose effect of sensation seeking may not be as eminent as younger adolescents that the current study intended to examine. In the light of findings of researchers such as Steinberg et al (2008) as well as Saxena and Puri, (2013) that certainly sensation seeking is highest during mid-adolescence, it was imperative to examine the relationship between sensation seeking, as a developmentally capacitated ability to take up risks and sexual risk taking among adolescence.

2.3 Peer Pressure and Sexual Risk taking

Peer pressure refers to being influenced or pushed over by friends or age mates to do something you do or do not wish to do (Clasen & Brown, 1985). Petal, (2007) defines it as the pressure an individual feels to conform to the ways of a social group into which one wants to be accepted. Clasen and Brown (1985) identified five areas of peer pressure namely; involvement with peers, conformity to peer norms, school involvement, family involvement and misconduct. The five areas were adopted in the current study as indicators of susceptibility to peer pressure; since they have been identified as key forces that influence adolescents' social development (Steinberg & Silverberg, 1986; Cherie & Berhane, 2012; Yunus, Mushtaq & Qaiser, 2013)

During adolescence, the social group one wants to be associated with is the peer group which dominates the socializing process. This has strong implications since it is during this time that the adolescent begins the process of individuation, as he seeks to obtain a distinct identity from his family (Papalia et al, 2004; Steinberg, 2008). Peers play a pivotal role especially with regard to sexual issues. This is due to the increased need for peer approval among adolescents which increases adolescents' susceptibility to peer pressure more than other groups in the life span of human development (Brown, 1996; APA, 2002; Steinberg, 2008). In addition peer groups play

vital roles in psychological development by being guides in identity formation (APA, 2002; Bednar & Fisher, 2003; Papalia 2004; Berk, 2007).

Although peers undoubtedly play a fundamental role in adolescents socialization, family and school also been identified as important forces that shape up adolescents behavior (Yunus, Mushtaq & Qaiser, 2013). While emphasizing the role of family, Hartup (1999) point out that, adolescents with low levels of family cohesion but had close and supportive friends had high self-esteem which promoted their personal development. Adolescents are less likely to be influenced by friends when they have close and involving relationship with their parents, and as thus they are less likely to be influenced into negative peer influence (Steinberg & Silverberg, 1986). While highlighting the importance of school as a basic force in social development of adolescents, Cherie and Berhane (2012), point out those students who were perceived to be connected to school were less likely to be engaged in risky sexual behavior in sexual. The current study sought to examine the family and school aspects as indicators of areas into which adolescents experience pressure from their peers, as part of the peer pressure inventory conceptualized by Brown and Clasen (1985).

In the United States it was noted that many youths experienced significant peer pressure to engage in sexual behavior (APA, 2002). The American Psychological Association reported that among adolescents aged 12 to 18 years 61% of the boys and 23 % of the girls had sex due to peer pressure. These results indicated high involvement of adolescents in sexual behavior as a result of peer pressure.There exists considerable support from research on the importance of peers in influencing many adolescent behaviors and attitudes (Gardner & Steinberg, 2005; Steinberg, 2007; Vitulano,

2009). Meltzer, Hoell, Biglan, Ary and Smolkowski, (1997), in their study to assess the social context for risky sexual behavior among adolescents found out that adolescents whose peers engage in diverse problem behaviors were more likely to engage in risky sexual behavior. Arnett explains this as a reaction by adolescents towards the community's intolerance of a particular risky behavior and thus peers serve as anti-socialization partners supporting the behavior (Arnett, 1992). Gardner and Steinberg (2005), in their study comparing adolescents and adults in peer influence on risk taking, risk preference and risky decision making, found out that adolescents were, more likely than adults to engage in riskier decisions since they are more prone to peer pressure. Their results affirmed that when faced with risky decisions in the context of a peer group, adolescents are less likely to resist the influence of their risk prone age mates. These studies were supported by Steinberg and Kathryn (2007) and Vitulano (2009). Despite the rich knowledge of the role played by peer pressure in influencing adolescents' involvement in risky sexual behavior, none of them has explored the mediating effect of peer pressure, an aspect the current study felt would enhance the understanding of the effect of peer pressure on sexual risk taking.

A study conducted in Ethiopia to assess factors associated with adolescents sexual risk taking behavior among school adolescents, concluded that peer pressure was the most significant factor associated with risky sexual behavior (Cherie & Berhane, 2012). The study conducted by Cherie and Berhane involved a sample of 723 adolescents in Addis Ababa, it adopted logistic regression to analyze four prediction models with the one of peer factors resulting to the highest variance of Sexual risky behavior being accounted (58.5%). While logistic regression is fairly informative in prediction Structural Equation Modeling (SEM), which the current study adopted, is a more powerful multivariate technique that captures relationships within a web of observed and

unobserved variables (Holmeck, 1997; Gunzler et al 2013), an aspect that logistic regression does not. In addition SEM provides information on the degree of fit of the entire model, thus providing more valuable information above logistic regression.

King'ori (2014), in his study carried out among secondary school students in Nyahururu, to establish the effects of peer influence on sexual behavior, found out that 68 % of the adolescents felt pressured by peers to engage in sex. A notable weakness in this study was noted in the method of analyses, in which the analyses were reduced to simple descriptive with no attempts to examine the underlying relationships, which would be more informative than the descriptive since they would provide a useful basis for action-oriented recommendations. The current study sought to establish the underlying relationship between peer pressure and sexual risk taking behavior.

In a study carried out in Mombasa County, Kenya by Otanga and Wang'eri, (2013), to explore family and peer factors related to sexual behavior, it was established that peer factors indeed played an important role in determining extents of involvement in sexual behavior. Parental monitoring was highlighted as a protective factor for involvement in sexual behavior. While this study is informative with regard to the relationship between peers involvement and sexual risk taking, it generalized sexual risk taking to behaviors such as holding hands, kissing, going to the parks which do not necessarily contribute to sexual risk indulgence. In addition the method of data analyses employed was descriptive statistics and no attempts to examine the underlying relationships were made. The current study intended to examine the role of peers and sexual risk taking more deeply by examining the underlying relationships

From the reviewed literature, it emerged that research on social context of adolescent sexual risk taking remain largely underdeveloped in sub-Saharan Africa (Bingenheimer, Asante, & Ahiadeke, 2015). In addition, there exists a methodological gap in the studies reviewed, with most of them leaning towards descriptive statistics and or regression analyses. The current study intended to examine the relationship between peer pressure and sexual risk taking using structural equation modeling, a more powerful multivariate technique that uses a conceptual model, path diagrams and systems of linked regression style equations to capture the relationships between latent and observed variables (Gunzler et al, 2013).

2.4 Developmental Capacitation and Peer Pressure

The influence of peers in adolescent risk-taking behavior is an area that has received overwhelming research in the recent past. Dodge and Gonzales (2009) in their meta-analysis on family and peer influences on adolescent behavior and risk taking concluded that considerable research evidence indicated that biological and developmental forces interact with peers influence to exacerbate risk taking among adolescents. Further they pointed out that the peers context remained central to explain how vulnerability interacts with biological and neurological maturation to influence propensity for risk taking behavior among adolescents.

In a study on the effects of peer presence and adolescents' sexual risk taking carried out by Daniel (2016), the researcher concluded that adolescents' risk taking behavior in the presence of peers was attributed to differential developmental process in the adolescent brain and reward preference. In support of these findings, Chein, Albert, O'Brien, Uckert and Steinberg (2010), in their study that examined how peers increased adolescent risk taking by enhancing activity in the brain's reward circuitry, found out that peer presence sensitized incentive processing in adolescents.

Chein et al (2010) pointed out that the risk promoting effect of peer presence on adolescent decision making could be as a result of neural vulnerability that emerges as results of discordant maturation of the brain systems that support decision making during adolescence.

Impulsivity and sensation seeking have been found be correlated to adolescents susceptibility to peer pressure (Stautz, 2013). In his study to establish the relationship between impulsivity peer influence and substance abuse among adolescents, Stautz (2013), found that that peer pressure and impulsivity were strongly correlated. Like most studies exploring trait impulsivity, Stautz study related impulsiveness to adolescents' substance abuse, and thus it is difficult to delineate the effects of substance abuse from those of impulsive decision making among the adolescents investigated. Further Stautz himself point out that his study's generalizability is limited by the large number of the female participants in the study (73% of 270 participants). The current study sought to bridge the gap by examining the relationship between impulsivity and peer pressure in a randomly selected sample that was not likely to be biased towards a single gender.

In his article on a social neuroscience perspective on adolescent risk taking, Steinberg (2008) argues that risk taking among adolescents was largely as a result of changes in the brain's cognitive control system. These changes, Steinberg maintains, occur in differing timetables, which make adolescence period of heightened vulnerability to risky behavior. Steinberg explains that risk taking among adolescents increase due to changes in the brain's socio- emotional system, and that risk taking declines in adulthood due to the brain's cognitive control system. It is the differing timetables of these brain systems that make adolescence a period of heightened vulnerability (Steinberg, 2008).

Literature reviewed indicates that the adolescents' developmental process interacts with peers influence to influence risk taking among adolescents. This motivated the examination of susceptibility to peer pressure as a mediating variable between developmental capacitation and sexual risk taking. In the current study, sensation seeking and impulsivity were examined as developmentally instigated factors that interact with peer pressure to influence sexual risk taking behavior among adolescents.

2.5 Mediation by Peer Pressure

Baron and Kenny (1986), accredited for their contribution towards the understanding of mediators and moderators, defined a mediator variable as the third variable that explain how external physical events take place, a mechanism by which an effect occurs between the predictor and an outcome (Rose et al, 2004). In their conceptualization of mediation, Baron & Kenny (1986) suggest that mediation seeks to minimize the direct effects of the variables under investigation rather than eliminating them, this is what is referred to as partial mediation. Mediation enriches the understanding of how the third variable influences the relationship between the independent and dependent variable (Baron & Kenny, 1986), and is thus more useful than moderators in informing the establishment of interventions to avert adolescents' sexual risk taking behavior, consequently the current study sought to examine peer pressure as a mediator variable between developmental capacitation and sexual risk taking behavior. This was expected to provide deeper understanding on how peer pressure as a third variable influenced the relationship between developmental capacitation and sexual risk taking among adolescents.

Baron and Kenny (1986) proposed regression approach as a strategy for testing meditational analyses. In their approach, four steps are proposed, in the first step a significant relation of the independent and the dependent is required as equation 1, the second step requires a significant relationship between the independent variable and the mediator as equation 2; the third step requires a significant relationship between mediator and the dependent variable, and the fourth step, the coefficient relating the independent variable and the dependent must be larger than the coefficient relating the criterion to the predictor in the regression model with both the independent variable and the mediator predicting the dependent variable (Holmbeck, 1997; MacKinnonn, Fairchild &Fritz, 2007); if the direct path is significantly reduced, then partial mediation is said to have occurred. This approach has been criticized by researchers that it produces low power to detect mediated effects, since the strategy requires that a significant relationship between the predictor and the criterion be established. Moreover, it has been established that it is indeed possible for significant mediation to exist even without significant correlation of the two variables (Mackinnon e al, 2007).

To overcome the limitation of the regression approach of mediation, the current study adopted SEM to carry out mediation, first because it allows the testing significance of the indirect paths by bootstrapping method which is more preferred to Ordinary Least Squares (OLS) since it allows robust violation of the assumptions of normality, which is central in OLS. In addition, SEM programs can also be used to do confirmatory factor analysis and they also allow inclusion of latent variables with multiple indicators (Holmeck, 1997; Gunzler et al, 2013). While highlighting the advantage of SEM over regression approach as a statistical strategy for testing mediation, Tabachnick and Fidell (1996), point out that SEM is preferred because it provides information on

the degree of fit for the entire model after controlling for the measurement error and it also provides a less biased assessment.

Structural equation modeling was particularly appropriate in the current study because the study included latent variables with multiple indicators. SEM was appropriate to capture the relationships within a web of observed (sensation seeking, impulsivity, all indicators for sexual risk taking and susceptibility to peer pressure) and unobserved (Developmental capacitation, Sexual risk taking and susceptibility to peer pressure) variables in the study.

There exists considerable research evidence that peers influence mediates developmentally instigated capacity to make decisions and risk taking behavior among adolescents. In a study carried out by Wang, Deveaux, Lunn, Dinaj-Koci, Li and Stanton (2016) to examine the influence of sensation seeking, parental and peer influence in early adolescence using SEM, the results indicated that sensation seeking was positively associated with peer influence, which in turn increased future risk involvement. This was evidence that peer influence mediated the relationship between sensation seeking and risk involvement. While Wang and colleagues focused on general adolescent risk taking which included truancy, delinquency, substance abuse and sexual risk taking, the current study sought to examine the mediation of peer pressure on the relationship between sensation seeking, as an indicator of developmental capacitation, and sexual risk taking. It was hoped that by examining specific aspect of risk taking would provide better understanding of the aspect, besides providing specific recommendations for preventive interventions.

Researchers have pointed out that peer influence is a factor that interacts with personality traits to influence indulgence in risky behavior. Peer pressure was adopted as a mediator of the relationship between developmental capacitation and sexual risk taking behavior in the current study. Most of the studies carried out on peer pressure have not explored its mediation function, a perspective that would enrich knowledge of the role of peers in adolescent sexual risk taking. Mediation analyses provide greater insight and deeper understanding about the mechanism of action with regard to the variables under examination (Gunzler et al, 2013).

In the current study, mediation was expected to reduce the direct effect of developmental capacitation on sexual risk taking behavior among adolescents. This means that the introduction of peer pressure into the unmediated (direct) model would significantly reduce the direct effects of developmental capacitation on sexual risk taking behavior. By examining the mediation of peer pressure, the current study sought to provide additional information regarding the role of peer pressure in sexual risk taking.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design adopted in the study, area of study, study population, sample and sampling technique used in the study. The chapter also describes the various

instruments used in data collection, their reliability and validity as well as the data analysis procedures used in the study.

3.2 Research Design

Descriptive survey and correlation designs were used to gather data on the adolescents' developmental capacitation, peer pressure and sexual risk taking behavior. The descriptive survey design was appropriate since the study involved collection of data from a large population, it enables gathering of a large amount of information through description and has also been pointed out as a useful tool in identifying variables and hypothetical constructs (Gall, Borg & Gall, 1996; Oso & Onen, 2005). Correlation design was used to establish relationships between the variables in the study. Correlation provides rigorous and replicable procedure for understanding relationships, besides, it indicates the degree of relationship between quantifiable variables (Oso & Onen, 2005). The current study sought to determine the relationship between adolescents' developmental capacitation, peer pressure and sexual risk taking, consequently correlation design was suitable for the study.

3.3 Area of Study

The study was carried out in the Kisumu Municipality in Kenya. Kisumu Municipality is in Kisumu East District and it hosts the third largest city in Kenya, Kisumu. It lies within longitudes 33^0 20´ E and 35^0 20 ´E and latitudes 0^0 20´ S and $0\ ^0$ 50´S. The Municipality covers a total area of 395 km^2. Key among the challenges pointed out as threatening development in Kisumu are poverty and HIV and AIDS. Sexual risk taking among adolescents has been pointed out as the major contributor to HIV and AIDS and thus a pronounced area of concern in Kisumu Municipality (Juma et al, 2014; Nyasoro 2011; Nyende, 2011; Republic of Kenya, 2015). Njue et al (2009) pointed out that evidences of early sexual debut (13- 14 years), inconsistent use of condom during

sex, multiple sexual partners and high rate of premarital sex existed in Kisumu Municipality and were significantly contributing to increased rates of HIV and AIDs infections among the youth. The adolescents in secondary schools felt grown up enough to engage in sex which provided avenues for HIV and AIDS spread (TICH, 2005). The HIV and AIDs prevalence rate was approximated to be 15 % in the district in 2009 and 18.7 % in 2012, compared to the national prevalence rate, 5.1 % in 2009 and 5.6 % in 2012 (Republic of Kenya, 2002; Republic of Kenya, 2009; Republic of Kenya, 2015). The prevalence rate for the town area, most of which form the Kisumu Municipality had a prevalence of 15 % while the rural part of the district has a prevalence rate of 8 % (Republic of Kenya, 2009). This motivated research related to risky sexual behaviors amongst the adolescents.

The Municipality has 31 secondary schools, most of which are mixed schools except 4, two girls' only and 2 boys' only schools. It has a population density of 402.5 which is higher than the national population density of 401.1 per square kilometer (KNBS, 2012). Being a city, Kisumu has attracted a big working age population where 15-64 year olds constitute 62% of the total population. Although the town was initially predominantly Luo dominated, the increased rural urban migration has witnessed an influx of cosmopolitan population inhabiting the city. This has greatly influenced the social- cultural dynamics of the Municipality. Currently, the city's population is dominated by young people who need to be supported by those in the workforce with three quarters of the population is under 30 years old and 43.5 percent is under 15 years.

The economic situation in Kisumu Municipality is characterized by inadequate job opportunities occasioned by the increased rural urban migration, high dependency ratio resulting from

unemployment and deaths caused by HIV and AIDS, low farm produce which results to increased food insecurity and overdependence on lake fishing (Republic of Kenya, 2009). These factors provide a fertile ground for sexual risk taking behavior among adolescents.

3.4 Study Population

The study was carried out among 10,278, students in the 31 secondary schools within Kisumu Municipality. Adolescents were chosen because of the evidence on the increased prevalence of sexual risk taking amongst this group (KDHS 2008/2009; Juma, Askew, Alaii, Batholome & Borne, 2014). Thirty one (31) school counselors and 31 deputy head teachers formed the population of the study.

3.5 Study Sample and Sampling Technique

Since the study population was above 10,000, the Fishers' formula was used to compute the sample (Mugenda & Mugenda, 2003).The formula used

$$n = \frac{Z^2 pq}{d^2}$$

Where n= the desired sample size when the target population is more than 10,000

Z = the standard normal deviation at 0.05 confidence level

p= the proportion in the population estimated to have the characteristics being measured (50% in this case).

q = 1- p

d = the level of statistical significance (95% for this study)

Using the Fisher's formula 384 secondary school adolescents were selected to form the sample size of the study. The sample was drawn from 10 schools in Kisumu Municipality, which was about a third of all the schools in the municipality; eight mixed schools were selected and two

single sex schools were selected for the sample. The secondary school adolescents, who formed the unit of analyses, were selected using stratified random sampling with school type as the strata; participants were proportionately and randomly drawn from single and mixed schools in the sampled schools. Stratified random sampling was appropriate when one wants to achieve desired representation from various subgroups like the different school types in this study (Mugenda & Mugenda, 2003). Purposive sampling was used to select all the ten (10) school counselors and ten (10) deputy Head teachers of the selected schools. Out of the 384 respondents who filled the data collection instruments, only 357 were complete for useful analyses, therefore the final sample size in the study was 384.

