

## Factors associated with knowledge on the spread of HIV/AIDS among Secondary School Students of Groupe Scolaire De Rugando in Kigali City, Rwanda

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### ABSTRACT

Human Immunodeficiency Virus has continued to spread in most countries of the world including Rwanda. Youths are particularly vulnerable to HIV/AIDS due to the fact that they are not sufficiently prepared to address problems related to their sexuality and also because they do not have enough real knowledge about HIV and AIDS. The study assessed factors associated with knowledge on spread of Human Immunodeficiency virus (HIV) among students of Groupe Scolaire de Rugando in Kigali city, Rwanda. The study adopted descriptive cross sectional approach among the target population of 950 students in secondary school of Groupe Scolaire de Rugando. About 108 students were randomly selected using the systematic sampling method. Self-administered structured questionnaires were used for data collection for a period of one month with the help of a trained research assistant. The study instrument was pilot tested in mission secondary school outside study population and further validation carried out before it was administered based on consent. The most common predisposing factors in the study to adolescents to HIV/AIDS were curiosity and need to experiment. The study findings, showed that 78% accepted that HIV is transmitted by engaging in unprotected sexual intercourse with an infected person, 65% accepted that risk of contracting HIV is increased by presence of other sex partners, 69% accepted that regular use of condoms helps to reduce the risk of contracting HIV and 55% accepted that by reducing the number of sexual partners, chances of HIV infection are reduced. Additionally, 44 (43.14%, C. I.: 33.37-53.32) of the students indicated that they had previously engaged in sex, while 58 (56.86%, C. I.: 46.68-66.63) shows that they did not engaged in sexual practice. Majority of the students who had engaged in sex had never used a condom (59.09%). Usage of condoms were perceived by respondents that it does not allow their partner enjoy sex. This study recommends the need to design interventions that aims to raise awareness on the negative consequences from risky sexual behaviors; increase availability and accessibility of condoms; fight against the entry of drugs in the country as well as their circulation and accessibility to the youth and finally, guidance and counseling services should be introduced in schools.

Keywords: Factors Associated, Knowledge, Spread of HIV /AIDS, Secondary School Students, Kigali city, Rwanda.

### INTRODUCTION

Human immunodeficiency virus/Acquired immunodeficiency syndrome is a chronic infectious disease caused by HIV virus [1,2]. It is characterized by spectrum starting from primary infection with or without the acute syndrome by relatively long period of asymptomatic stage after which in most patients' progress to advanced and life threatening disease [3,4,5]. The major mode of transmission of HIV/AIDS worldwide is heterosexual

contacts particularly in developing countries other routes of transmission include transfusion of infected blood and blood products, occupational transmission, prenatal transfusion and others [6,7,8]. The two most important risk of HIV infection are having sexual contact with many partners and having STDS [9]. AIDS was 1st recognized in USA in 1981 among homo sexual males: pneumocystis carnie pneumonia was seen

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among 5(five) homo sexual and Kaposi sarcoma was diagnosed in 26 homosexuals with the virus [10]. There are 11.8 million HIV infected youth worldwide African youth face fast growing rates of infection with HIV and STIS [11]. In this region most new HIV infection occurs among people ages 15-24 and is sexually acquired [12]. In 1983, AIDS was diagnosed for the first time in two patients. In South Africa, the first recorded death owing to AIDS occurred in 1983. By 1986, there were 46 recorded AIDS diagnosis. Estimates from 2000 indicated that 5% of actual infection and only 1% of actual death due to AIDS among homosexual people were reported prior to 1990. AIDS infection started reaching pandemic proportional around 1995. The high prevalence of HIV and AIDS amongst the youth due to risky sexual behaviors, poor attitudinal problems and unfriendly services for adolescents. Recent study assessed level of knowledge about HIV/AIDS among youth of Kenya, almost 99% of the youth (students inclusive) are aware of HIV/AIDS but behavior change is slow as most of them still engage in risky sexual behavior as is evidenced by the high number of teen age pregnancies and school drop outs associated with poor attitudinal towards condom use [13].

HIV pandemic is a major threat to adolescents; this is especially important for adolescents and the youth who, in 2008, accounted for 40% of new HIV infections [14]. Data from the 1989 Secondary School Student Health Risk Survey indicate that 54 percent of all high school students in the United States had had some form of HIV/AIDS education in school. Responses to a questionnaire on HIV/AIDS knowledge show that nearly all students knew the two main modes of HIV transmission--intravenous drug use and sexual intercourse [15]. Students who had been taught about HIV and AIDS in school gave correct answers to questions about the virus more often than those who had not received instruction. Students who knew more about HIV transmission were less likely to report having had two or more sexual partners and more likely to

Nwankwo and Uwizeye report consistent condom use. Worldwide [16]. Rwanda is among Sub-Saharan African countries that have been hit most by the HIV/AIDS pandemic, particularly due to high levels of poverty and the 1990s civil war and genocide [17]. AIDS orphans account for more than 2%. But there has been significant progress in fighting the pandemic. The Demographic and Health Survey 2005 estimated the national HIV/AIDS prevalence at 3%, which represented a decline from about 5.1% in 2003 and about 12.8% in 1998. This represents a remarkably positive trend from 5.1% in 2003 [18] and the 1997 estimates that put sero-prevalence at between 11% and 12.8%. HIV/AIDS prevalence in Rwanda varies among socio-demographic categories (e.g. age groups, social status, education levels), location (urban/rural) and occupation (farm/non-farm, formal/informal sector, employed/unemployed), among other factors. More women than men are infected (2.3% for males, 3.6% for females). HIV/AIDS prevalence is also higher among urban than rural populations 7.3% in urban and 2.2% in rural areas [19].

In Kenya, urban residents have a significantly higher risk of HIV infection (7.2%) than rural residents (6.0%). However, even in urban areas there are huge disparities in HIV prevalence with urban slum settlements having a significantly higher prevalence of HIV than non-slum urban areas. For example, a recent study conducted in two urban slum settlements in Nairobi showed that the overall HIV prevalence in these slum settlements is estimated at 12% which is much higher than the national average (7.1%) and the overall prevalence in Nairobi (9.7%), [20]. In a study conducted by Rwandan Bio-medical Center (RBC) on the knowledge about HIV/AIDS; the results showed that almost all respondents (99.2% of females and 99.1% of men) have never heard of HIV/AIDS [20]. Another study done in South province (HIV/AIDS Education in Butareville Secondary Schools) where a pedagogic framework was introduced and used as an analytical device that provides

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a coherent educational language of description for exploring HIV/AIDS education in pedagogic terms, findings showed that behavior change is slow as most of them still engage in sexual behaviors where data on Rwandan youth suggest that small proportions of both females and males are sexually experienced at an early age [20]. In the 2005 RDHS (Rwanda Demographic and Health Survey), 5.2% of youth aged 10-19 reported having had sexual intercourse before the age of 15 years. However, by age 20-24, nearly 20% of women and 20.2% of men reported having sexual intercourse before age 18. The spread of HIV/AIDS among youth of urban areas is still increasing where the City of Kigali, Capital of Rwanda has the highest prevalence at 7, 3% while all other provinces prevalence is below 3 % [21].

In 2006 UNAIDS reported that behavior change among some urban of Rwanda's population such as secondary school students in Kigali city has remained a challenge where early sexual activity, nightclub attendance, cigarette smoking, drug use, and alcohol use are available in Kigali more than other rural areas, this make youth of Kigali to be exposed more than youth of rural areas [22]. High levels of awareness about HIV/AIDS do not translate to the desired behavior change. Thus the need to determine factors associated with knowledge on spread of HIV/AIDS among students for HIV/AIDS prevention among secondary school students of Groupe Scolaire de Rugando in Kimihurura sector in Kigali city, assess the risky sexual behaviors towards HIV/AIDS and their attitudes about risky sexual behaviors towards HIV/AIDS [23]. Furthermore, Youth in Rwanda constituted 40% of the resident population in 2012, numbering 4.1 million. Ministry of Youth, Culture, and Sports defines youth as those from age 14 to 35 years, over 50% of the Rwandan population is under 20 years. Urban areas of Rwanda have a higher percentage of youth than rural areas, and Youth constitute over 53% of the population within the capital, Kigali. The youth population in Rwanda grew by 30% from