3.6 Pilot Study

A pilot study was conducted in 3 schools within the municipality (one girls' only, one boys' only and one mixed school), which formed about 10% of the total school sample population. The total sample used in the study was 150 students. These schools were eliminated from the main study. The pilot study was important to pretest the research instruments to provide insights into areas that needed adapting into the Kenyan population since the original standard test had been developed for a western population. It was also used to enhance the content validity of the research instruments, as well as envisage the research logistics including how long it took to fill the questionnaires. This was useful information for the planning of the study. From the research instruments in the sensation seeking scale were modified to replace those that were not popular in the Kenyan context with those that were popular for example diving, skiing were replaced with boat riding and swimming which were more popular in the Kenyan setting. In the peer pressure inventory, the negative scoring of some of the items was found to confuse students and thus items requiring negative scores were restated to elicit positive responses. The original items resulted to

α values of.75, .72, .65 and .79 for impulsivity, sensation seeking, peer pressure and sexual risk taking indulgence scales respectively.

3.7 Instruments for Data Collection

The constructs of interest in the study were; impulsivity, sensation seeking, susceptibility to peer pressure and sexual risk taking. Impulsivity was measured using Barrat's Impulsivity scale II, Zuckerman's sensation scale V was used to measure sensation seeking, Clasen and Brown's peer inventory was modified to measure susceptibility to peer pressure while risk taking behavior was measured using a researcher-made questionnaire. Two focused group discussions and key informant interview schedules were used to supplement information on the constructs being measured by the instruments.

The following instruments were used to collect the relevant data:

3.7.1 Barrat Impulsivity Scale (BIS 11)

Barrat Impulsivity scale was used to measure impulsivity among the respondents. This is a thirty item likert- like scale developed by Barrat, (1994) that measures how an individual rates on a scale of 1 to 4 to statements describing impulsive behaviors. Sample items in the scale included; 'I plan tasks carefully', I act on Impulse', I am restless in class'. The items are scored on a four point scale ranging from '1' for 'rarely/never' to '4' for 'Almost always'. Non impulsive statements were reversed and a total score obtained. Higher scores are indicative of greater impulsivity. Adolescents who scored above 75 were rated as highly impulsive; those between 60 and 75 were rated as moderately impulsive while those scoring below 60 were rated as non-impulsive. See Appendix A.

3.7.2 Adapted Zuckerman's Sensation Seeking Scale V (SSS V)

Zuckerman's sensation seeking scale was used to measure the sensation seeking behavior of adolescents in the secondary schools within the municipality. This is a forty (40) item scale developed by Zuckerman (1974) to assess sensation seeking. This scale measures the four subscales of sensation seeking which are thrill and adventure seeking, disinhibition, boredom susceptibility and experience seeking. The scale has 40 paired items. The items are answered to as either true (coded 1) or false (coded 0). Some of the items in the scale were modified to reflect the Kenyan setting for example items on skiing, diving replaced with swimming or boat riding. This modification did not affect the inter- item reliability of the scale, which was $\alpha = .72$ before modification and $\alpha = .74$ after modification. The scale was scored 1 point for every high sensation seeking option, thus the highest possible score was 40. A score of 40 represented a highly sensation seeking individual while a score of zero would represent very low sensation seeking behavior. In the study respondents scoring above 20 in the scale were categorized as high sensation seekers while those scoring between 10 and 19 were categorized as moderate sensation seekers and those below 10 as low sensation seekers. See Appendix B.

To obtain a developmental capacitation score the individual indices for sensation seeking and impulsivity were added then averaged. Respondents who were both of Low sensation seeking and low impulsivity were coded 0, those that were moderate on both variables coded as 1 while those that high on the variables (sensation seeking and Impulsivity) were coded as 2. The resultant index for developmental capacitation ranged from 0, for the less developmentally capacitated to 4 for the more developmentally capacitated respondents.

3.7.3 Adapted Peer Pressure Inventory

The inventory developed by Brown and Clasen (1985) to measure peer pressure was modified to measure adolescents' susceptibility to peer pressure. The original inventory measures 'how much' pressure an individual experiences (using scales a lot, somehow and a little) but the adapted scale measured the frequency of the pressure (how often) which was translated to indicate how susceptible an adolescent is to peer pressure. The respondents were expected to rate the statements as either *often', 'sometimes', 'rarely' or 'never'*. The scale was weighted on a range of 0 for never, 1, rarely, 2, sometimes and 3 often (See Appendix C). The inventory was further broken into the five subscales namely; conformity, family involvement, peer involvement, school involvement and misconduct as already classified by Brown and Clasen, Six items that did not indicate any of the subscales were eliminated form the final instrument. This adjustments did not alter the inter-item reliability of the scale, with the resultant α changing from .65 to .69 after the adjustments.

3.7.3.1 Conformity Index

Conformity referred to as adolescents' susceptibility to conform to peer pressure. Nine (9) items in the modified peer pressure inventory measured the adolescents' susceptibility to conform to peer influence. A conformity index was computed by dividing the total individual score by 9, the total number of items in the scale that formed the Conformity subscale. Respondents whose index was 0 were rated as' low on conformity' those with an index of 1were rated as moderate and those above 2 were rated as 'high on conformity.

3.7.3.2 Family Involvement Index

Family involvement referred to adolescents' susceptibility to peer pressure to get involved in family related issues. Seven items in the peer pressure inventory measured adolescents' susceptibility to involvement in family activities. They included items such as 'how often do your friends pressurize you to do what your parents want you to do 'do things with your family, get

along with you parents'. A family involvement index was obtained by adding up all the scores for the seven items and dividing the sum by seven. Respondents whose index was 0 were rated as' low on family involvement' those with an index of 1were rated as moderate and those above 2 were rated as 'high on family involvement.

3.7.3.3 Peer Involvement Index

Peer involvement was used in the study to refer to the adolescents' susceptibility to peers' pressure to be like them or do things with them. Ten items in the inventory measured susceptibility to peer involvement. A peer involvement index was obtained by adding up all the scores for the ten items and dividing the sum by ten. Respondents whose index was 0 were rated as' low on peer involvement' those with an index of 1were rated as moderate on peer involvement and those above 2 were rated as 'high on peer involvement.

3.7.3.4 School Involvement Index

In the present study, School involvement was conceptualized as adolescents' susceptibility to pressure from their peers to indulge in positive school related tasks e.g. study hard, not skip classes and get good grades . Seven (7) items in the scale measured school involvement. A school involvement index was obtained by adding up all the scores for the seven items and dividing the sum by seven. Respondents whose index was 0 were rated as' low on school involvement' those with an index of 1were rated as moderate on school involvement and those above 2 were rated as 'high on school involvement.

3.7.3.5 Misconduct Index

Misconduct referred to adolescents' susceptibility to peer pressure to engage in unconventional behaviors like smoke marijuana, cigarette, take up fights, steal, vandalize property. Ten items in

the susceptibility to peer pressure inventory measured misconduct. A misconduct index was computed by adding up the scores for the ten items and then dividing the sum by ten. Respondents scoring 0 were rated as low on misconduct, those scoring 1 rated as moderate while those scoring above 2 were rated as high on misconduct.

3.7.3.6 Composite Index for Susceptibility to Peer Pressure

In the study peer pressure was adopted as a mediator latent variable with five indicators including conformity, peer involvement, family involvement, school involvement and misconduct. The maximum score for each of the variable was three, with the minimum as zero. The scores for five variables were summed together to a resultant composite susceptibility to peer pressure index that ranged from 0 for the less susceptible respondents to 15, for the highly susceptible respondents. The respondents whose obtained score was below 5 on the composite scale were rated as less susceptible to peer pressure, those who scored between 5and 9 were rated as moderately susceptible while those who scored between 10 and 15 were rated as highly susceptible to peer pressure.

3.7.4 Risky Sexual Behavior Scale

A researcher made questionnaire aimed at determining adolescents' indulgence in risky sexual behavior was used. The questionnaire had 10 items which focused on five sexual behavior; sexual debut, number of sexual partners, sex under the influence of drugs/alcohol, sexual experience and consistent use of protection during sex (See Appendix D). Respondents who reportedly had ever engaged in sex were coded '1' and those who had never coded '0'; respondents who had their first sexual debut before age 14 were coded as '1' while those that had their first sexual intercourse after 14 years of age/never had sex were coded '0'; respondents who always used a condom during sexual intercourse/never had sex were coded as '0', with those who rarely /sometimes used

condom during sexual intercourse coded '1'; respondents who reportedly had had 2 or more sexual partners during the last one year before the study were coded as '1' while those who had 1 sexual partner/never had sex were coded as '0'; respondents who had ever used alcohol or drugs before engaging in sex were coded '1' while those who had never used alcohol or drugs before having sex/never had sex were coded '0'. To obtain the composite variable for sexual risk-taking the five variables were added. Respondents coded '1' in the variables was categorized as high risk while those coded as '0' were categorized as low risk.

3.7.5 Interview Schedule Guide for Key Informants

An interview schedule was used to gather adolescents' sexual risk taking behavior from the school counselors and the deputy Head teachers, as key informants. This was necessary to complement the self-report questionnaires. It included items like 'What are the common sexually risky behaviors do students in your school engage in?' factors attributed to sexual risk involvement' gender differences in sexual risk taking' role of peers'(See Appendix E).

3.7.6 Focus Group Discussion Guide

Three Focus group discussions were conducted for students in the sampled schools so as to complement data collected using the questionnaires. The FGDs comprised 10 to 15 students in each of the selected school, and lasted from one hour to one and a half hours. One FGD was held in each school category i.e. Girls', Boys' and Co- educational schools with each FGDs including 8-10 students The Focus Group Discussion focused on items such as; 'common sexual behaviors that adolescents engage in,' ' how risky these behaviors are,' ' justification for indulgence in risky sexual behavior', 'sexual debut,' peers role in sexual risk taking' (See Appendix F).

3.8 Reliability of Research Instruments

The BIS 11, SSS V and the susceptibility to peer pressure inventory are standardized tests whose reliability has been established. The obtained coefficients range between 0.75 and 0.84 (Ridgeway & Russell, 1980; Santor & Messervey, 2000; Stanford,et al., 2009). However to improve on their suitability to the Kenyan setting, the instruments were pre tested to ascertain cultural appropriateness since they were originally prepared for a Western population. Necessary adjustments were made on the instruments. Besides inter item reliability of the instruments was established using Kuder Richardson 20, (KR 20) formula which resulted to $\alpha = .81$ for the impulsivity scale, .74 for the sensation seeking scale, .69 for the susceptibility to peer pressure scale, and .79 for sexual risk taking behavior scale.

3.9 Validity of Research Instruments

Content validity of the research instruments was ascertained by the experts at the Department of Educational Psychology, Maseno University. In addition the instruments were pretested and the results utilized to improve the content validity of the instruments. Bis11, SSS V and peer Pressure Inventory are standardized measuring devices whose construct validity for impulsivity, sensation seeking and peer pressure respectively has been ascertained (Zuckerman, 1974; Brown & Clasen, 1985; Ridgeway & Russell, 1980; Barrat, 1994; Santor & Messervey, 2000; Stanford, et al., 2009).

3.10 Data Collection Procedure

The researcher sought permission to collect data in secondary schools in Kisumu district from the National Council of Science, Technology and Innovations (NACOSTI), Ministry of Education and the School of Graduate Studies, Maseno University. After necessary permits were acquired, the researcher visited the sampled schools and briefed the school administration on the research and schedule for time when the research instruments can be administered. During the scheduled days

for data collection, the selected students were briefed on the study and informed about their voluntary participation, after which they individually filled in the questionnaires. Focus group discussions were organized during lunch breaks and in the evenings after the lessons with participants, the researcher took notes during the discussion and moderated the discussion to keep the participants in focus. Verbatim responses were recorded in writing by the researcher with the permission of the respondents who felt uncomfortable with their voices being recorded. Since most of the respondents were below 18 years, the school administration was approached for the consent as 'local parentis' parental consent to participate was sought through the school. Two research assistants were trained to assist in data collection.

3.11 Data Analysis Procedure

Qualitative data obtained through interviews and Focus group discussions was transcribed and coded thematically. Descriptive statistics was used to present data on prevalence of impulsivity, sensation seeking, peer pressure and indulgence in sexual risk taking behavior. To examine relationship between variables in the study, logistic regression analyses were conducted, since the dependent variable (sexual risk taking behavior) was dichotomous. Gender and age were examined as control variables in the study. To determine whether peer pressure mediated the relationship between developmental capacitation and sexual risk taking, Structural equation modeling (SEM) was employed using Analysis of Moment Structures (AMOS 22) in Statistical Package for Social Scientists (SPSS) version 20 computer software. Mediation of peer pressure in the current study was examined using Structural Equation modeling as proposed by Tabachnick and Fidell, (1996) and Arbuckle, 2012. This was done by running the direct model, mediated model and the full mediation model while comparing the direct, mediated and total effects in the model.

Model fit and parsimony was tested using Goodness of Fit Index (GFI), Comparison fit index (CFI), Tucker Lewis Index (TLI), Chi Square, and Root mean square error of approximation (RMSEA). Root Mean Square Error of Approximation (RMSEA) is a measure that incorporates a penalty for poor model parsimony and a value of 0.05 or less would indicate a close fit of the model (Steiger & Lind, 1980; Brown 2006; Arbuckle, 2012). A GFI, CFI and TLI index of 0.95 or above was considered an acceptable indicator of a good fit. While a RMSEA value of below 0.05 was considered a desirable fit (Arbuckle, 2012).

3.12 Ethical Considerations

The participants in the study were assured of confidentiality. Participation into the study was voluntary and the questionnaires were anonymous. Respondents were asked not to indicate their names or the names of their schools. Respondents not willing to participate in the study were not coerced into taking part. The respondents were briefed on the study's expectations and procedures. The Head teachers of the selected schools also signed to provide consent on behalf of the participants willing to participate in the study since most of them were from various locations outside the study area and it would have been difficult to conduct parents for each participant.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the descriptive data of the demographic variables included in the study. It also presents the results on prevalence of the developmental capacitation (sensation seeking and impulsivity), susceptibility to peer pressure (indicated by conformity, family involvement, peer involvement, school involvement and misconduct) and sexual risk taking indicators (sexual experience, sexual debut, number of sexual partners and inconsistent condom use) used in the study. The chapter also presents the logistic regression analyses for the various interrelations examined in the study. Structural models relating developmental capacitation and sexual risk taking as well as the direct model, partial mediation and full mediation model are presented. The results of gender differences in the mediation relationship between developmental capacitation and sexual risk taking are also presented.

4.2 Demographic Information

Out of a sample of 384 student respondents, 27 cases with missing information on any indicator were dropped leaving a sample size of 357 student respondents from 10 schools in Kisumu Municipality. The mean age of the respondents was 16.2 years, ranging from 13 years to 19 years. The male respondents comprised of 43.7 % (156) while the female respondents were 56.3 % (201). Out of all the respondents, 126 (35.3 %) were from single sex schools while 231 (64.7 %) were drawn from mixed schools.

4.3 Descriptive Statistics

Frequency tables and charts were used to present data on descriptive statistics of all the variables adopted in the study. The objectives of the study were relationship based, therefore it was paramount to examine the descriptive statistics of the variables before examining their interrelations. Descriptive statistics for sensation seeking, impulsivity, susceptibility to peer pressure and sexual risk taking were compared across gender and age.

4.3.1 Developmental capacitation

Developmental capacitation was construed to be a latent variable indicated by sensation seeking and impulsivity.

4.3.1.1 Sensation Seeking

Among the respondents, 250 (70%) were moderate sensation seekers, 57 (16 %) were low sensation seekers while 50 (14 %) were high sensation seekers (see Table 4.1). To compare the prevalence of sensation seeking between female and male adolescents, the data was split by gender. The results as presented in Table 4.1 indicated that sensation seeking was higher for male adolescents (21.2%) than female adolescents (8.5%). This implied that the tendency to take up risky behavior due to the sensation it produces was higher for male than for female adolescents; that more male adolescents were likely to be sensation seekers as opposed to the female adolescents. This would mean that the male adolescents are more likely to venture into novel seeking behaviors, which would be predispose them to risk taking behavior, more than their female adolescents. This is possibly as a result of the social cultural context within which the adolescents grow which present more permissiveness for the boy child as opposed to the restrictiveness exerted on the girl child (Cross, Cyrenne & Brown, 2013). These findings corroborate those of Rosenblitt et al, (2001), in their study to examine sensation-seeking behaviors in male and female college

students, which also indicated higher sensation seeking levels for male adolescents. Rosenblitt and colleagues assert that this gender difference may be explained by the inverse relationship between cortisol and sensation seeking in men.

	Sensation seeking		**Impulsivity**	
	Low SS	**High SS**	**Low Impulsivity**	**High Impulsivity**
All genders	57 (16 %)	50 (14)	157 (44 %)	26 (7.3 %)
Males	17 (10.9%)	33 (21.2%)	66(42.3%)	14 (9%)
Females	40(19.9%)	17 (8.5%)	91 (45.3%)	12 (6%)

Table 4.1 Prevalence of Sensation Seeking and Impulsivity among Adolescents

When the descriptive statistics were compared across the ages, the results indicated that sensation seeking was highly prevalent among adolescents aged 16 and 17 years who accounted for 60 % of the highly sensation seeking adolescents. This trend appeared to be consistent among the male adolescents, however, among the female adolescents, 41% of the high sensation seeking adolescents were aged 17 years (see Table 4.2).

Table 4.2 Age Disaggregated Descriptive statistics (%) of Sensation seeking, Impulsivity, Peer pressure and Sexual risk taking

Variable	**Gender**	**Age**						
		13	**14**	**15**	**16**	**17**	**18**	**19**
Sensation Seeking	Male	3	3	12.1	30.3	33.3	15.1	3
	Female	0	17.6	29.4	11.8	41.2	0	0
Impulsivity	Male	0	0	21.4	28.6	28.6	14.3	7.1
	Female	0	0	41.7	16.6	16.7	25	0
Conformity	Male	4.6	9.3	13.9	18.6	25.6	23.2	4.6
	Female	0	11.1	22.2	40	13.3	11.1	2.2
Family Involvement	Male	1.5	7.4	20.6	20.6	19.1	23.5	7.3
	Female	.9	10.2	29.6	38	16.7	4.6	0

Peer Involvement	Male	0	12.5	6.3	18.8	37.5	18.8	6.3
	Female	7.7	23.1	23.1	38.5	7.7	0	0
School Involvement	Male	1.3	7.5	16.2	23.8	28.8	16.3	6.2
	Female	.8	8.3	29.7	38.1	16.9	5.9	.8
Misconduct	Male	9.1	0	18.1	27.4	27.3	0	18.1
	Female	0	66.7	33.3	0	0	0	0
Sexual Experience	Male	1.4	2.8	12.5	16.7	34.7	20.8	11.1
	Female	0	6.3	12.5	43.8	25	10.4	2
Condom Use	Male	3.3	3.3	16.7	16.7	30	20	10
	Female	0	10.5	15.8	47.4	10.5	15.8	0
Sexual Debut	Male	2.2	4.3	19.6	21.7	30.4	13	8.8
	Female	0	10.7	17.9	53.6	17.9	0	0
Sexual partners	Male	2.9	2.9	5.9	14.7	44.1	20.6	8.8
	Female	0	5	10	50	30	10	5

The results of Table 4.2 seemed to suggest that while sensation seeking was more prevalent from 16 years of age and increasing steadily with age, for the female adolescents it appeared to be more prevalent among older adolescents. This is a likely suggestion that among younger adolescents, sensation seeking is likely to be more prevalent among male adolescents than the female adolescents.

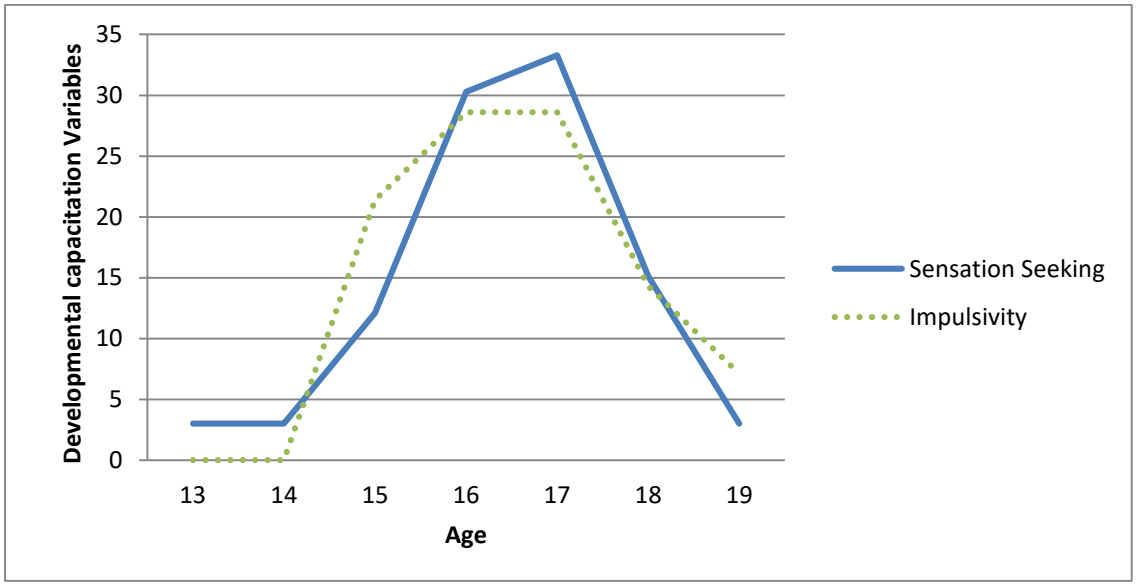


Fig. 4.1 Age disaggregated prevalence of impulsivity and sensation seeking among male adolescents

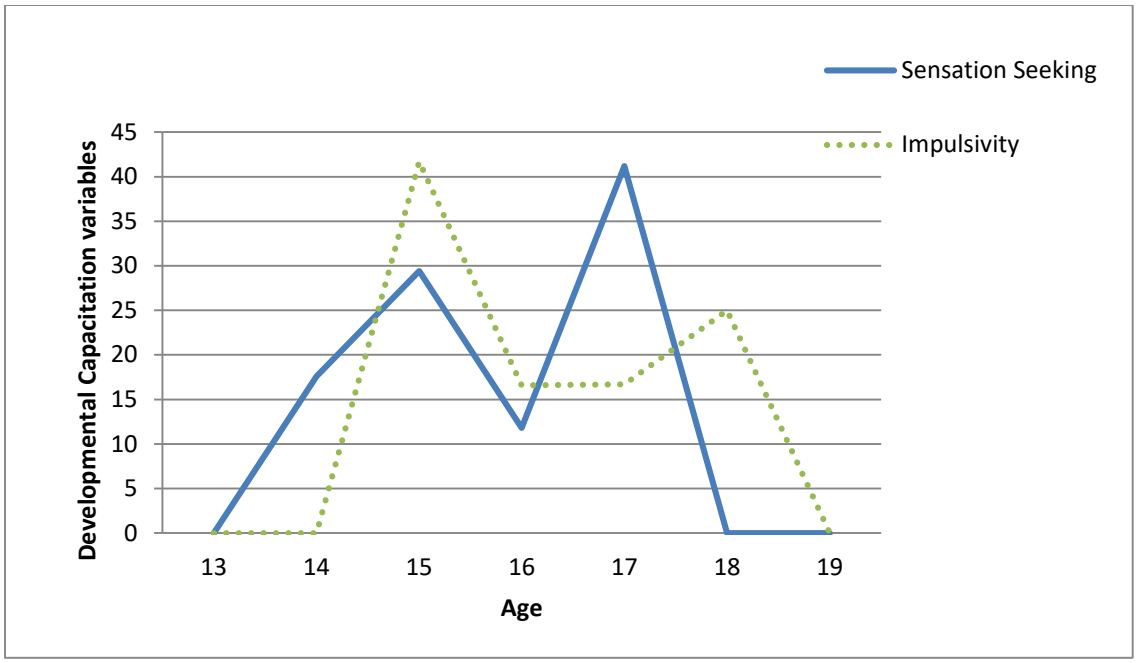


Fig.4.2 Age disaggregated prevalence of impulsivity and sensation seeking among female adolescents

4.3.1.2 Impulsivity

The results indicated that 44 % of the respondents were of low impulsivity, 48.7 % were moderately impulsive while only 7.3 % were rated as highly impulsive. Comparing the results with those of sensation seeking, it was evident that a larger percentage of the respondents (44%) were of low impulsivity as compared to only 16 % of the low sensation seekers. When the prevalence's were compared by gender, it emerged that the gender differences were not significant with regard to impulsivity as they were for sensation seeking. Mann-Whitney U test results indicated a p value of .092, resulting to the acceptance of the null hypothesis that there existed no gender differences in the distribution of impulsivity. This indicated that the distribution of impulsivity was the same for male and the female adolescents. These findings portray a contradiction of earlier findings by (Gatta et al, 2014), which found significant gender differences in adolescents' impulsivity. This difference may have resulted to the fact that Gatta and colleagues examined the different subscales of impulsivity (attentional, non-planning and motor) separately unlike in the current study where the subscales were combined. Their study found significant gender differences for the non-

planning and the motor aspects of impulsivity while, like the current study it found no significant gender differences in attentional impulsivity.

Age disaggregated descriptive statistics on the extent of impulsivity indicated that like sensation seeking, impulsivity appeared to adopt a curvilinear trend across the years, with the peak at age 16 years and 15 years for male and female adolescents respectively (See Fig. 4.1 and Fig. 4.2). According to the findings, it appeared that impulsivity was prevalent among younger adolescents but declined marginally as they grew older. This implies that the negative effects of impulsivity were likely to be detrimental at lower ages and as thus interventions needed to be employed at earlier ages. Among the male adolescents, impulsivity increased steadily between ages 15 to 17 and declined thereafter , while among the female adolescents, impulsivity declined steadily after age 15 (See Table 4.2). This is likely to place younger female adolescents at risks of negative effects that may be associated with high levels of impulsivity, since their cognitive control system is not fully developed to control the sensations stimulated by the pubertal changes occurring during this period (Steinberg, 2008).

4.3.1.3 Composite Index for Developmental Capacitation

Composite index for developmental capacitation referred to the aggregated average of the impulsivity and sensation seeking scores. Table 4.3 on the prevalence of developmental capacitation indicated that, out of all the respondents, 170 (47.6 %) were high on developmental capacitation; meaning that they were more inclined to take risks due to the developmental gap that is characteristic of the adolescent stage, compared to 57 (16 %) who were less developmentally capacitated to take up risk (See Table 4.3). This means that out of all the respondents in the study, 47.6 % of them were both high on impulsivity and sensation seeking, a situation Donhew et al (2000), point out as one that highly exacerbates sexual risk taking. When the prevalence of the

composite variable for developmental capacitation was tested for gender differences, it was found out that there existed significant gender differences between the male and female adolescents (p= .038), with a greater percentage (61.9%) of the male adolescents being high on development capacitation compared to 44.3% of the female adolescents that were high on developmental capacitation. These results indicate that male adolescents are more likely than the females to be high on both impulsivity and sensation seeking; this may have been as a result of less restrictive social-cultural context under which the boys are brought up which propagates more explorative behaviors than their female counterparts.

Table 4.3 Prevalence of Developmental Capacitation

Dev cap index	**Frequency**	**Percent**
Low	57	16
Moderate	30	36.4
High	170	47.6

Note: ***Dev Cap****= Developmental capacitation*

4.3.2 Susceptibility to Peer Pressure

Five measures namely conformity to peer pressure, misconduct pressure for family, school and peer involvements were used in the study to indicate susceptibility to peer pressure. During focused group discussions and interviews, about 50 % of the respondents pointed out that peer pressure was a major contributory factor to sexual risk taking among school adolescents.

For example a respondent remarked;

> *Mostly it is friends who make someone indulge in these bad things'*
> *It makes you feel good when you are doing like your friends, you don't want to feel out of place'*

Out of all the indicators of peer pressure susceptibility, male adolescent seemed to be more susceptible to peer pressure with an exception of school involvement and family involvement, which were relatively higher for the female adolescents (See Table 4.4). Across the ages,

conformity to peer pressure adopted a curvilinear trend with the highest pressure being adolescents aged 16 years among the male and female adolescents, after which the pressure to conform appeared to decline steadily as age advanced.. (See Table 4.2, Fig 4.3 and Fig 4.4) Similar results were obtained for all the other indicators of susceptibility to peer pressure, except for misconduct which seemed to be at its peak at a younger age of 14 years and then steadily declining across the ages. This indicates that vulnerability of adolescents to conform to their peers increases as the age advances but later declines after age 16, this implies a period of vulnerability to these group of adolescents

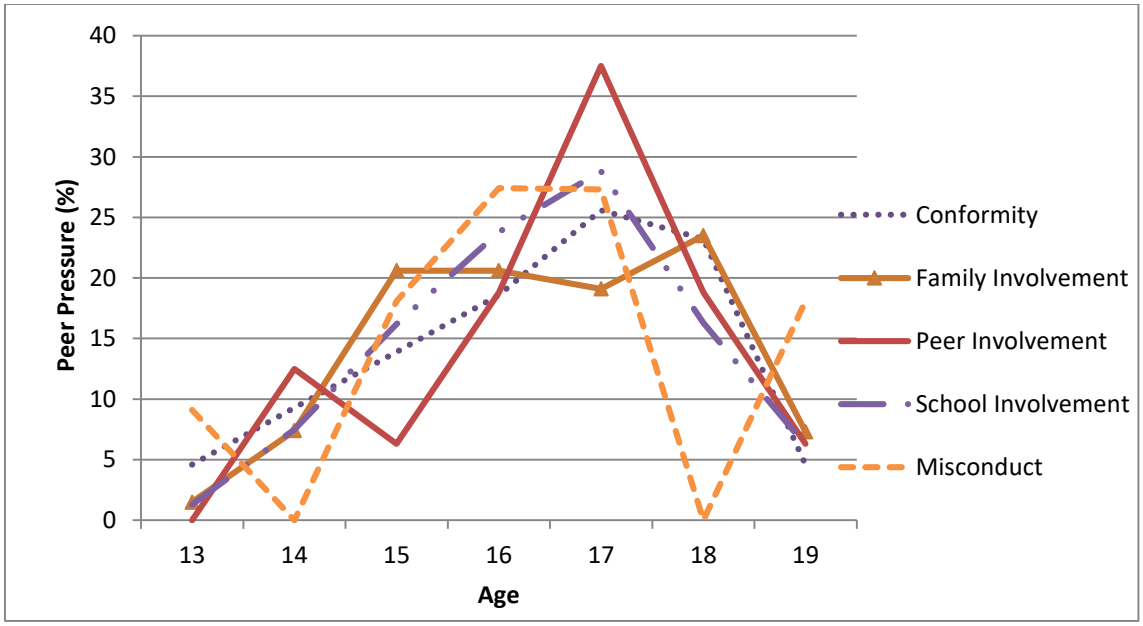


Fig. 4.3 Prevalence of peer pressure indicators by age among Male adolescents

When the statistics were compared across the ages for the male and female adolescents, the results indicated that all the indicators of susceptibility to peer pressure increased steadily until age 16 and 17 for the male adolescents before beginning to decline steadily. Among the female

adolescents, susceptibility to peer pressure seemed to increase during early years and steadily declining by age 16 (See Fig. 4.3 and Fig 4.4). This means that female adolescents' proneness to pressure for peer involvement emerges earlier in life than their male counterparts, making them more vulnerable to peer influence. This could be as a result of what Lebedina-Manzoni and Ricijas, (2013) describe as female adolescents desire to be liked by their peers which tends to drive them to want to be liked by their friends, this may dispose them to negative peer influence, including sexual risk taking.

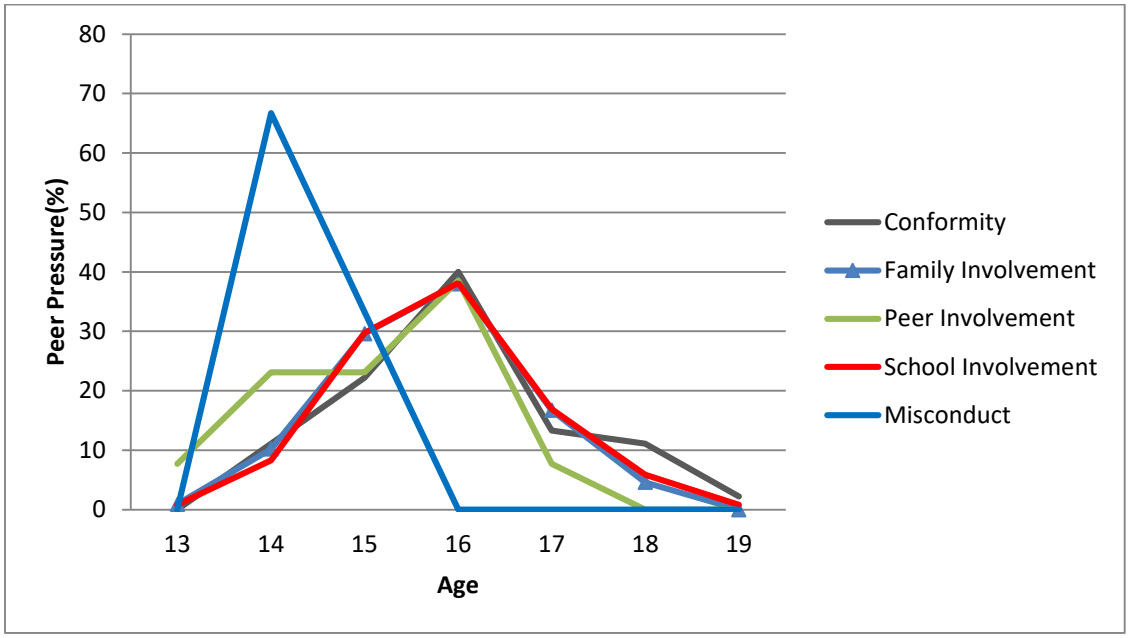


Fig 4.4 Prevalence of peer pressure indicators by age among Female adolescents

Table 4.4 Prevalence of Adolescents' Susceptibility to Peer Pressure by Gender

	Male			Female			Mann-U Sig.
	Low	**Moderate**	**High**	**Low**	**Moderate**	**High**	
Conformity	17 (10.9%)	96 (61.5%)	43 (27.6%)	40 (19.9%)	116(57.7%)	45(22.4%)	.018
Family involvement	22(14.1%)	66 (42.3%)	68 (43.6%)	26 (12.9%)	67 (33.3%)	108(53.7%)	.026

Peer involvement	21(13.5%)	119(76.3%)	16(10%)	66(32.8%)	122(60.7%)	13(6.5%)	.000
School involvement	10(6.4%%	66 (42.3%)	80 (51.3%)	17 (8.5%)	66(32.8%)	118(58.7%)	.195
Misconduct	109(69.9%)	36 (23.1%)	11(7.1%)	166(82.6%)	32 (15.9%)	3 (1.5%)	.000

The results as indicated in Table 4.4 indicated that there existed significant gender differences with regard to susceptibility to misconduct with the female adolescents being less susceptible to engaging in misconduct than the male adolescents. The gender difference may have been as a result of the fact that female adolescents are less likely to engage in a risky behavior if they judge the activity to be potentially having negative consequences (Harris & Jenkins, 2006). Besides researchers have argued that the gender differences in peer influence is related to social and behavioral pressure to conform to gender role norms. These findings corroborate those of Taylor and Wong (1996), who also found out that there existed gender difference in adolescents' susceptibility to engage in unconventional behaviors, with male adolescents being more strongly affected by peer influence.

Examination at the age disaggregated prevalence indicated that, among the male adolescents, peer pressure for misconduct increased steadily across the ages with peaks at 16 and 17 years, while among the female adolescents, pressure for misconduct increased steadily until age 14 years when it declined (see Fig. 4.3 and 4,5). This results seem to put male adolescents at a relatively risker situation for peers' manipulation across the years, than their female counterparts.

4.3.3 Sexual Risk Taking

Sexual risk taking was conceptualized as a multidimensional concept reflecting five different behaviors namely; lifetime sexual experience, sexual debut, condom use, multiple sexual partners

and alcohol/drug use before sexual intercourse. The results indicated that there were very few respondents who reportedly had sexual intercourse under the influence of drugs/ alcohol, the variable was eliminated from further data analysis. The Confirmatory Factor Analysis (presented later in section 4.10) confirmed this exclusion of sexual intercourse under the influence of drugs/alcohol as an indicator of sexual risk taking behavior since its factor loading was small (0.24). The results for each variable are presented in Table 4.5.

Table 4.5 Prevalence of Sexual risk taking Variables

Sexual risk taking indicators	**Male**		**Female**		**Total**		**Mann-U Sig.**
	Non-Risk	**Risky**	**Non- Risk**	**Risky**	**Non- risk**	**Risky**	
Sexual Experience	84(53.8%)	72(46.2%)	153(76.1%)	48(23.9%)	237(66.4%)	120(33.6%)	.000
Sexual Debut	26(36.1%)	46(63.9%)	20 (41.7 %)	28(58.3%)	46(38.3%)	74(61.7%)	.000
Condom use	42(58.3%)	30(41.7%)	29 (60.4%)	19(39.6%)	71(59.2%)	49(40.8%)	.008
Number of Partners	38(52.8%)	34 (47.2%)	28 (58.3%)	20(41.7%)	66(55%)	54(45%)	.000

From Table 4.5, 120 respondents had a lifetime sexual experience, which comprised of 33.6 % of all the respondents. Out of these, 74 (61.7 %) had their first sexual intercourse before they were 14 years old, 49 (40.8 %) did not consistently use a condom in sexual intercourse. These results seemed to reflect the opinions of the adolescents during focused group discussions; respondents pointed out that although they considered condom use as a protective measure from sexually transmitted infections, they were reluctant to use it since they considered it ‘uncomfortable’ as it ‘reduced enjoyment’. During focused group discussion, a third of the respondents reported that with the increased awareness in voluntary medical male circumcision (VMMC) in the region and its effect on reducing HIV and AIDs infection, there was a notion among the adolescents’

participants that they would adopt VMMC as a protective measure rather than use condoms. Some of the respondents said;

> *'Condoms are uncomfortable because they reduce enjoyment' (A male adolescent from a Mixed school)*
>
> *'condoms usually trap the soup'(a female adolescents from a Mixed school)*
>
> *' Now with circumcision no need for condom any more' (A male respondent from a Single sex school)*

The results indicated that 54 respondents (45%) had more than one sexual partner in the last one year before the study. The male adolescents reportedly had multiple sexual partners to act as a 'security measure' so that incase one partner left they would always be left with others. A male adolescent from a single sex school said;

> *You need many girls so that if one leaves you, you are left with the other, it also gives you experience and you feel good.*

The female adolescents had multiple partners, the richer one to finance their needs and the school boyfriend to provide company. This was a common perception that emerged during the focused group discussions.