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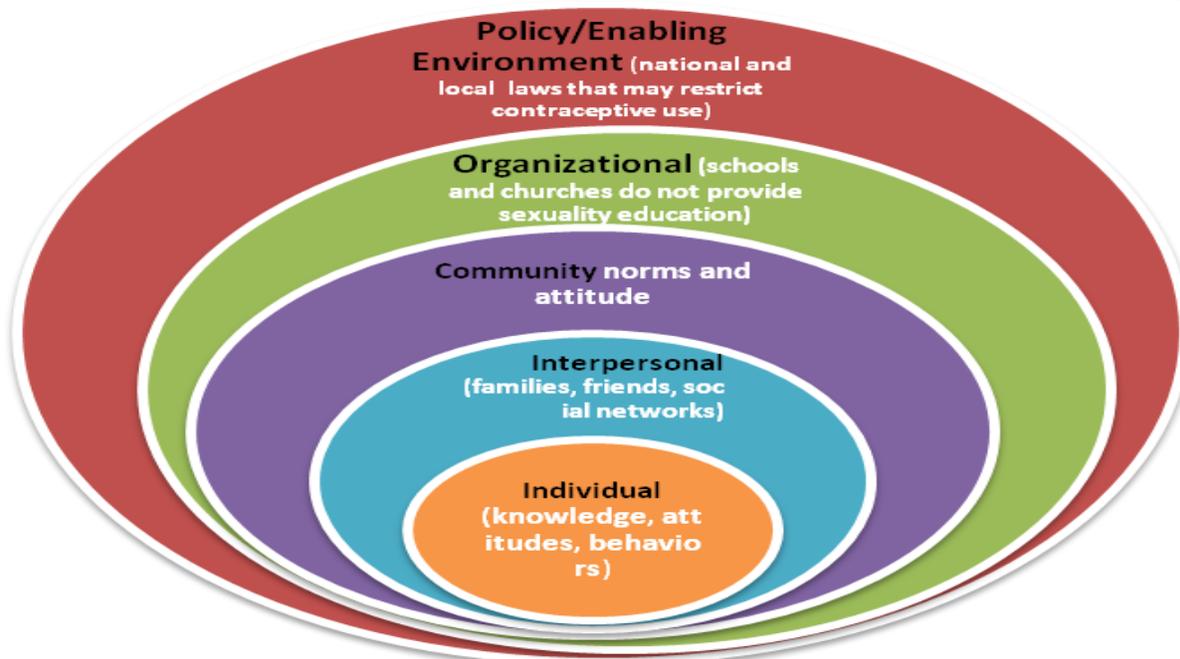
2002 to 2012 [24]. Youth in urban areas are more likely to contract HIV with the prevalence of HIV in urban areas at 7.3 percent versus 2.2 percent in rural areas [25]. Most youth education programs on HIV/AIDS focus on abstinence-only and do not stress the importance of condom use. The study focus on promoting desired behavior among this age cohort because of the physiological changes that could drive them to engage in risk behavior for HIV. For instance, secondary school curriculum planners will use the research findings to enable them to incorporate and enforce teaching of reproductive health education in secondary schools. Study findings will benefit government, regional, non-governmental organizations and where appropriate, private sector for designing, planning and implementing HIV/AIDS interventions among youth of Kigali city. The information provided in the study will contribute to necessary policy reforms on combat of the scourge. The research will benefit youths by making them more conscious of dangers and limitations inherent when person contract HIV. The research will generally add value to the body of knowledge and understanding of HIV/AIDS. This will be beneficial to researchers who may want to researcher more on this area [26].

**A theory** that was used to explain the concept in the study includes; Bronfenbrenner's ecological theory of human development, Bandura's Social Learning theory, and the Socio-ecological model will be the foundations of this research. Bronfenbrenner's Ecological Theory of Human Development views the youth to be in a multiple system levels microsystem, meso-system exo-system, macro-system and chrono-system. The microsystem refers to the youths' immediate surroundings. Any immediate interactions or organizations, with which the youth interacts, like the family, peer group, or school context, are considered microsystems. Macro-system is the social economic status which is key determinant in STIs and teenage pregnancy [27,28,29]. Interrelationships between different microsystems are described by the mesosystem. Peer educational goals, peer