Out of the four sexual risk taking variables, it was clear that most of the respondents were high risk takers with regard to sexual debut i.e. (61.7 %) had engaged in sex before they were 14 years of age. This implied that the adolescents in Kisumu Municipality were engaging in sexual intercourse too early before their cognitive control system is fully developed to objectively appraise the risk involved a situation researchers argue increases the risk associated with sexual intercourse (Berns, Moore & Capra, 2009; Steinberg, 2008) . Researchers agree that early sexual debut poses great danger since the younger the adolescents the more vulnerable they were and the less skilled they are likely to be in negotiating for safer sex and therefore they risk dating violence,

early pregnancies, HIV infections and other STIs (Robinson, 2010; Njue et al, 2009). These findings support the results of the Kenya Health Demographic Survey (KDHS) of 2008/2009; which identified Nyanza province's sexual debut at 16 years, and that age at first intercourse marked the time at which individuals' first risked exposure to HIV infection (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010).

When the prevalence of the sexual risk taking indicators were examined by gender, differences across all the four sexual risk taking indicators was statistically significant at $\alpha = .05$ (See Table 4.5). For sexual experience, a higher percentage of the male adolescents had ever engaged in sexual intercourse than the female adolescents, a difference that was statistically significant ($p = .000$), implying that male adolescents were more likely to be sexual risk takers with regard to lifetime sexual experience. Further, it implies that male adolescents were more likely to have had sexual intercourse.

One male adolescent pointed out that;

> *although we know it's (sex) negative consequences, it is not easy to avoid it; our 'feelings' keep driving us to it (sex),*
>
> *'chilling', (a sheng' term for keeping off premarital sex), is backward and it denies one an opportunity to gain sexual experience.*

Media and peer pressure were blamed as factors that promoted sexual engagement rather than abstinence. Similar trend was evident for all the four sexual risk taking variables (See Table 4.6). These results compliment the finding of the KHDS of 2008/2009, that indeed more men than women are likely to begin sexual engagement earlier and are more likely to have multiple partners (KNBS & ICF Macro, 2010). These results replicate those of Puente et al, (2010) which showed a

higher prevalence for sexual risk taking behaviors for boys than girls; boys had more sexual partners and used condoms less frequently than the girls. The results were significant at p< .001. When the descriptive statistics for the indicators of sexual risk taking behavior were examined across the ages, the results indicated that for all the indicators, the behaviors adopted a curvilinear pattern with ages 16 and 17 being the peak of indulgence these sexually risky behaviors. The results indicate that, adolescents' vulnerability increases with age and are at its peak at ages 16 and 17 after which the vulnerability begins to decline (See Fig. 4.5 and 4.6). This brings out age as a vital aspect of consideration for intervention of adolescents indulgence in sexually risky behavior.

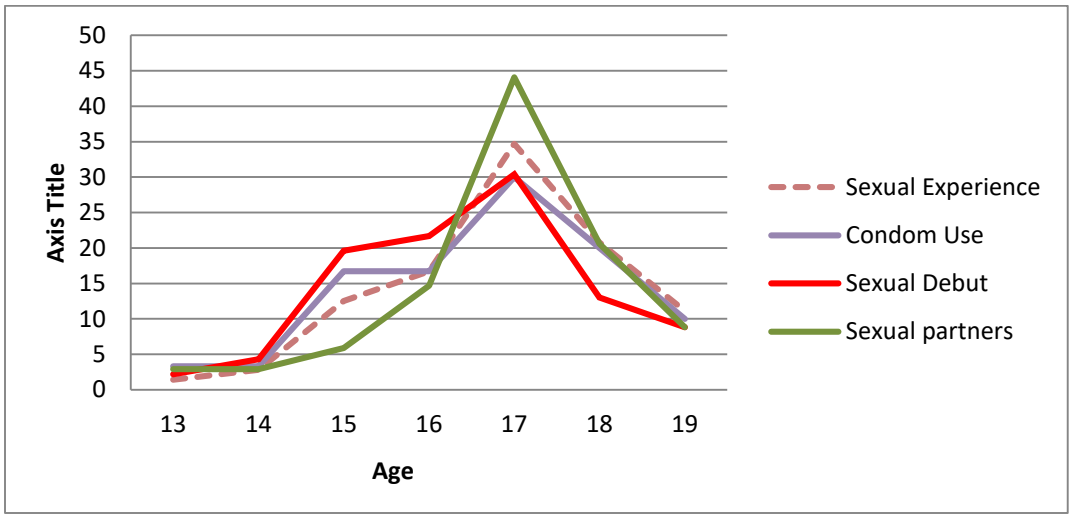


Fig. 4.5 Prevalence of Sexual risk taking by age among Male adolescents

Generally, the prevalence of sexual risk taking appeared to adopt a meso-kurtic distribution among the male adolescents, implying a normally distributed spread of the risk taking across the ages, while the sexual risk taking appeared to adopt a platy- kurtic distribution with a negative skew, indicating higher prevalence among older adolescents. This confirms most researchers' findings that point out mid adolescence as a period of heightened vulnerability to take up risks (Juma et al, 2014: Ochieng, 2013).

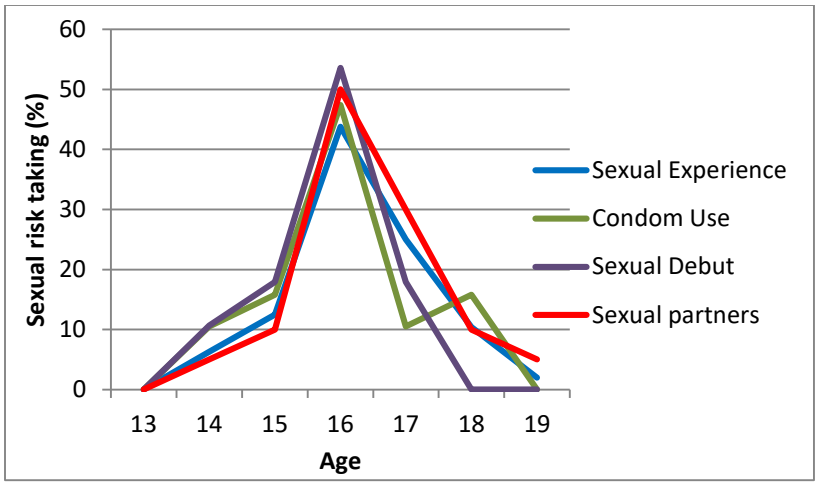


Fig. 4.6 Prevalence of Sexual risk taking by age among Female adolescents

4.4 Bivariate Correlations

To address the objectives in the study, it was prudent to examine the bivariate correlations as a preliminary step in a correlation-based study. Since the dependent variable in the study (sexual risk taking behavior) was dichotomous, Spearman rank correlations were run and the results are indicated in Table 4.6. The results indicated that most variables had positive significant correlations. The correlations between sexual risk taking behavior and susceptibility to school and family involvement were negative (-.083 and, -.034 respectively) but non-significant at 95 % confidence interval. The correlations for conformity, peer involvement and misconduct were positive and significant at 95 % confidence interval (.140, .167 and .260 respectively), which indicated that increase in these behaviors was likely to result into an increase in sexual risk taking behavior. The correlation coefficient for sexual risk taking and the variables of developmental capacitation were .182 ($p < .05$) and .100 ($p > .05$) for sensation seeking and impulsivity respectively. This indicated that sensation seeking significantly correlated with sexual risk taking, and further that adolescents high on sexual risk taking are also likely to engage in sexual risk taking behavior.

These results seem to suggest that adolescents who seek out for novel experiences and also take up things without much forethought are likely to indulge in sexual risk taking possibly as a novel experience as well. This predisposes the adolescents to the dangers associated with sexually risky behaviors which may include, contracting sexually transmitted infections, abortions due to unwanted pregnancies and deaths. These findings are congruent to those of Donohew et al (2000) who established that sensation seeking and impulsive decision making were strongly related to sexual risk taking behaviors. Similarly, the findings corroborate those of Schweitzer (2011) that sensation seeking is a significant predictor of sexual risk taking behavior.

Table 4.6 Bivariate correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Age	1.000															
Gender	-.285**	1.000														
School type	.131*	.011	1.000													
sexual experience	.260**	-.234**	-.045	1.000												
sexual debut	.019	-.190**	-.013	.719**	1.000											
Condom use	.078	-.141**	-.080	.561**	.499**	1.000										
sexual partners	.280**	-.254**	-.016	.938**	.692**	.524**	1.000									
Sensation seeking	.063	-.196**	-.005	.188**	.170**	.118*	.209**	1.000								
Impulsivity	.025	-.043	-.075	.153**	.036	.097	.116*	.078	1.000							
Conformity	-.013	-.103	.066	.202**	.167**	.086	.196**	.303**	.176**	1.000						
Family Involvement	-.134*	.085	.078	-.066	-.057	-.009	-.090	-.123*	-.045	-.044	1.000					
Peer Involvement	.035	-.237**	-.075	.198**	.120*	.073	.209**	.218**	.118*	.435**	.017	1.000				
School Involvement	-.065	.056	.072	-.015	-.013	-.062	-.038	-.129*	-.070	.032	.428**	.060	1.000			
Misconduct	.043	-.157**	-.008	.232**	.235**	.171**	.259**	.278**	.134*	.310**	-.214**	.309**	-.205**	1.000		
Developmental Capacitation	.058	-.110*	-.051	.189**	.106*	.113*	.158**	.555**	.748**	.272**	-.062	.139**	-.077	.186**	1.000	
Sexual risk taking	.159**	-.217**	-.058	.864**	.831**	.648**	.856**	.182**	.100	.140**	-.083	.167**	-.034	.260**	.148**	1.000

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.5 Relationship between Developmental Capacitation and Sexual Risk Taking

The first objective of the study sought to determine the relationship between developmental capacitation and sexual risk taking. Since Developmental capacitation was conceptualized as a latent variable indicated by two personality traits, impulsivity and sensation seeking, individual relationships of the traits with sexual risk taking were examined before being combined.

4.5.1 Impulsivity and Sexual Risk Taking Behavior

Impulsivity was adopted in the study as an indicator variable to adolescents' developmental capacitation. The correlation coefficient for composite sexual risk taking behavior and impulsivity was .100, $p > .05$, indicating a non-significant correlation. When the relationship between impulsivity and individual variables for sexual risk taking was examined, the results indicated that all the four sexual risk taking variables correlated positively with impulsivity but only sexual experience and number of sexual partners were significant at 95 % confidence level (See Table 4.6). Of all the variables, sexual experience was found to have the highest correlation coefficient ($r= .153$; $p<.05$) (see Table 4.6). These findings indicated that adolescents who were impulsive were also likely to engage in sex, without much thought. This indicates a dangerous trend among adolescents, since the decision to have sex could be the all determining factor into whether or not the sexual activity is risky or not.

A logistic regression analysis conducted to predict sexual risk taking using impulsivity indicated that the model was fit ($\chi2 = .005$ (1), $p >.05$), with impulsivity predicting 72.5 % variance in sexual risk taking correctly (See table 4.7). The odds ratio (OR) indicated that an increase in impulsivity increased the odds ratio for the likelihood of indulgence in risky sexual risk taking by 1.442 times (OR= 1.442 (95 % CI: .991- 2.1)). This indicated that impulsivity was significantly associated to

sexual risk taking, indicating that adolescents that acted impulsively, were more likely to indulge in sexually risky behavior as opposed to their counterparts who were less impulsive

Table 4.7 Relationship between Indicators of Developmental Capacitation and Sexual Risk Taking Behavior

	H-L test	**Pseudo R^2**	**Wald Statistic**	**Sig.**	**Exp(B)/ OR**	**-2LL**	**% of correct prediction**
Impulsivity	.005 (p>.05)	.015	3.655	.046	1.442	415.956	72.5
Male	.273 (p>.05)	.001	.067	.795	1.070	207.812	61.5
Female	.21 (p<.05)	.044	5.499	.019	2.023	189.313	81.1
Sensation seeking	.023 (p>.05)	.048	11.483	.001	2.175	407.474	73.1
Male	.538 (p>.05)	.036	3.989	.046	1.847	203.732	63.5
Female	1.458 (p>.05	.028	3.366	.067	1.941	191.412	81.1
Developmental Capacitation	1.124 (p>.05)	.038	8.856	.003	1.484	409.986	72.5
Male	.509 (p>.05)	.005	.527	.468	1.141	207.345	61.5
Female	2.037 (p>.05)	.077	8.392	.004	1.863	185.025	81.1

When gender differences were examined, the model predicting sexual risk taking from impulsivity was found to be fit for both genders ($\chi2$ (1) = .273 (1), p >.05 and $\chi2$ (1) = .210, p >.05)), see Table 4.7. However, when the Wald statistics were compared for male and female adolescents, it was established that the Wald static for the male adolescents' model was not significant ($\chi2$ = .067 (1), p >.05, despite the model being fit. The female adolescents model seemed to make significant contribution to the prediction of sexual risk taking from impulsivity ($\chi2$ (1) = 5.499), p <.05). These results seemed to suggest that impulsivity was a significant variable in sexual risk taking behavior among female adolescents. Further the results indicated that an increase in one unit of impulsivity increased the likelihood of sexual risk taking among the female adolescents by 2.023 times (OR= 2.023 (95 % CI: 1.123 – 3.647). This depicts gender as an important variable in

examining the contribution of impulsivity to sexual risk taking; impulsivity significantly predicts the likelihood of a female adolescent to engage in sexual risk taking. Since earlier results in Table 4.2 indicated that impulsivity was more prevalent among younger adolescents, aged 15 years, without proper interventions, impulsivity is likely to affect female adolescent, because the young age predisposes them to risker decision making.

4.5.2 Sensation Seeking and Sexual Risk Taking

Sensation seeking was adopted as the second indicator of developmental capacitation. To determine the relationship between sensation seeking and sexual risk taking, Sensation seeking was correlated with individual indicators of sexual risk taking behavior as well as with the composite variable. Correlations of the sexual risk taking indicators resulted to positive significant coefficients at 95 % confidence level (.188, .17, .118, and .209 for sexual experience, early sexual debut, condom use and number of sexual partners respectively) (See Table 4.6). This implied that increased need for novel experiences was likely to result into increased sexual risk taking behavior.

Unlike impulsivity which had the coefficient for sexual experience being the highest, for sensation seeking, the coefficient for number of sexual partners was the highest, $r = 0.209$, $p<.05$; implying that while adolescents who are highly impulsive are likely to indulge in sexual intercourse, those who were high sensation seekers are not only likely to have engaged in sex but also are likely to have multiple sexual partners; implying that sensation seeking seemed to drive adolescents to wanting to have multiple sexual partners. This could be as a result of what Zuckerman (1994), points out that sensational seekers are attracted to varied and arousing stimuli and multiple sexual partners would be viewed as varied experience for a sensation seeking adolescent.

Results of logistic regression indicated that sensation seeking indicated that sensation seeking significantly predicted sexual risk taking among adolescents. EXP(B) value indicated that when sensation seeking is raised by one unit an adolescent was 2.175 times more likely to engage in sexual risk taking behavior (OR= 2.175 (95 % CI: 1.388 – 3.409)). The regression model with sensation seeking as a predictor correctly predicted 73.1 % of sexual risk taking (see Table 4.7). Unlike impulsivity, sensation seeking appeared to be a better predictor of adolescents' sexual risk taking. This finding was also confirmed by the -2 log likelihood of the two indicators, where the -2 log likelihood coefficient for sensation seeking (407.474) was lower than that of impulsivity (415.956) as indicated in Table 4.7. This meant that sensation seeking was a better predictor of the sexual risk taking than impulsivity, a conclusion that was confirmed by the Nagelkerke's R^2 which was higher for sensation seeking (.045) than for impulsivity (.015).

The results of logistic regression analyses indicated the model with sensation seeking and sexual risk taking behavior was fit, χ^2 (1) = .023 (p>.05); In addition, the Wald statistic also indicated that sensation seeking made significant contribution to the prediction of adolescents sexual risk taking behavior among the male adolescents χ^2 (1) = 11.483, , p <.05, see Table 4.7. Sensation seeking significantly predicted the likelihood of indulgence in sexual risk talking by a likelihood of 1.847 (OR= 1.847 (95 % CI: 1.011 – 3.373)).

When the results were analyzed by gender, the results indicated that sensation seeking significantly contributed to sexual risk taking among male adolescents but not for the female adolescents. Among the male adolescents, the full model against a constant only model was significant (χ^2 (1) = 3.989, p< .05), indicating that sensation seeking made significant contribution to the prediction of male adolescents' sexual risk taking behavior (p <.05), However it did not make significant

contribution for the female adolescents (χ^2 (1) = 3.366, p> .05), indicating that sensation seeking did not make significant contribution to the prediction of female adolescents sexual risk taking behavior (p = .067). The odds ratio indicated that a male adolescent was 1.847 times more likely to engage in sexual risk taking behavior when his sensation seeking was raised by a unit (OR= 1.847 (95 % CI: 1.011 – 3.373). The results seem to suggest that sensation seeking was a key factor affecting sexual risk taking among the male adolescents. This may be because of higher propensity to choose risky behaviors among male adolescents as well as social and behavioral pressures to conform to the prescribed gender expectations as suggested by Booth & Nolen, (2009).

4.5.3 Relationship between Composite Developmental Capacitation and Sexual Risk Taking

Developmental capacitation was conceptualized as the differential ability of the adolescents to asses risk; in the study it was adopted as a latent variable with sensation seeking and impulsivity as the indicator variables. The score for impulsivity and sensation seeking were summed up to come up with the score for developmental capacitation. The results of logistic regression analyses indicated the effects of developmental capacitation on the model were significant, χ^2 (1) = 9.627, p <.05; indicating that developmental capacitation made significant contribution to the prediction of adolescents sexual risk taking behavior. EXP(B) value indicated that when developmental capacitation is raised by one unit the odds ratio is 1.484 times as larger and therefore an adolescent is 1.484 times more likely to engage in sexual risk taking behavior.

When logistic regression analyses was conducted with sensation seeking and impulsivity as predictors using forward stepwise Likelihood ratio, the results indicated that sensation seeking was a better predictor of sexual risk taking than impulsivity. Indeed impulsivity was removed from the model, which was found to be fit χ^2 (1) = .023, p >.05. The resultant model indicated that a unit

increase in sensation seeking would result to a likelihood increase in sexual risk taking behavior by 2.175 times (OR= 2.175 (95 % CI: 1.388 – 3.409)). However when the models for different genders were compared it emerged that while sensation seeking was a better predictor of sexual risk taking behavior for male adolescents χ^2 (1) = 3.989, p <.005, impulsivity was a better predictor of sexual risk taking behavior for the female adolescents (χ^2 (1) = 5.499, p <.005) as indicated in Table 4.7.

The forward stepwise likelihood ratio logistic regression method eliminated impulsivity from the final male adolescents' model while sensation seeking was eliminated the female adolescents' model. This difference may be as a result of the differences in culturally transmitted social norms that encourage men to be more willing to take up novel/intense activities for the pleasure involved (Cross et al, 2013); as such men would be more willing to take up risky sexual behaviors due to the sensation they produce while women would be more likely to take up such behaviors due to impulsive behavior.

Table 4.8 Relationship between Impulsivity, Sensation Seeking and Sexual Risk Taking Behavior

Gender		**H-L test**	**Pseudo R^2**	**Wald Statistic**	**Sig.**	**Exp(B)/ OR**	**-2LL**	**% of correct prediction**
Male		.538	.036				203.732	63.5
	Sensation seeking	(p>.05)		3.989	.046	1.847		
	Constant			8.892	.003	.314		
		.210						
Female		(p>.05)	.044				189.313	80.6
	Impulsivity			5.499	.019	2.023		
	Constant			43.969	.000	.144		

The Exp(B)/ Odds ratio values were consistently higher for the female adolescents (see Table 4.8); indicating that when sensation seeking and impulsivity were each raised by one unit the female adolescents were more likely to engage in sexual risk taking behavior as a result of sensation seeking and impulsivity, as compared to a male adolescents. This meant that female adolescents

who were both impulsive and sensation seekers were more likely to engage in risky sexual behaviors more than their male counterparts.

Table 4.9 Bivariate Correlations between Developmental Capacitation and Susceptibility to Peer Pressure

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Conformity	1							
Family	.-.044	1						
Involvement	(.024) ***(-.073)***							
peer involvement	.435**	.017	1					
	(.373**) ***(.450**)***	(-.081) ***(.117)***						
School involvement	-.032	.428**	.060	1				
	(.064) *(.021)*	(457**) ***(.400**)***	(.007) ***(.139*)***					
Misconduct	.310**	-.214**	.309**	-.205**	1			
	(.291**) ***(.311**)***	(-.334**) ***(-.084)***	(.255**) ***(.316**)***	(-.230**) ***(-.168*)***				
Sensation seeking	.303**	-.123	.218**	-.129	.278*	1		
	(.291**) ***(.349**)***	(-.313**) ***(.049)***	(.201*) ***(.165*)***	(-.213**) ***(-.054)***	(.368**) ***(.154*)***			
Impulsivity	.176**	-.045	.118*	-.070	.134*	.078	1	
	(.114) ***(.214**)***	(-.182*) ***(.066)***	(.074) ***(.142*)***	(-.082*) ***(.021)***	(.232**) ***(.034)***	(.094) ***(.053)***		
Developmental	.272**	-.062	.139**	-.077	.186**	.555	.748**	1
capacitation	(.186*) ***(.324**)***	(-.234**)***(.085)***	(.149) ***(.106)***	(-.146)***(-.018)***	(.275**) ***(.093)***	(.425**)***(.645**)***	(.825**) ***(..689**)***	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Bracketed coefficients for the male adolescents

Bracket italicized- coefficients for female adolescents

4.6 Relationship between Susceptibility to Peer Pressure and Sexual Risk Taking Behavior

The second objective of the study was to determine the relationship between susceptibility to peer pressure and sexual risk taking behavior. This was addressed using spearman ranks correlations (Table 4.6) and also logistic regression analyses. The results of a logistic regression model between sexual risk taking and all the five indicators of susceptibility to peer pressure (conformity, family involvement, School involvement, peer involvement and misconduct) indicated that only peer involvement and misconduct significantly contributed to the model (see Table 4.10).

Using forward stepwise likelihood ratio logistic regression method (Forward LR) sexual risk taking behavior as the criterion and all the indicators of peer pressure as indicators (Conformity, peer involvement, school involvement, family involvement and misconduct), only misconduct and peer involvement were retained in the model, making correct prediction of 73.7%. These results suggested that, when it comes to sexual risk taking, peers influence in aspects of misconduct and susceptibility to act and be like their peers, were the two major aspects of peer pressure that significantly contributes to indulgence in sexual risk taking behaviors among adolescents. This calls for need to develop interventions that address these two aspects of peer pressure.

4.6.1 Conformity and Sexual Risk Taking

To establish the relationship between susceptibility to peer pressure and sexual risk taking behavior, logistic regression and correlation analysis were run for the variables. From bivariate correlations (see Table 4.6), conformity had positive correlation with all the indicators of sexual risk taking which were all significant at 99% confidence interval except the correlation between conformity and condom use (0.202 ($p<0.01$); 0.167 ($p<0.01$and 0.196 ($p<0.01$) were obtained for sexual experience, sexual debut and sexual partners respectively). The relationship between conformity and condom use was not significant, $r = .086(p > .005)$.

This indicated that conformity to peer pressure significantly contributed to increase in indulgence in sex, having sexual intercourse before age 14 years and having multiple sexual partners. This is likely to put adolescents at a considerably vulnerable situation while making decisions that regard sexual risk taking in the presences of their peers. These results corroborated what most other researcher have found, that indeed peers play a crucial role in adolescents'' sexual risk taking choices (Gardner & Steinberg, 2005; King'ori, 2014; Vitulano, 2009). This may be because of the fact that during adolescence, peers play a vital role in defining the identity and behavior of the individual, and sexual behavior is no exemption.

The findings of the current study indicate that adolescents who are prone to conform to peer influence were more likely to take up sexual risk taking behavior. These findings supports what several other researchers have found out, that adolescents are prone to peer influence and are more likely to take up risky behaviors as a result of peer influence (Arnett, 1992; Steinberg & Kathryn, 2007; Gardner & Steinberg, 2008). Logistic regression analyses indicated that conformity was not a significant predictor of adolescents sexual risk taking behavior, Wald χ^2 (1) = .073; p> .05, indeed conformity was removed from the stepwise logistic regression where all the susceptibility to peer pressure variables were entered.

However, when data was split by gender; the results indicated that the model for sexual risk taking and indicators of peer pressure susceptibility for female adolescents was fit (1)= 1.347, p>.05, indicating 66.7 % correct prediction of the model which only retained family involvement as a significant predictor of sexual risk taking among male adolescents. The results indicated a decrease in the likelihood of sexual risk taking among the male adolescents by .488 with a unit increase in

family involvement (OR=.488 (95 % CI: .305- .783)) as shown in Table 4.11. This was an indication that, increased family connectedness was an important factor in reducing involvement in sexual risky behaviors among the male adolescents. This is likely to be as a result of the family/parental advise provided that are more likely to discourage indulgence in sexually risky behaviors.

Table 4.10 Step-wise Logistic Regression Model Results for the Relationship between Indicators of Susceptibility to Peer Pressure and Sexual risk taking Behavior

	H-L Test	Pseudo R^2	Wald Statistic	Sig.	Exp(B)/OR	-2LL	% of correct prediction	95% CI for OR	
								Lower	Upper
Step 1[a]	0	.068				402.372	72.5		
Misconduct			16.219	.000	2.239			1.513	3.315
Constant			77.555	.000	.291				
Step 2[b]	1.064 (P=.900)	.086				397.628	73.7		
Peer Involvement			4.585	.032	1.594			1.04	2.443
Misconduct			9.825	.002	1.936			1.281	2.926
Constant			27.018	.000	.140				

a. Variables entered in Step 1: Misconduct
b. Variables entered in step 2: peer involvement

4.6.2 Family Involvement and Sexual Risk Taking

When susceptibility to family involvement was correlated with sexual risk taking behavior among the adolescents, the results indicated a negative relationship of -.083 ($p>0.05$), however this coefficient was found not to be significant (See Table 4.6). Similarly, the correlation between the individual indicators of sexual risk taking and peer pressure to family involvement were also non-significant (See Table 4.6).

Results of stepwise logistic regression indicated that family involvement was significant factor that predicted sexual risk taking behavior among the male adolescents. A significant Wald χ^2 of 8.862., $p< .05$, was obtained. Further examination of the Odds ratio indicated that a unit increase

in family involvement was likely to result to a likelihood of a decline in sexual risk taking behavior by .488 times, (OR=.488 (95% CI:.305- .783)). These findings support those of Lebedina-Manzoni & Ricijas, (2013) which reported significant contribution of family as a factor determining sexual risk taking behavior among adolescents. Similarly, Otanga and Wang'eri (2013) also established from their study that parental monitoring was a protective factor for involvement in sexually risky behavior among adolescents. This implied that while susceptibility to family involvement had a bearing on male adolescents' sexual risk taking behavior it had non-significant contribution for the female adolescents; consequently the role of family is very key in addressing sexual risk taking especially among the male adolescents. This may be because parents and by extension family, plays an important role in developing self-efficacy among their children which result into a sense of self control, which is likely to have an effect in averting sexually risky behavior.

Table 4.11Step wise Logistic Regression Model Results for the Relationship between Indicators of Susceptibility to Peer Pressure and Sexual risk taking Behavior by Gender

	H-L Test	**Pseudo R^2**	**Wald Statistic**	**Sig.**	**Exp(B)/OR**	**-2LL**	**% of correct prediction**	**95% CI for OR**	
								Lower	**Upper**
Male Step 1	1.347 (p=.347)	.079				198.492	66.7		
Family Involvement			8.862	.003	.488			.305	.783
Constant			4.142	.042	3.144				
Female Step1	0	.086				183.915	81.6		
Misconduct			9.805	.002	2.872			1.484	5.558
Constant			67.32	.000	.176				

4.6.3 Peer Involvement and Sexual Risk Taking Behavior

Bivariate correlations indicated a positive significant relationship between susceptibility to peer involvement and sexual risk taking ($r = .167$, $p < .05$). Individual indicators of sexual risk taking behavior also resulted to positive significant correlation coefficients except for the coefficient of condom use (.073, $p > .05$) which was not significant at 95 % confidence level (See Table 4.6). This

implied that adolescents who are susceptible to peer pressure were also likely to indulge in sexually risky behaviors. This may be due to the fact that peers are the dominant socializing agent during adolescents, who play a pivotal role in sexuality issues as well as the increased need for peer approval among adolescents as highlighted by several researchers (Acton 2003, Fleming et al, 2002; Papalia et al, 2004; Steinberg, 2008).

Stepwise logistic regression indicated that peer involvement made significant contribution to the prediction of adolescents sexual risk taking behavior, (OR=1.594 (95 % CI:1,04- 2.443), indicating that a unit increase in peer involvement resulted to a likelihood of an increase in sexual risk taking by 1.594 times (see Table 4.10). These results implied that adolescents, who are susceptible to being influenced by their peers to take up things that their friends were engaging in, were more likely to take up sexually risky behaviors. This seem to indicate that adolescents who perceived connectedness to their peers were more likely to be influenced by the peers into sexual risk taking, a finding supported by Cherie and Berhane (2012), who found out that peer factors accounted for 58.5% in the final regression model.

When individual sexual risk taking behaviors were examined, it was found out that the coefficient correlation for sexual experience was the highest ($r = .212$; $p < .05$). This meant that indeed peers play a crucial role in influencing adolescents to engage or not to engage in sexual intercourse These results corroborate the findings of the American Psychological Association (APA, 2006), that among adolescents aged 12 to 18 years 61% of the girls and 23 % of the boys had sex due to peer pressure as well as the findings of Crockett et al (2006) who asserted that negative peer pressure

in early adolescence predicted adolescent risky sexual behavior and they propose that peer pressure was a useful target of intervention in early adolescence (APA, 2002).

4.6.4 School Involvement

Adolescents' susceptibility to pressure for school involvement correlated negatively with the composite variable for sexual risk taking behavior ($r = -.034$, $p > .05$), indicating non-significant correlation. These findings were contrary to those of Cherie and Berhane, (2012), which indicated that school connectedness contributed significantly to the prediction of adolescents' sexual risk taking, although they were also quick to point out that generally, peer connectedness was a better predictor than school connectedness.

4.6.5 Misconduct

The tendency of adolescents to engage in misconduct as a result of peer pressure correlated positively with sexual risk taking behavior ($r = .260$; $p < .05$). Adolescents who are easily pushed by their friends to engage unconventional behavior are also likely to also engage in sexual risk taking. When relationship between misconduct and individual indicators for sexual risk taking was examined, it was established that misconduct correlated positively with all the indicators of sexual risk taking with that of number of partners being the highest (.259, $p<.05$) (see Table 4.6).

Stepwise regression analyses indicated significant Wald χ^2 (1), 9.825 $p< .05$; implying that misconduct contributed significantly to the model involving indicators of susceptibility to peer pressure and sexual risk taking behavior (see Table 4.10). The Exp(B) value was 1.936; indicating that an increase in one unit of misconduct, increased the likelihood of an adolescent to engage in sexual risk taking behavior by 1.936 times (OR= 1.936 (95 % CI: 1.281-2.926)). Comparison

across the genders indicated that while misconduct significantly predicted sexual risk taking for the female adolescents, the model was not fit (H-L χ^2 (0) = .00, p < .05).

4.7 The Relationship between Developmental Capacitation and Susceptibility to Peer Pressure

The third objective of the study was to determine the relationship between the developmental capacitation (exogenous variable) in the study and Susceptibility to peer pressure (mediator). To accomplish this, bivariate and logistic regression analyses were run for the developmental capacitation variable and the indicators of susceptibility to peer pressure. From Table 4.9, developmental capacitation composite variable had positive significant correlations with indicators of susceptibility to peer pressure except the coefficient for family involvement (-.062, p>.05) and school involvement (-.077, p>.05) which were negative and not significant. Conformity to peer pressure had the highest correlation coefficient (.272, p<.05), while family involvement had the lowest correlation coefficient (.062, p<.05) (See Table 4.9). The results seemed to indicate that adolescents with temporal gap (high on impulsivity and sensation seeking) were more likely to succumb to negative peer pressure. These results may be as a result of the relationship between the temporal gaps that affects adolescents' decision making, exacerbating their vulnerability to the influence of peers into their decision making.

The gender categorized coefficients for conformity to peer pressure and developmental capacitation were, .186 (p<.05) and .324 (p<.05) for male and female adolescents respectively; this implied that female adolescents who were highly impulsive and also high sensation seekers were more likely to conform to peer pressure than their male counterparts. However the coefficients of other indicators of peer pressure were larger and significant for the male adolescents (-.234, p<.05; .149, p>05 and .275, p<.05) than for the female adolescents (.085, p>.05; .106, p>.05

and .093, p>.05) for Family involvement, Peer involvement and misconduct respectively. Some researchers explain this gender differences as an innate preference that causes the difference in propensity to choose risky behaviors between male and female adolescents, these preferences are exacerbated by the pressure to conform to gender stereotypes (Booth and Nolen, 2009).

When developmental capacitation was correlated with the individual indicators of susceptibility to peer pressure for the different genders, it was found out that misconduct had the highest correlation coefficient for the male adolescents (.275, p<.05) while conformity had the highest among the female adolescents (.324, p<.05). This was an indication that, while developmental capacitation would incline female adolescents to conform to their peers, possibly because they would want peer approval, for the male adolescents developmental capacitation seemed to incite them more into misconduct. This implies that developmental capacitation has differing influence on adolescents' susceptibility to peer pressure across the gender and therefore differing interventions would need to be addressed to address susceptibility to peer pressure.

Further, when the relationship between the indicators of developmental capacitation and susceptibility to peer pressure was examined, the results indicated correlations between sensation seeking and individual indicators of susceptibility to peer pressure were relatively higher (.31, p<.05; .218, p< .05 and .278, p<.05 for conformity, peer involvement and misconduct respectively) than those of impulsivity (.176, p<.05; .118, p<.05 and .134, p<.05 for conformity, peer involvement and misconduct respectively) as indicated in Table 4.9. Clearly susceptibility to peer pressure correlated relatively higher with sensation seeking than with impulsivity, indicating that adolescents who are novel seekers are also likely to be influenced by their peers. This then would

mean that, such adolescents are susceptible to peer influence to taking up negative activities and indulgence in sexually risky behaviors is not an exception.

Results presented in Table 4.9 indicates that the correlation coefficients between sensation seeking and susceptibility to peer pressure were relatively higher for male adolescents than those of female adolescents except for the conformity coefficient (.291, $p<.05$ and .349, $p<.05$ for male and female adolescents respectively). Among the male adolescents both sensation seeking and impulsivity correlated highest with misconduct (.368, $p<.05$ and .232, $p< .05$ respectively) while for the female adolescents the highest correlation for both variables was conformity (.349, $p<.05$ and .214, $p<.05$ respectively) (See Table 4.9). This indicates that while developmental capacitation inclined males to misconduct, it inclined females to conform to peer pressure. This may be the explanation behind increased indulgence in unconventional behaviors among male adolescents as confirmed in the Kenya Health Demographic Survey of 2008 which indicated that boys indulged in higher instances of unconventional behaviours a trend that was attributed to their developmental capacitation (KNBS & ICF Macro, 2010).

4.8 Mediation by Peer pressure

The fourth objective of the study sought to determine the meditational effect of peer pressure on the relationship between developmental capacitation and sexual risk taking. To realize this, SEM analyses were adopted, whose preliminary examination included confirmatory factor analyses of the latent variables included in the study.

4.8.1 Confirmatory Factor Analyses (CFA)

Since the study was a Confirmatory factor analyses (CFA) based, the measurement models of the models were examined to determine the factor loadings for the indicator variables of the respective

latent variables. This was necessary to determine which of the indicator variables effectively manifested the respective latent variable. Since there were three latent variables in the study; Developmental capacitation, susceptibility to peer pressure and Sexual risk taking, there measurement models were examined in the CFA.

4.8.1.1 Factors of Developmental Capacitation

Developmental capacitation was adopted as a latent variable with two indicator variable (factors); sensation seeking and impulsivity. Factor extraction using principal component indicated that impulsivity explained 60% variance in developmental capacitation, while sensation seeking explained 40 %. This meant that eliminating sensation seeking from further analyses would leave about 40% of the variance unexplained, it was therefore considered prudent to include the two factors as indicators of developmental capacitation. These results were corroborated by the confirmatory factor analysis (CFA) which showed that impulsivity was a better indicator of developmental capacitation than sensation seeking i.e. while developmental capacitation only explains 8 % (0.29^2) of its variability; it explains 50.4 % (0.71^2) of variability in impulsivity (see Fig. 4.7). The resultant model was fit χ^2 (1) = .00, p<.05, RMSEA = .04, CFI= 1.00, GFI= 1.00.