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involvement, sexual partner pressure, and liberal sexual attitudes of peers are all components of peer influence that have been studied at the mesosystem level. Within the ecological system, a child's exosystem could be broadened to encompass social media, video games, and other modern-day activities [30]. The media has influenced children's behaviour in many different ways depending on what they watch and from which platform. For instance, continuous watching of pornographic films influences the behaviour of the individual to practice what he/she is exposed to. Bronfenbrenner developed his idea into what is now known as his bio-ecological model by refining and revising it. During this time, there was a greater emphasis on distinguishing between the ideas of environment, person, proximal process, and time as they pertain to human development [31]. Direct experience, indirect experience from observing others and the storing and processing of complex information through cognitive operations are the three main processes involved in learning, according to social learning theory. This theory proposes that behaviors are learned and influenced by social context; the media, particularly television, is seen as an increasingly powerful agent of socialization, with its effects manifested in teenagers' tendency to learn by imitation. Modeling would be a

Nwankwo and Uwizeye crucial component of applying Social Learning Theory to teenage pregnancy: teenagers imitate behaviour from others in their environment through observational learning. The messages they hear about sexual behaviour from the media, friends, family members, religious leaders, and others will almost certainly differ to some degree [32]. A socio-ecological approach to adolescent pregnancy considers the complete range of complex determinants of adolescent pregnancy, as well as their interactions. Pressures from all sides conspire against girls, resulting in unintended pregnancies. National restrictions may make it difficult for a girl to obtain contraception. If she manages to get access to assistance, community norms and attitudes may prevent her from getting them or condone violence against her if she does. Family members may try to coerce her into a marriage in which she has little or no control over whether or not she has children. Because schools may not provide sexuality education, she must rely on (sometimes wrong) knowledge about sexuality, pregnancy, and contraception from her peers. Her partner may refuse to use a condom or prohibit her from using any form of contraception [33].



**Figure 1: The Socio-ecological model.**

About half of all new H.I.V infections occur among the youth aged between 15-24 years of age [34]. In some countries in Africa where AIDS is wide- spread, early and risky sexual activity increases young people's vulnerability to HIV [35]. HIV is concentrated in high risk groups which often includes significant number of young people [36]. The impact of HIV/AIDS among adolescents is felt by the society at-large. Students are dying or leaving schools, reducing both the quality and efficiency of the educational system [37]. Yet, the youth also present a window of opportunity for reversing HIV rates especially when effective prevention programmes can reach them before they engage in risky behavior [37]. Adolescence can be a highly charged developmental period [38]. This is because this period is characterized by the psychological needs of young people to individuate from parental attachment and form their own firmer identities [38]. This period does however usually involve young people shifting to a collective 15 peer group identity, before moving on to shape their own sense of self. They become attracted to and made vulnerable by the normative social influences of their peers [38]. The identity crisis of adolescence includes a crisis of sexuality.

The emergence of sexual needs in the face of unsure social and sexual identities can be both confusing and difficult [38]. The development of depression, withdrawal, often including oppositional deviant and risky behaviors is common among adolescents [39]. Teenagers often experiment with drugs, alcohol, casual sex and other risky behaviors [40]. It is for this reason that [38] rightly points out that the behavior of adolescents often places them at increased risk of HIV infection. According to [41] young people are difficult to categorize as a single group since they live within extremely variable contexts. Despite the collective ideal of providing health care, safe and happy environments for children to grow in, reality uncovers a series of physical, sexual, psychological, social and moral abuses [42] Focus on adolescents is important because it is the age when sexual habits and decisions about risk behavior and safe practices are formed. Some of the highest infection rates of STIs are in adolescents. The HIV/AIDS pandemic alone is sufficient reason to look a new at health services that address the needs of adolescents [43]. [44], identifies the following as among many factors for young people to engage in full sex;Alcohol or other drug consumption