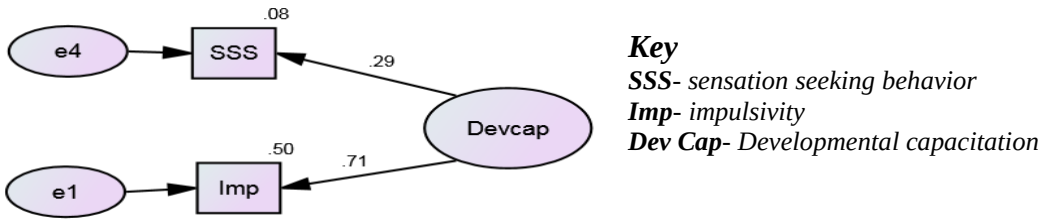
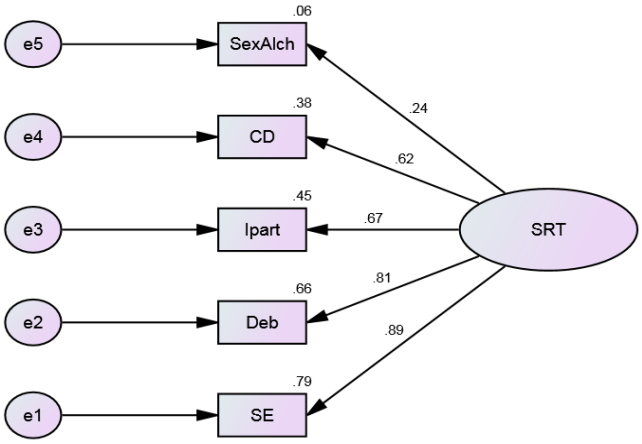


Fig 4.7 Factor Analysis of Developmental Capacitation Indicators

4.8.1.2 Factors for Sexual Risk Taking Behavior

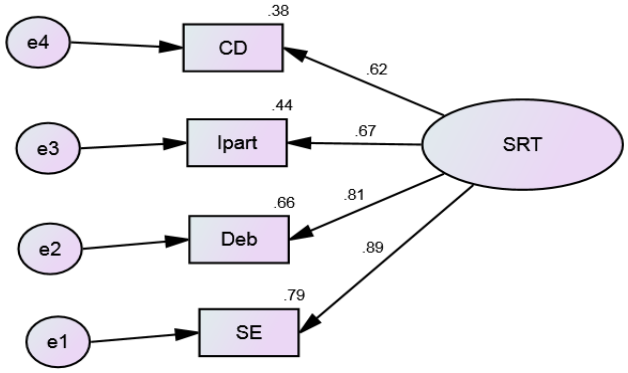
Sexual risk taking behavior was conceptualized as a latent variable indicated by five observable variables; sexual experience, non-condom use, multiple sexual partners, early sexual debut and sex under the influence of alcohol/drugs.



KEY
SexAlch*- sexual intercourse under the influence of alcohol/drugs*
CD*- non condom use*
Ipart*- multiple partners*
Deb*- early sexual debut*
SE*- sexual experience*
SRT*- sexual risk taking behavior*

Fig 4.8 (a) Path Diagram for Factor Analysis of the Indicators of Sexual Risk taking Behavior

From Fig 4.8, all the indicators of sexual risk taking behavior had high factor loadings ranging from 0.62 to 0.89 except for sex under the influence of alcohol/drugs; consequently the indicator was dropped from further analyses. This was also motivated by the low response rate on the variable. The resultant path diagram is shown in Fig 4.8(b). The resultant model was fit χ^2 (3)= 40.726, p<.05, RMSEA = .05, CFI= .934, GFI= .934.



KEY

CD*- non condom use*
Ipart*- multiple partners*
Deb*- early sexual debut*
SE*- sexual experience*
SRT*- sexual risk Taking behavior*

Fig. 4.8 (b) Modified Path diagram of indicators to sexual risk taking

Sexual experience, non-condom use, multiple partners and early sexual debut accounted for 96.63 % variance in sexual risk taking and therefore were adopted as sufficient factors explaining sexual risk taking among adolescents; this was confirmed by the scree plot (See Fig 4.8 (c)).

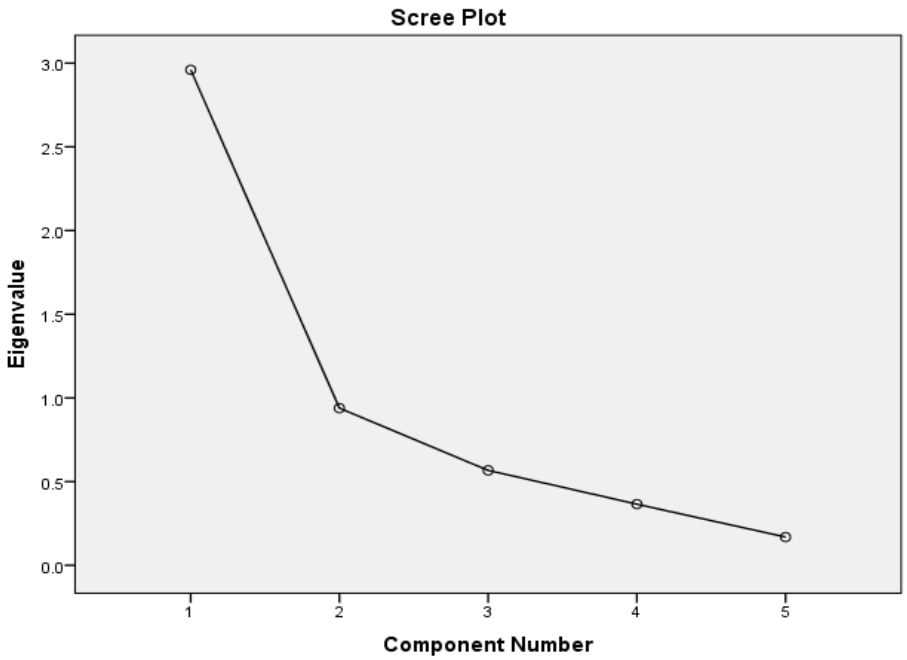
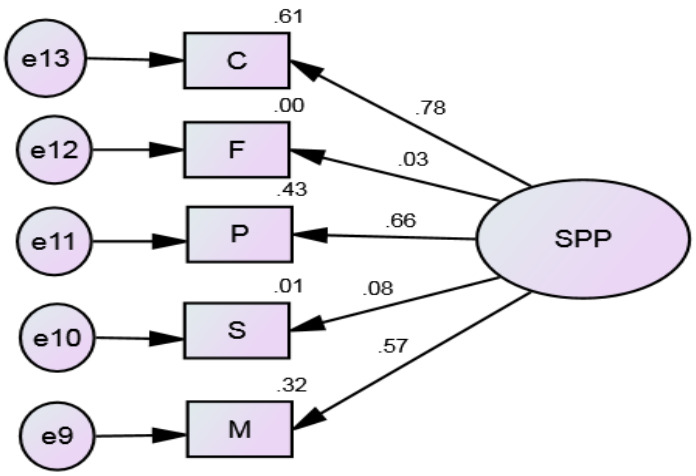


Figure 4.8. (c) Scree Plot for Sexual risk taking Factors

4.8.1.3 Factors for Susceptibility to Peer Pressure

Peer pressure was indicated by five variables which constituted the five Susceptibility to peer subscales of the susceptibility to peer pressure scale namely; conformity, Peer involvement, Family Involvement, School involvement and Misconduct. The resultant model was found to be a poor fit χ^2 (5) = 152.784, p<.05, RMSEA = .28, GFI= .859, CFI= .482. to improve the model fit, upon examination of the modification indices, it was found out that the model would be significantly improved by correlating the errors of Family involvement and school involvement. When this was done, the resultant model was fit χ^2 (4) = 28.109, p<.05, RMSEA = .04, CFI= .916, GFI= .971.



KEY
SPP*- susceptibility to peer pressure*
C*-conformity*
F*- family Involvement*
P *peer involvement*
S*- school involvement*
M*-* *Misconduct*

Fig 4.9 (a) Path Diagram for Factor Analysis of the Indicators of Susceptibility to Peer Pressure

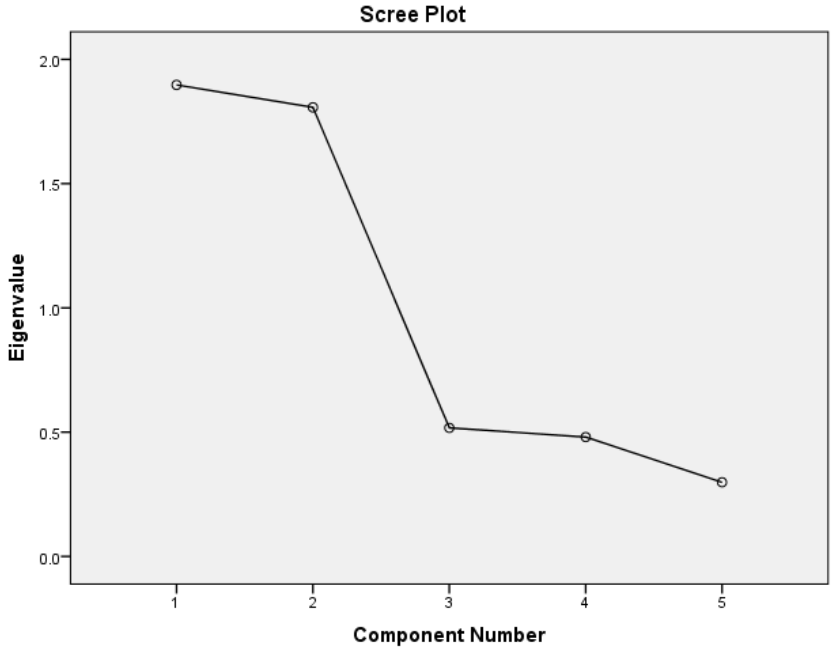
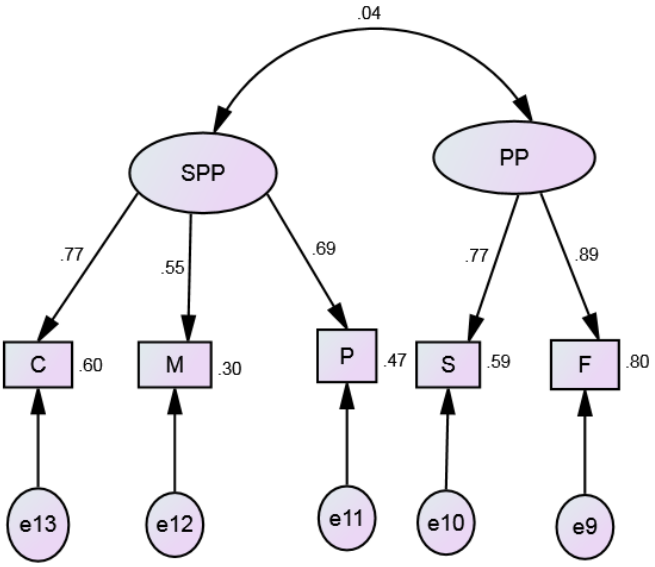


Figure 4.9 (b) Scree Plot for Indicators of Susceptibility to Peer Pressure

The results of factor extraction indicated that two components had been extracted; one indicated by family involvement and school involvement and another indicated by conformity, peer involvement and misconduct. The scree plot (Fig 4.9 (b)) confirmed the possible existence of two latent variables being indicated by the factors of susceptibility to peer pressure.



KEY
SPP- *susceptibility to peer pressure*
PP- *susceptibility to positive peer pressure*
C-*conformity*
F- *family Involvement*
P *peer involvement*
S- *school involvement*
M- *Misconduct*

Fig 4.10 Path Model for a two- Factor Peer Pressure

Upon examination of factor loadings for indicators of susceptibility to peer pressure it was found out that family involvement and school involvement had poor factor loadings, consequently it was concluded that these two indicators appeared to manifest a different latent variable other than susceptibility to peer pressure. Conformity, peer involvement and misconduct had high factor loadings; 0.77, 0.55 and 0.69 respectively (see Fig. 4.10). Family involvement and school involvement were closely related, possibly manifesting susceptibility to positive peer pressure (PP). Factor extraction confirmed these results by indicating that indeed two factors had been extracted, one comprising of school and family involvement and another comprising of misconduct, peer involvement and conformity. When the second latent variable was introduced, the factor loadings for school and family involvement significantly increased to 0.77and 0.89 respectively. Upon further examination through modification indices it was found out that correlating the errors of the two variables, school Involvement and family involvement, produced

results almost similar to eliminating them from the model, therefore for further analyses these variables were retained but their errors correlated.

4.8.2 The Mediation Role of Susceptibility to Peer Pressure on the Relationship between Developmental Capacitation and Sexual Risk Taking

The study adopted Structural Equation Modeling for analyses of the relationship between developmental capacitation (exogenous variable), sexual risk taking (endogenous variable) and susceptibility to peer pressure (mediator). Developmental capacitation was measured using two indicator variables; impulsivity and sensation seeking; Sexual risk taking was measured using 5 indicator variables namely; sexual experience, sexual debut, condom use and multiple sexual partners as its indicators variables, use of alcohol/drug before sexual intercourse as an indicator for sexual risk taking behavior was eliminated from the analyses since it was found not to be a significant indicator of adolescents sexual risk taking. Susceptibility to peer pressure was measured through its five subscales namely; peer involvement, conformity, family involvement, school involvement and misconduct. The model was identified by constraining the parameters of the unobserved variable. This was done by fixing the regression weight arbitrarily to one (1).

Since the study aimed at establishing the mediation effect of peer pressure, three models were fitted as proposed by Holmbeck, (1997). These models were; the unmediated model (direct effect model), the mediated model (partial mediation) and the full mediation model. To test for mediation of peer pressure three structural models were estimated; a direct effect model in which developmental capacitation directly predicted sexual risk taking; a fully mediated model in which developmental capacitation was only indirectly related to sexual risk taking through susceptibility to peer pressure; and a partial- mediation model in which developmental capacitation was still

directly related to sexual risk taking and also indirectly through susceptibility to peer pressure. This is a necessary procedure to determine mediation according to Holmbeck (1997).

4.8.2.1 The Unmediated model (Direct Effect Model)

The unmediated model in the study referred to the relationship between developmental capacitation (with impulsivity and sensation seeking as the indicators) and sexual risk taking (with Non condom use, sexual experience, multiple sexual partners and early sexual debut as the indicators) variables without the mediator (susceptibility to peer pressure. The resultant path diagram is shown in Fig 4.11.

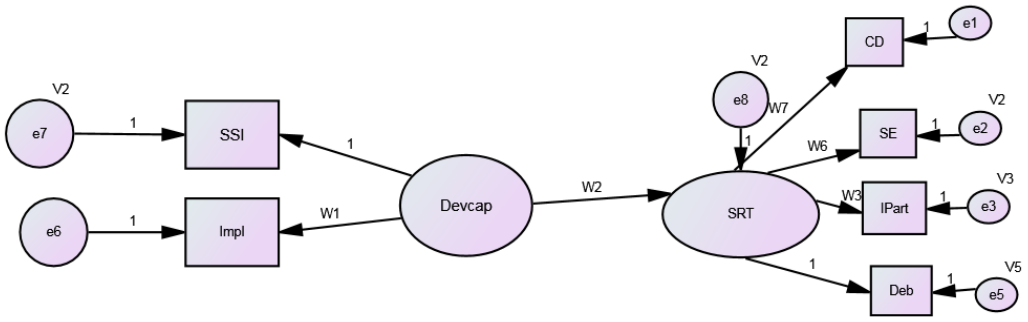


Fig 4.11The structural Model Showing the Relationship between Developmental Capacitation and Sexual Risk taking

4.8.2.2 Model Identification

To identify the model, two regression weights were constrained i.e. the regression weight for developmental capacitation on sensation seeking and that of sexual risk taking on sexual debut. These parameters were constrained to a nonzero value (1). In addition the regression weights for all errors was fixed at 1 as well (See Fig 4.11). This is a necessary condition in SEM to be able to identify the model (Arbuckle, 2012). From preliminary examinations it was found out that treating the error terms for non condom use and impulsivity as free parameters would significantly reduce the chi square value from 234.79 to 37.344, therefore these errors were treated as free parameters for further analyses i.e without constraining their regression weights to 1.

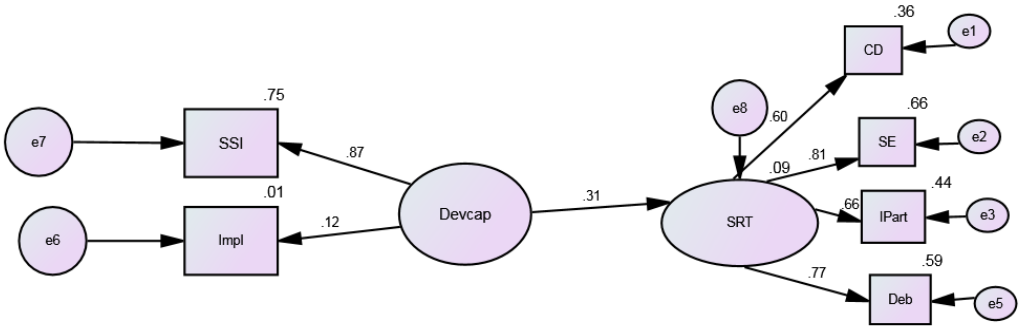


Fig 4.12 Standardized Estimates of the Structural Model Showing the Relationship between Developmental Capacitation and Sexual Risk taking Behavior

From Fig 4.12, sensation seeking accounted for 75 % of the variance in developmental capacitation among secondary school adolescents in Kisumu Municipality while impulsivity accounted for 1% variance in in their developmental capacitation. Looking at the variance of the indicators for sexual risk taking, 59% of variance sexual risk taking was accounted for by early sexual debut, 44 % of the variance by the number of sexual partners, 66 % of the variance by sexual experience and 36% by the variance in condom use.

Developmental capacitation explained for 9 % of adolescents' sexual risk taking in the model as indicated in the path analysis (See Fig 4.12). From the unstandardized estimates, it was evident that increasing developmental capacitation by 1 unit increases sexual risk taking by 0.186 units (the path was significant at $p<0.05$) (See Table 4.12). Regression coefficients (Estimates) indicated that a unit increase in developmental capacitation would result into a 0.186 unit increase in the sexual risk taking among the adolescents. The results indicated that 9 % of variance in secondary school adolescents' sexual risk taking can be accounted for by their developmental capacitation. The results indicated that indeed developmental capacitation influenced adolescents' sexual risk taking.

Table 4.12 Regression Weights for the Unmediated Model

			Estimate (β)	S.E.	C.R.	P
SRT	<---	Devcap	.186	.042	4.478	***
SE	<---	SRT	1.319	.100	13.238	***
Part	<---	SRT	.810	.066	12.190	***
Deb	<---	SRT	1.000			
CD	<---	SRT	.707	.065	10.895	***
Imp	<---	Devcap	.153	.079	1.941	.052
SS	<---	Devcap	1.000			

Key – SRT*- sexual risk taking behavior;* ***Devcap****- developmental capacitation,* ***SE****- sexual experience;* ***Part****- Multiple partners;* ***Deb****- early sexual debut;* ***Imp****- Impulsivity;* ***CD****- condom use-* ***SS****- sensation seeking;* ***S.E****- standard error,* ***C.R****.- critical ratio;* ***P****- probability.*

4.8.2.3 Model Fit

On examining the model fit, a chi square of 37.344 (10), p= 0.000 was obtained. The model had the following indices root mean square error of approximation (RMSEA) was 0.08, an index Geldhof et al, (2012) argue that it indicates a fairly fit model; the resultant Comparison fit index (CFI) was 0.951; Tucker Lewis index (TLI) of 0.931; Normed Fit Index (NFI) value of 0.939 and a Goodness of fit index (GFI) of 0.968 were obtained. All these indicated that the model was a good fit.