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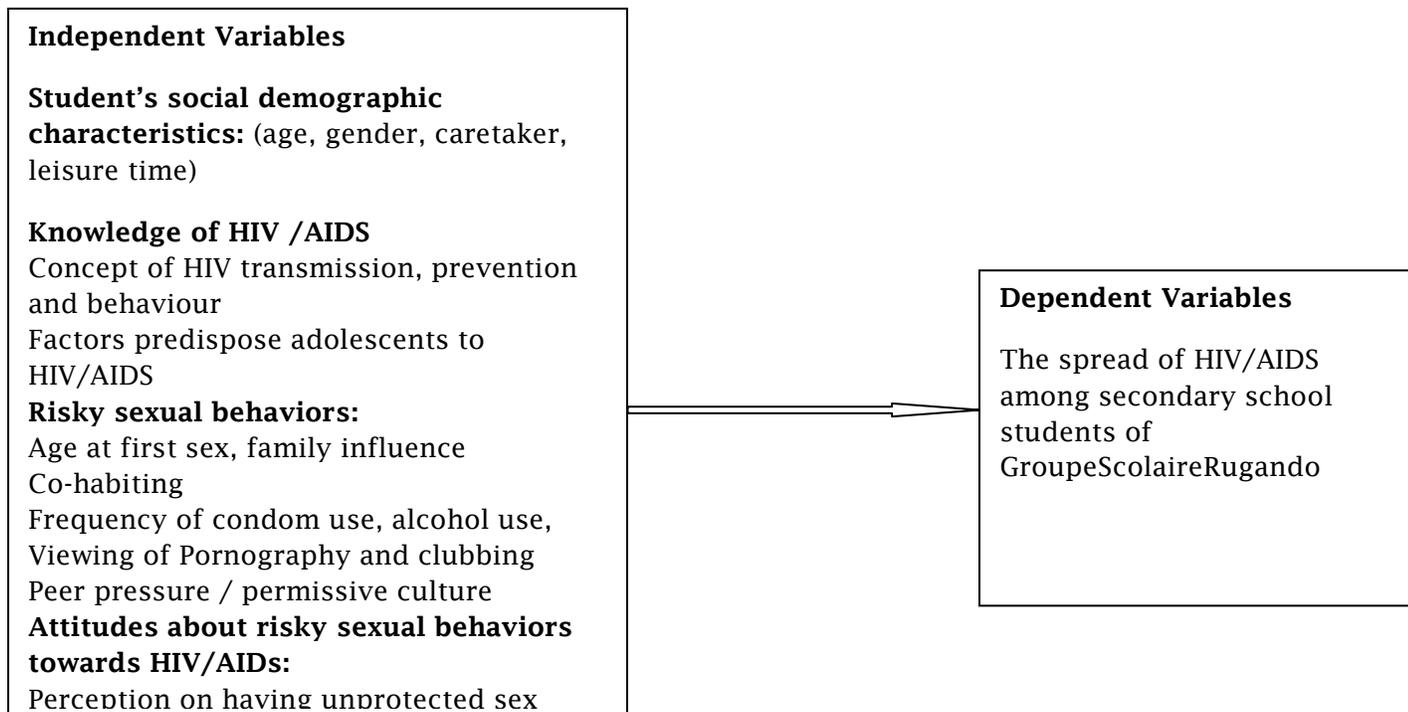
that reduce will-power judgment and inhibitions. Natural sexual desires and curiosity about sex, peer pressure on boys to be 'real men' or on either sex to do that everybody is doing Pressure on girls and boys who refuse to believe 'no' means 'no' or who do not care anyway. Sugar dad dies who may be teachers, relatives, friends of the family, outstanding members of the community or church or complete strangers. The urge to rebel against parental rule sand to establish an independent identity. Promiscuous role models set by the older generations and by idols such as musicians and sports stars. The media images showing casual sex in glamorous wealthy contexts. Poverty and the pressure on girls to engage in sex to pay for school fees, food or other needs. [45], further says that although pressure on girls and boys to engage in sex overlap, they also differ in crucial aspects. Girls often have less say about the condition of sex. They have far greater exposure to sexual abuse, lower socio-economic status and lack of economic options. This drives them more readily than boys into transactional sex. The final injury is that girls are more easily infected than boys by unprotected sex that even if motivated, they may lack the negotiating skills and power to avoid. Thus focus on adolescents is important because it is the age when sexual habits and decisions about risk behavior and safe practices are formed [45]. The impact of HIV/AIDS among adolescents is felt by the society at large. Students die or leave schools, reducing both the quality and efficiency of the educational system [46]. The high mortality and morbidity among adolescents has also affected the health sector, manpower development and the economy at large [8]. Previous studies carried out in Kenya indicate that despite adolescents having information and awareness of HIV/AIDS, many were still engaging in risky sexual behavior [13]. A large number of youth engage in sex at an age when they cannot fully realize the consequences of their actions with regard to the sources of information about HIV/AIDS, 79.6% of the students mentioned that television and radio were