4.8.3 Mediated (Partial Mediation) model

In the mediated model, peer pressure was added into the model. From the background of the study it was stipulated that since peers are very important to adolescents, their influence may greatly influence the decision to take up sexual risk taking behaviors among adolescents. This proposition was tested by including susceptibility to peer pressure in the model and then testing the model for fitness. The path analysis results are presented in Fig. 4.13.With additional parameters in the model, the variance of sexual risk taking accounted for increased to 19 % from the earlier 9 %. The paths were found to be significant at 95 % confidence level. This indicated that indeed peer pressure exacerbated adolescents' sexual risk taking behavior.

Table 4.13 Regression Weights for the Mediated model (Partial Mediation).

			Estimate (β)	S.E.	C.R.	P
SPP	<---	Devcap	1.204	.131	9.195	***
SRT	<---	Devcap	.729	.497	1.466	.014
SRT	<---	SPP	.012	.253	.049	.961
SSI	<---	Devcap	1.000			
ImpI	<---	Devcap	.717	.191	3.760	***
SE	<---	SRT	1.000			
Deb	<---	SRT	.772	.047	16.593	***
CD	<---	SRT	.499	.041	12.075	***
IPart	<---	SRT	.565	.042	13.375	***
PII	<---	SPP	1.000			
FII	<---	SPP	-.071	.123	-.580	.562
CII	<---	SPP	1.204	.131	9.195	***
SchII	<---	SPP	.072	.111	.645	.519
MI	<---	SPP	.824	.105	7.849	***

Note

****- coefficients are significance at .005 level*

From Table 4.13, most of the paths were significant at 95% confidence level, the path of susceptibility to peer pressure and sexual risk taking was not significant (p = .961), this implied that sexual risk taking behaviors among adolescents are not significantly related to their susceptibility to peer pressure in the partial mediation model.

Preliminary inspection of the modification indices indicated that the model could be significantly improved by correlating the errors of susceptibility to peer pressure for school involvement and that of family involvement. When the model was estimated with this error correlation resulted to an acceptable fit χ^2= 75.238 (42); GFI = 0.962; NFI = 0.926; CFI = 0.965; TLI = 0.955; RMSEA= 0.047. When the standardized root mean square residual (SRMR) which is considered as an absolute measure of fit was computed, the model had a value of 0.053 which is considered a good fit.

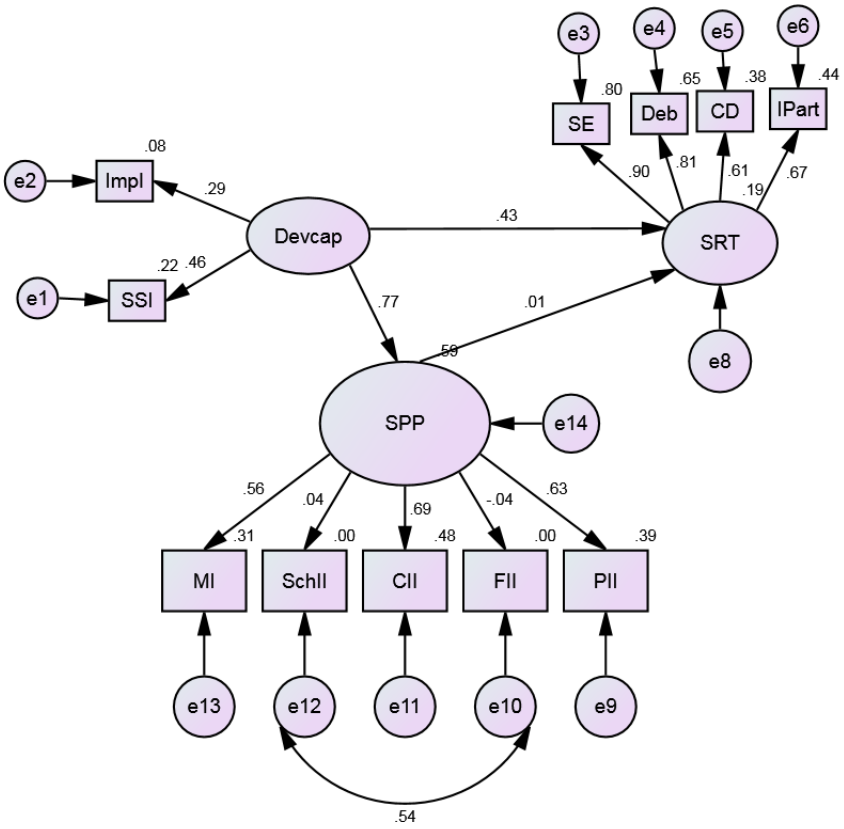


Fig 4.13 Standardized Estimates of the Mediated Model

Key:
Imp= Impulsivity **SSI**= sensation seeking **Dev cap**= Developmental capacitation**; SPP=**Susceptibility to Peer pressure; **SRT**= sexual risk taking behavior; **SE**= sexual experience; **Deb**= Sexual debut; **CD**= condom Use; **Ipart**= multiple partners
MI= misconduct; **SchII**= school Involvement; **CII**= conformity; **FII**= family involvement; **PII**= peer involvement

The results indicated existence of partial mediation between the endogenous, exogenous and mediator variable; since the direct and indirect paths were significant. To test the significance of the partial mediation, the bootstrapping technique was employed. This is a resampling method for creating and sampling distribution to estimate standard errors and create confidence intervals. This is a necessary procedure to confirm mediation effect (Cheung, & Lau, 2008; Changya Hu & Wang, 2010). The results of bootstrapping indicated a standardized indirect effect value for sexual risk taking of 0.239 which was within the standardized indirect lower bound (.371) and upper bound (0.525) (see Table 4.14). This implied that the possibility that the indirect effect would be zero (no

mediation) was not a possibility in this case. This therefore led to the rejection of the null hypothesis that there was no mediation effect between developmental capacitation and sexual risk taking. Further scrutiny indicated that the direct paths between susceptibility to peer pressure, developmental capacitation and sexual risk taking were significant at p = 0.001; the indirect effect of developmental capacitation on sexual risk taking was also significant at 0.001 as well as the total effect. Therefore it was concluded that the partial mediation was indeed significant.

Table 4.14 Results of Bootstrap

	Standardized indirect effect	**Indirect effect; lower bound (BC)**	**Indirect effect – upper bound(BC)**
SPP-Devcap	.000	.000	0.000
SRT- Dev cap	.239	.371	0.525

When the unstandardized coefficients (β) of the models were examined, it was found out that in all the models the relationship between the latent variables was positive and significant at 95 % confidence level. In the direct model, developmental capacitation was positively correlated to sexual risk taking (β = 0.186); increasing developmental capacitation by 1 unit, sexual risk taking would increase by 0.186 units (See Table 4.12). This means that adolescents high on impulsivity and sensation seeking (indicators for developmental capacitation) were also likely to engage in sexually risky behaviors. These findings seem to support that of Johansen (2014) as well as those of Telzer, Fuligni, Lieberman, Miernicki, and Galvan, (2014), that indeed adolescent who have high levels of impulsivity and sensation seeking, put themselves at a greater risk for negative consequences of risk taking behavior. According to her findings, impulsivity and sensation seeking significantly predicted an increase in risk taking behavior. The findings of the current study seem to suggest that increased levels of impulsivity and sensation seeking exacerbates adolescents'

indulgence in sexual risk taking, possibly as a result of the maturational gap that seems to affect how they make decisions as well as their ability to appraise the riskiness of a behavior.

In the partial mediation model (Table 4.13), the coefficient for the path between developmental capacitation and sexual risk taking was 0.729, meaning that with peer pressure as a mediator, sexual risk taking increases by 0.729 units when developmental capacitation is increased by a unit; $\beta = 0.729$, $p = 0.014$, (See Table 4.13). These results are in line with the findings of Steinberg, et al (2008) in their study examining age differences in sensation seeking and impulsivity, concluded that vulnerability to risk taking is the product of high sensation seeking and low impulse control.

4.8.4 Gender differences in the Mediation of the Relationship between Developmental Capacitation and Sexual Risk Taking

To find out whether gender moderated the mediation of peer pressure on the relationship between developmental capacitation and sexual risk taking behavior, two models were compared i.e. the male adolescents' and the female adolescents' models. The results are presented in Table 4.15. From the results the paths between developmental capacitation and susceptibility to peer pressure were significant for male (1.499) and female (1.852) adolescents at $p = 0.05$. This implied that a unit increase in developmental capacitation results to a higher increase in susceptibility to peer pressure for female adolescents than for the male adolescents, i.e. female adolescents are more vulnerable to the developmentally instigated ability to be susceptible to peer pressure. This may be as a result of the gender difference in propensity to choose risky outcome which is induced by their innate preferences and modified pressure to conform to gender stereotypes (Booth & Nolen, 2009).

Table 4.15 The Unstandardized Regression Coefficients for Developmental Capacitation, Peer Pressure and Sexual Risk Taking for Male and Female Adolescents.

			Male Adolescents				Female Adolescents			
			Estimate	**S.E**	**C.R**	**P**	**Estimate**	**S.E**	**C.R.**	**P**
SPP	<---	Devcap	1.499	.511	2.936	.003	1.852	.569	3.256	.001
SRT	<---	Devcap	2.977	1.774	1.679	.019	1.593	2.099	.759	.448
SRT	<---	SPP	-1.104	.683	-1.616	.106	-.354	.818	-.433	.665
SSI	<---	Devcap	1.000				1.000			
ImpI	<---	Devcap	.854	.250	3.410	***	.854	.250	3.410	***
SE	<---	SRT	1.000				1.000			
Deb	<---	SRT	.788	.049	16.019	***	.788	.049	16.019	***
CD	<---	SRT	.510	.044	11.714	***	.510	.044	11.714	***
IPart	<---	SRT	.573	.044	12.895	***	.573	.044	12.895	***
PII	<---	SPP	1.000				1.000			
FII	<---	SPP	.003	.127	.024	.981	.003	.127	.024	.981
CII	<---	SPP	1.280	.175	7.314	***	1.280	.175	7.314	***
SchII	<---	SPP	.125	.116	1.081	.280	.125	.116	1.081	.280
MI	<---	SPP	.774	.114	6.810	***	.774	.114	6.810	***

The path for male adolescents between sexual risk taking and developmental capacitation was significant (β=2.977, p = 0.019), while that of the female adolescents was not (β=1.593, p = 0.448). This meant that for the male adolescents a unit increases in developmental capacitation results to a 2.977 increase in sexual risk taking. For both genders the path between sexual risk taking and susceptibility of peer pressure were not significant (See table 4.15).

When multiple group analyses was employed to check the CFI change across the groups, it was found out that there was no significant change in the comparative fit index between the male adolescents' and female adolescents' model. Therefore it was concluded that there was no significant gender difference in the mediation of peer pressure on the relationship between male and female adolescents. The results of the current study seemed to suggest that the mediation of peer pressure on the relationship between developmental capacitation and sexual risk taking is similar across the genders, unlike Lebedina-Manzoni & Ricijas, (2013), in their study on the characteristics of youth regarding susceptibility to peer pressure, who found out that the male gender was an important predictor of susceptibility to peer pressure. The difference may have

resulted from the different methods of data analyses adopted, while Lebedina-Manzoni & Ricijas' study, adopted OLS, the current study used SEM, which is considered a more powerful multivariate technique that captures relationships within a web of observed and unobserved variables (Holmeck, 1997; Gunzler et al 2013).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains the summary of findings of the study, conclusions based on the research objectives, recommendations emanating from the study as well as recommendations for further research.

5.2 Summary

5.2.1 Relationship between Adolescents' Developmental Capacitation and Sexual Risk Taking Behavior

The first objective of the study was to determine the relationship between adolescents' developmental capacitation and sexual risk taking behavior. A significant positive relationship was established between developmental capacitation and sexual risk taking, which was found to vary across the genders with a unit change in developmental capacitation resulting to greater likelihood to take up sexual risk taking among the female adolescents. When the relationship was considered using the individual indicators of developmental capacitation i.e. impulsivity and sensation seeking, it was established that while sensation seeking significantly contributed to sexual risk taking among male adolescents, impulsivity was a significant predictor of sexual risk taking among the female adolescents.

Among the four indicators of sexual risk taking, sensation seeking accounted for the highest variance in the number of sexual partners, indicating that, adolescents who were high on sensation seeking were also likely to have multiple sexual partners. Significant gender differences existed in the prediction of sexual risk taking with sensation seeking and impulsivity as predictors. While sensation seeking was found to be a significant predictor of adolescent sexual risk taking among

male adolescents, impulsivity was a better predictor for sexual risk taking among the female adolescents.

5.2.2 Relationship between Susceptibility to Peer Pressure and Sexual Risk Taking Behavior

The second objective of the study was to establish the relationship between susceptibility to peer pressure and sexual risk taking. Bivariate correlations indicated that there existed positive significant correlation between developmental capacitation and sexual risk taking. Stepwise Logistic regression analyses with all the indicators showed that only the contributions of peer involvement and misconduct were significant in the sexual risk taking model. Family involvement was found to be a significant predictor of sexual risk taking among the male adolescents while, misconduct was a significant predictor for sexual risk taking among the male adolescents.

5.2.3 Relationship between Developmental Capacitation and Susceptibility to Peer Pressure

The third objective of the study was to establish the relationship between developmental capacitation and susceptibility to peer pressure. The results indicated a positive significant relationship. This relationship was significant for female adolescents but not for the male adolescents. Among the female adolescents, the correlation coefficient for conformity was the highest while among the male adolescents the coefficient of misconduct was the highest.

There was evidence of differing relationship between developmental capacitation and various indicators of susceptibility to peer pressure. Developmental capacitation correlated highest with conformity (.324) among the female adolescents, while it correlated highest with misconduct (.275) among the male adolescents. From the results, female adolescents who were highly impulsive and also high sensation seekers were more likely to conform to peer pressure than their male counterparts

5.2.4 Mediation by Peer Pressure

The last objective of the study was to determine the mediation effect of peer pressure on the relationship between developmental capacitation and sexual risk taking behavior. The proposed models to test the mediation of peer pressure on the relationship between developmental capacitation and sexual risk taking were fit.

From the direct effect model it was found out that sensation seeking accounted for a higher variance in developmental capacitation than impulsivity while the number of sexual partners explained the highest variance in in sexual risk taking. The introduction of susceptibility to peer pressure in the model significantly increased the variance of sexual risk taking explained by developmental capacitation from 9% to 19%.

Susceptibility to peer pressure was found to partially mediate the relationship between developmental capacitation and sexual risk taking behavior relationship among adolescents. When multiple group analyses was employed to check the CFI change across the groups, it was found out that there was no significant change in the comparative fit index between the male adolescents' and female adolescents' model, implying that there was no significant gender difference in the mediation of peer pressure on the relationship between male and female adolescents.

5.3 Conclusion

The following conclusions were arrived at from the findings of the study.

5.3.1 Adolescents' Developmental capacitation and Sexual Risk taking Behaviour

The first objective of the study was to determine the relationship between adolescents' developmental capacitation and their sexual risk taking behavior. From the findings, it was concluded that developmental capacitation was positively correlated with sexual risk taking, with divergent consequences across the genders.

5.3.2 Susceptibility to Peer Pressure and Sexual Risk Taking Behaviour

The second objective was to determine the relationship between susceptibility to peer pressure and sexual risk taking. From the findings it was concluded that only peer involvement, conformity and misconduct significantly correlated with sexual risk taking, amongst the indicators of susceptibility to peer pressure.

5.3.3 Developmental Capacitation and Susceptibility to Peer Pressure

The third objective was to establish the relationship between and developmental capacitation susceptibility to peer pressure. From the findings, it was concluded that developmental capacitation positively correlated with all the indicators of susceptibility to peer pressure except for family involvement and school involvement, which had negative correlations.

5.3.4 Mediation by Peer Pressure

The last objective of the study was to determine the mediation effect of peer pressure on the relationship between developmental capacitation and sexual risk taking behavior. It was concluded that peer pressure partially mediates the relationship between developmental capacitation and sexual risk taking behaviour.

5.4 Recommendations

The following recommendations were suggested from the findings of the study;

i. To address sexual risk taking among adolescents avenues to contain negative consequences of developmental capacitation factors (Impulsivity and Sensation Seeking) need to be developed.

ii. Gender differences were eminent in prevalence as well as in the relationships of developmental capacitation, susceptibility to peer pressure and sexual risk taking, therefore the study recommended that sexual risk taking interventions should be developed and

promoted with this gender differences in mind i.e. that Male and female adolescents are susceptible to different aspects of sexual risk taking.

iii. Peer influence was found to have significant contribution to adolescents' sexual risk taking; consequently the study recommended that peers can be utilized to provide positive influence to adolescents, that avenues for positive peer pressure be embraced as platforms for discussing sexuality.

iv. The study found out that susceptibility to peer pressure partially mediated the relationship between developmental capacitation and sexual risk taking therefore it was recommended peer group be embraced as an entry point to addressing of adolescents' sexual risk taking that is developmentally instigated.

5.5 Recommendations for Further Research

The following areas for further research were recommended;

i. The current study was carried out in secondary schools, but it provided evidence that sexual risk taking starts earlier possibly in primary schools. To be able to effectively understand and therefore effectively intervene on adolescents' sexual risk taking, the researcher recommends a similar study focusing on primary school pupils.

ii. The current study only focused on sensation seeking and impulsivity as indicators of developmental capacitation, however the low factor loadings indicated that the two were not sufficient indicators of developmental capacitation, therefore a research focusing on multiple personality traits that affect adolescent decision making especially during puberty is recommended.

iii. The current study found out that school and family are vital socialization institution that shape up adolescents sexual behavior, it would be enriching to conduct a similar study to adolescent populations outside school as well as those not in functional homes.

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APPENDICES

Appendix A: Sensation Seeking Scale Form V for Adolescents

Demographic information

The following questionnaires are meant to gather information on your behavior in relation to sexual risk taking. Please answer the questions honestly. All information collected will be treated as confidential and will only be used for research purposes only.

1. Age……. (yrs)
2. Gender Male ( ) Female ( )
3. School type Girls only ( ) Boys Only ( ) Mixed ( )

Sensation Seeking Scale Form V

Directions: Each of the items below contains two choices, A and B. Please indicate (circle) which of the choices most describes your likes or the way you feel.

In some cases you may find items in which both choices describe your likes or feelings. Please choose the one which better describes your likes or feelings.

In some cases you may find items in which you do not like either choice. In these cases mark the choice you dislike least. Please try to answer each item.

It is important you respond to all items with only one choice, A or B. We are interested only in your likes or feeling, not in how others feel about these things or how one is supposed to feel. There are no right or wrong answers as in other kinds of tests. Be frank and give your honest appraisal of yourself.

1. A. I like "wild" uninhibited parties
   B. I prefer quiet indoor parties.

2. A. There are some movies/Tv programs I enjoy seeing a second or even a third time
   B. I don't enjoy watching a movie that I've seen before

3. A. I often wish I could be a mountain climber
   B. I can't understand why people who risk their necks climbing mountains

4. A. I dislike all body oduors
   B. There are some odours that I really like.

5. A. I get bored seeing the same faces/people all the time
   B. I like the comfortable familiarity of everyday friends

6. A. I like to explore a strange city or section of town by myself, even if it means getting lost
   B. I prefer a guide when I am in a place I don't know well

7. A. I dislike people who do or say things just to shock or upset others
   B. I get bored by people who are so predictable and obvious in what they say.

8. A. I usually don't enjoy a movie or play where I can predict what will happen in advance
   B. I don't mind watching a movie or a play where I can predict what will happen in advance

9. A. I have tried marijuana/bhang or would like to
   B. I would never smoke marijuana/bhang.

10. A. I would not like to try any drug which might produce strange and dangerous effects on me
    B. I would like to try some of the new drugs that produce hallucinations

11. A. A sensible person avoids activities that are dangerous
    B. I sometimes like to do things that are a little frightening

12. A. I am uncomfortable with people who freely talk about sex.
    B. I am flattered by people who talk freely about sex.

13. A. I find that stimulants make me uncomfortable
    B. I often like to get high (drinking liquor or smoking marijuana)

14. A. I like to try new foods that I have never tasted before
    B. I order the dishes with which I am familiar, so as to avoid disappointment and unpleasantness

15. A. I enjoy watching movies at home.
    B. Watching movies at home bores me tremendously

16. A. I would like to take up the sport of water skiing
    B. I would not like to take up water skiing

17. A. I would like to try boat racing
    B. I would not like to try boat racing

18. A. I would like to take off on a trip with no preplanned or definite routes, or timetable
    B. When I go on a trip I like to plan my route and timetable fairly carefully

19. A. I prefer the "down to earth" kinds of people as friends
    B. I would like to make friends in some of the "far out" groups like artists, celebrities.

20. A. I would not like to learn to fly an airplane
    B. I would like to learn to fly an airplane

21. A. I prefer swimming in shallow water
    B. I think swimming in deep waters would really be fun.

22. A. I would like to meet some persons who are homosexual (men or women)
    B. I stay away from anyone I suspect of being "gay or lesbian"

23. A. I would like to try parachute jumping
    B. I would never want to try jumping out of a plane with or without a parachute

24. A. I prefer friends who are excitingly unpredictable
    B. I prefer friends who are predictable

25. A. I am not interested in experience for its own sake
    B. I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional, or illegal

26. A. The essence of good art is in its clarity, symmetry of form and harmony of colors
    B. I often find beauty in the "clashing" colors and irregular forms of modern paintings

27. A. I enjoy spending time in the familiar surroundings of home
    B. I get very restless if I have to stay around home all day long.

28. A. I imagine that diving off the high board would be fun.
    B. I would never dream of standing on a high board.

29. A. When I am looking for boyfriend/girlfriend, physical attractiveness comes first.
    B. I like to date members of the opposite sex who share my values even if they aren't attractive.

30. A. Heavy drinking usually ruins a party because some people get noisy
    B. Keeping the drinks full/heavy drinking is the key to a good party

31. A. The worst social sin is to be rude
    B. The worst social sin is to be a bore

32. A. A person should have considerable sexual experience before marriage
    B. It's better if two married persons begin their sexual experience with each other

33. A. Even if I had the money I would not care to associate with flight rich persons
    B. I could conceive of myself seeking pleasures around the world with the 'millionaires'

34. A. I like people who are sharp and witty even if they do sometimes insult others
    B. I dislike people who have their fun at the expense of hurting the feelings of others

35. A. I am uncomfortable with the sex scenes in movies.
    B. I enjoy watching many of the "sexy" scenes in movies

36. A. I feel good/'high' after taking a couple of drinks
    B. Something is wrong with people who need liquor to feel good

37. A. People should dress according to some standard of taste, neatness, and style
    B. People should dress in their individual ways even if others don't like it.

38. A. Sailing long distances in small boat is reckless
    B. I would like to sail a long distance in a small but seaworthy boat

39. A. I have no patience with dull or boring persons
    B. I find something interesting in almost every person I talk to

40. A. Skiing down a high mountain slope is a good way to end up on crutches
    B. I think I would enjoy the sensations of skiing very fast down a high mountain slope

Appendix B: The Barratt Impulsiveness Scale for Adolescents

©E.S.Barratt,1994

People differ in the ways they act and think in different situations. This is a test to measure some of the ways in which you act and think. Read each statement and, using the scale below, indicate how often you act and think in the way described. Do not spend too much time on any statement. Answer quickly and honestly.

4=	Almost Always
3=	Often
2=	Occasionally
1=	Rarely/never

		Almost always (4)	Often (3)	Occasionally (2)	Rarely/ Never (1)
1.	I plan tasks carefully	4	3	2	1
2.	I do things without thinking	4	3	2	1
3.	I make up my mind quickly when I am faced with a situation	4	3	2	1
4.	I am happy go lucky	4	3	2	1
5.	I don't pay attention to details	4	3	2	1
6.	I have racing thoughts	4	3	2	1
7.	I plan trips well ahead of time	4	3	2	1
8.	I am self-controlled	4	3	2	1
9.	I concentrate easily	4	3	2	1
10	I save regularly	4	3	2	1
11.	I feel uncomfortable watching thrilling plays.	4	3	2	1
12.	I am a careful thinker	4	3	2	1
13.	I plan for my academic performance	4	3	2	1
14.	I say things without thinking	4	3	2	1
15.	I like to think about complex problems	4	3	2	1
16.	I change subjects preferences	4	3	2	1
17.	I act on impulse/without thinking	4	3	2	1
18.	I get easily bored when solving tough problems	4	3	2	1
19.	I act on the spur of the moment	4	3	2	1
20.	I am a steady thinker	4	3	2	1
21.	I change where I sit in class	4	3	2	1
22.	I buy things on impulse	4	3	2	1
23.	I can only think about one problem at a time	4	3	2	1
24.	I change my hobbies	4	3	2	1
26.	I spend more than I have and thus end up in debts	4	3	2	1
27.	I am more interested in the present than in the future	4	3	2	1
28.	I am restless in class	4	3	2	1
29	I like puzzles/crosswords	4	3	2	1
30.	I am future oriented	4	3	2	1

Appendix C: Peer Pressure Inventory for Adolescents.

Instructions

Here are some *STATEMENTS* describing *PEER PRESSURE* which is when you succumb to your friends' urge *to do* something or to *not do* something else. *READ* the statements and mark an "X"in the box that best describes the frequency with which your friends pressure you to take the activity described on the right hand side, depending on

HOW OFTEN your friends encourage you to do that (*"Rarely," "Sometimes" or "often"*). If you think you don't act out of your friends 'pressure from friends to do the statement, mark the last ("*Never*") box.

Remember; mark *just ONE "X"* for *each* statement.

	How often do you take up the following activities as a result of pressure from your friends?	**OFTEN**	**SOME-TIMES**	**RARELY**	**NEVER**
1.	Study hard/ do your homework	3	2	1	0
2	Take the same subjects that your friends take	3	2	1	0

	How often do you take up the following activities as a result of pressure from your friends?	**OFTEN**	**SOME-TIMES**	**RARELY**	**NEVER**
3	Smoke Marijuana	3	2	1	0
4	Be social, do things with other people not just by yourself.	3	2	1	
5	Try to be "tough," pick fights, etc.	3	2	1	0
6	To get into some 'groups' and not others.	3	2	1	0
7	Try to do what your parents want you to do	3	2	1	0
8	Have a steady (only one at a time) boyfriend or girlfriend (opposite sex)	3	2	1	0
9	Drink beer or liquor	3	2	1	0
10	To do lots of things with your family	3	2	1	0
11	To attend dances and parties	3	2	1	0
12	Be part of one (or more) of the "groups" at school	3	2	1	0
13	Get home by the time your parents say you should be	3	2	1	0
14	Excel, be really good at something (sports, academics, dancing etc)	3	2	1	0
15	Try to be friends with the popular kids	3	2	1	0
16	Wear the SAME types of clothes your friends wear/dress like them	3	2	1	0
17	To "Make out" (kissing or petting)	3	2	1	0
18	Smoke cigarettes	3	2	1	0

	How often do you take up the following activities as a result of pressure from your friends?	**OFTEN**	**SOME-TIMES**	**RARELY**	**NEVER**
19	Try to look or act your own age	3	2	1	0
20	Encourage you to finish Secondary school	3	2	1	0
21	Be in religious activities (Church, Religious Organizations e.g. CU, CA, SDA etc.)	3	2	1	0
22	Talk or act the same way as your friends do.	3	2	1	0
23	Spend your free time with your friends	3	2	1	0
24	Get drunk or get "a buzz"	3	2	1	0
25	Steal something (shoplift, raid a locker/box etc)	3	2	1	0
26	Be as smart as you can be	3	2	1	0
27	Go out with boys/girls (opposite sex)	3	2	1	0
28	Be liked by teachers	3	2	1	0
29	Wear your hair (or makeup) Like your friends'	3	2	1	0
30	Go out only with someone your friends say is okay to date.	3	2	1	0
31	Show respect to adults e.g. not to talk back or "smart off" to adults	3	2	1	0
32	Participate in the games at school (Football, volley ball, etc.)	3	2	1	0
33	NOT to miss school or skip classes.	3	2	1	0
34	Go to concerts	3	2	1	0
35	Do what your parents tell you to do.	3	2	1	0
36	Have the SAME opinion about things as your friends do	3	2	1	0
37	Try to get good grades	3	2	1	0

	How often do you take up the following activities as a result of pressure from your friends?	OFTEN	SOME-TIMES	RARELY	NEVER
38	To "trash" things or vandalize property e.g. write on walls, break windows etc.	3	2	1	0
39	Tell your parents where you go and what you do	3	2	1	0
40	Listen to the genre of music that your friends think are good	3	2	1	0
41	Have sexual intercourse	3	2	1	0
42	Get along well with your parents	3	2	1	0
43	Be rowdy	3	2	1	0
44	Go out with friends on weekends	3	2	1	0
45	Do/take any hard drugs	3	2	1	0
46	Do things to impress members of the opposite sex	3	2	1	0
47	Be nice to teachers	3	2	1	0

Appendix D: Sexual Behavior Indulgence Questionnaire for Adolescents

The following scale is meant to assess your involvement in sexual behavior. Please answer the questions as honestly as possible. The information given is strictly for research purposes and is strictly confidential. Tick (√) appropriately.

1. Have you ever engaged in sexual intercourse? Yes ( ) No ( ).
2. If yes in 2 above, how old were you when you first engaged in sexual intercourse?
3. When was your last sexual encounter? Tick appropriately:
   - in the last two weeks ( )
   - in the last one month ( )
   - in the last three months ( )
   - in the last six months ( )

- I have never had a sexual encounter ( )

4. Did you use any Birth Control Method during your last sexual intercourse?
   - Yes ( )
   - No ( )
5. If your answer in 5 above is yes, which birth control did you use?

   - Male Condoms ( )
   - Female Condoms ( )
   - Withdrawal method (take out penis from vagina before ejaculation—"pulling out") ( )
   - Diaphragm ( )
   - Birth Control Pill/Patch ( )
   - Norplant implant ( )
   - Depo-Provera (an injected hormonal birth control) ( )
   - IUD ( )
   - Cervical Cap ( )
   - Spermicidal (only) ( )
   - Other (Specify) _____

6. How often did you use a condom when you had sexual intercourse in the last 12 months;
   - Always ( )
   - Some times ( )
   - Never ( )

7. Have you ever felt that you were pressured or coerced into having sex with someone when you really didn't want to?
   - Yes ( )
   - No ( )

8. The following statements describe some sexually related behaviors, please tick the frequency with which you engage in them on a scale of four. Very often (3), often (2), rarely (1) and Never (0).

	Very Often(3)	**Often(2)**	**Rarely(1)**	**Never(0)**
Having sexual intercourse while under influence of alcohol or drugs?				
Having sex with a stranger				
Having sex without prior arrangements (at the spur of a moment)				
Being pressured by friends to have sex				
Refused to have unsafe sex				

9. How many sexual partners have you had in the last 12 months? Tick appropriately;
    - One ( )
    - Two ( )
    - Three ( )
    - more than three ( )

10. Other than sexual intercourse what other sexual behaviors do you engage in?

Appendix E: Interview Schedule Guide for Key Informants

This schedule is meant to gather information from school counselors and Deputy Head teachers on the indulgence of risky sexual behaviors in schools.

Information provided will be treated with confidentiality and only used for the purpose of this research.

Gender Male ( )

Female ( )

Role

Deputy Head Teacher ( )

School Counselor/ HOD G& C ( )

Length of Stay at the school

Less than 1 year ( )

One to 3 years ( )

More than 3 years ( )

1. What are the common sexually risky behaviors do students in your school engage in?
2. What factors do you attribute to adolescents' involvement in risky sexual behaviors?
3. What strategies do you employ as a school to reduce these behaviors?
4. What noticeable gender differences exist in students; indulgence in risky sexual behavior?
5. What role do peers play in promoting/preventing involvement in risky sexual behaviors?

Appendix F: Focus Group Discussion Guide

The following FGD Guide is meant to collect information from adolescents on their indulgence in risky sexual behavior and their perception of those behaviors.

1. What are the common sexual behaviors that adolescents engage in?
2. How risky do you rate these behaviors?
3. What justifications do adolescents give for their indulgence in risky sexual behavior?
4. What is your take on abstinence, condom use and multiple sexual partners
5. What is the average age that adolescents begin sexual intercourse?
6. What role do peers play in adolescents' involvement of risky sexual behavior?

Appendix G: Consent Form

I am asking you to voluntary participate in the study, read the information below carefully and sign below if you agree to participate in the study.

Thesis Title

The Relationship between Developmental Capacitation, Peer Pressure and Sexual Risk Taking Behavior among Secondary School Adolescents in Kisumu Municipality, Kenya.

Purpose of the study

The purpose of this study was to determine the relationship between developmental capacitation, peer pressure and adolescents' sexual risk taking behavior.

Voluntary participation

Participation in the study is voluntary; the participant is at liberty to withdraw from the study when they feel like without any consequences.

The participant has right to ask clarifications regarding the items on the study questionnaires.

Confidentiality

Responses in the study shall be treated with utmost confidentiality, and shall only be used for the purposes outlined in the study.

Risks

The participants may get tired during the study. This risk has been minimized by simplifying the questionnaires to ticking appropriate responses with very minimal writing. The FGDs will be moderated to limit them to the stipulated time.

Anonymity

Participants will not be required to indicate their names or any form of identification.

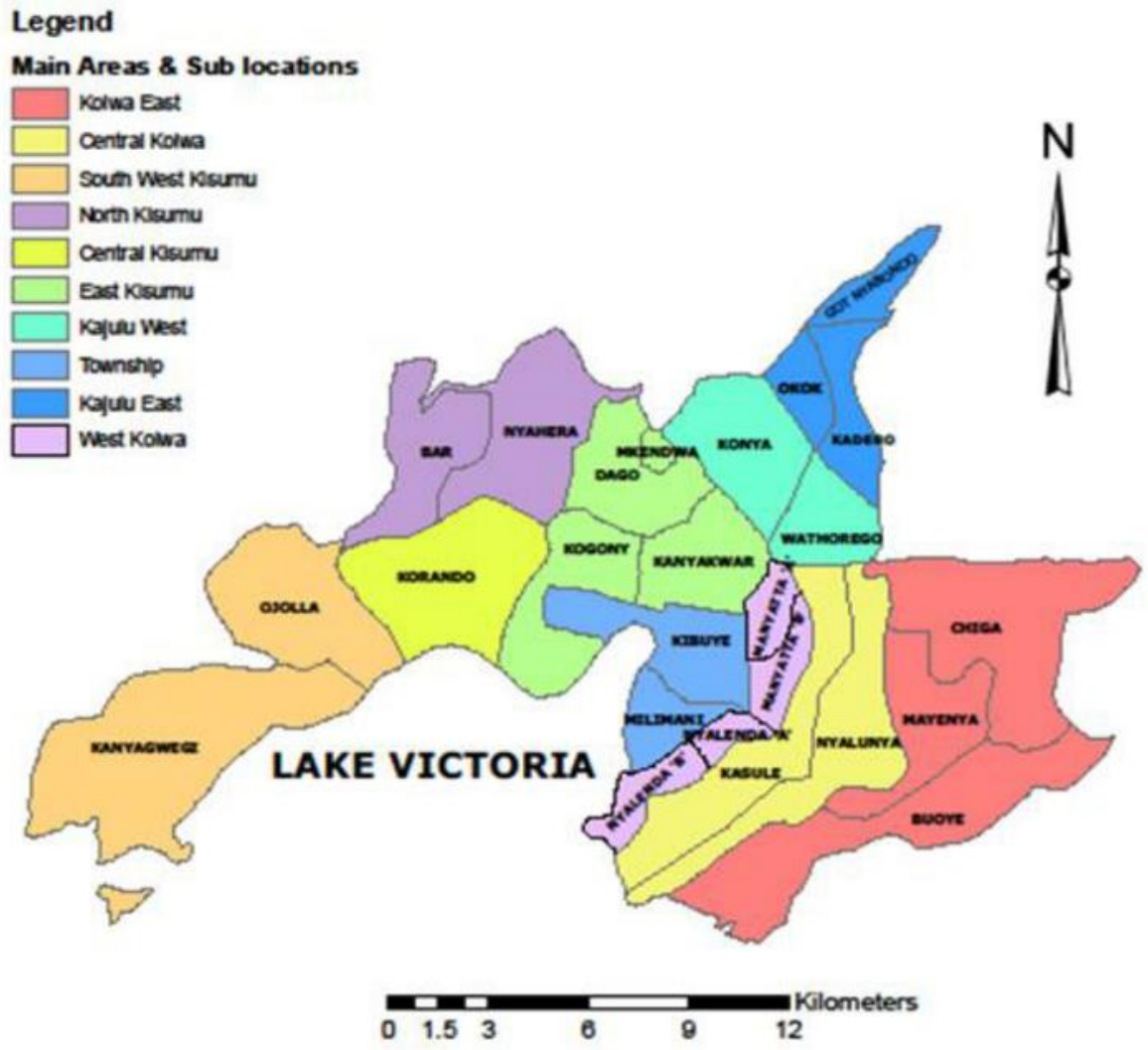
Name of participant…… Sign…….Date……

School Administration Permission

…….Sign……Date……...

Appendix H: A Map of Kisumu Municipality

Kisumu Municipality
(Main Areas and Sublocations)



Appendix I: Copy of Research Permit

THIS IS TO CERTIFY THAT:
MS. ANNIE NJOKI NJUGUNA NJAU
of MASENO UNIVERSITY, 0-40100
KISUMU,has been permitted to conduct
research in *Kisumu County*
on the topic: *MEDIATION ROLE OF PEER PRESSURE ON THE RELATIONSHIP BETWEEN DEVELOPMENTAL CAPACITATION AND ADOLESCENTS' SEXUAL RISK TAKING BEHAVIOR IN KISUMU MUNICIPALITY*
for the period ending:
31st March,2015

Permit No : NACOSTI/P/15/5271/4770
Date Of Issue : 17th February,2015
Fee Recieved :USD 21.30

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Applicant's Signature

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Secretary
National Commission for Science, Technology & Innovation