Nwankwo and Uwizeye the main sources of information to them. Likewise, a majority (62.7%) of senior secondary students belonging to a government school in Chandigarh reported that they derived most of the information from TV and radio. Previous study, only 9.5% of children had heard about HIV/AIDS through their respective school programmes. This finding suggests that school AIDS education should be strengthened further in schools [9]. In Kenya, HIV/AIDS among adolescents is almost entirely a sexually transmitted infection. 90% of adolescents get infected with HIV through sexual contact and that teenage girls are more susceptible and vulnerable to the epidemic, with an infection rate of five times more than boys of the same age. There may be behavior changes that would decrease transmission of HIV. Increased awareness could lead to reductions in risky sexual behaviors through increased condom use, delays in sexual debut, reduction in the number of sexual partners and probably a reduction in the prevalence of other STIs [14]. The sources of knowledge on HIV/AIDS were designed into multiple choices. Television/broadcast was reported as the major source of information about HIV/AIDS Training of HIV and AIDS Education Teachers. The study collected information on the knowledge about HIV/AIDS; the results showed that almost all respondents (99.2% of females and 99.1% of men) have ever heard of HIV/AIDS [15]. Various entertainment and media outlets bombard viewers with depictions of sexuality in some Western countries. Nevertheless, this aspect of popular culture opens doors for parents who dare to enter into discussions about sex with their children. This is a direct contrast to that of Rwanda where the intimate details of one's sex life is often kept private; hidden from public view. Talking about sex is considered, by most families, a stray from cultural norms. Culturally, there does not appear to be a clear definition of sex education in Rwanda [16]. The Rwandan government has adopted peer education as a strategy to prevent HIV infection among in-school youth. Peer

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education is "the process whereby well-trained and motivated young people undertake informal or organized educational activities with their peers (those similar to themselves in age, background or interests) over a period of time, aimed at developing their knowledge, attitudes, beliefs and skills and enabling them to be responsible for and protect their own health. Since 1998, the Rwandan Government has been installing anti-AIDS clubs in secondary schools. Ten years later 98% of secondary schools had installed such clubs. However, the anti-AIDS clubs often remain inactive due to a lack of guidance, financial and material support [30]. The study conducted in Malawi, young people become sexually active at an early age. Almost 60% of secondary school students interviewed said that they were sexually active with a mean age of first intercourse being 15 years. While there is little good quality evidence it also seems that adolescents in Malawi are becoming sexually active younger. Male focus group discussion in Malawi indicated that there was strong peer pressure to become sexually active: The guys who have girlfriends are seen as heroes as "However less than one quarter of sexually active adolescents consistently used condom [32]. Furthermore; condoms were used only some times by about a third of those who were undergo sexual intercourse. In practice, sexually active students are still shy to buy condom

Nwankwo and Uwizeye because of religious and socio-cultural norms related to youths, especially unmarried youths. It is worth noting that about 30% of sexually active students undergo sexual intercourse under the influence of alcohol and drugs of abuse and 31.7% undergoes through an unusual route. In-line with this, risky sexual behaviors among college students in association with their condom utilization has recently been reported from [15]. Observational learning occurs when attitudes are acquired from friends and the mass media. The approval and disapproval of peers moulds attitudes, especially those held in common with other group members [16]. For instance, a new girl joins an existing group in a school whose norms include; having sexual intercourse with men in exchange for money. Her attitude or behavior will coincide with other group members. She will end up believing in 'commercial sex' thus acquiring a favorable attitude toward the norm, even if the original intention of joining the group was to explore her new environment. 35 In cognitive appraisal, one evaluates information on the basis of evidence. For instance, a boy who believes that condoms make sexual intercourse unpleasurable may revise such a stereotype on the basis of new information purporting condoms as safety gadgets against HIV/AIDS. Attitudes acquired later are thus judged in terms of how much they deviate from the initial set [20].



**Fig 2: conceptual framework**

The research was conducted in school of Groupe Scolaire de Rugando. Is located in Kimihurura sector, Gasabo district in Kigali city (Rwanda). It is a mixed school and it has a big population of 950 students. A descriptive cross-sectional design using quantitative method was employed in this study to assess factors associated with knowledge on spread of HIV/AIDS among students. Study dependent variables was the spread of HIV/AIDS among secondary school students of Groupe Scolaire Rugando while independent variables were students' social demographic characteristics, Knowledge of secondary adolescents' students on HIV/AIDS, Attitudes about risky sexual behaviors and Risky sexual behaviors. The population was secondary school students in upper classes (4.5 and 6 levels) as target population of study. The target population for the study comprised of 950 students in secondary school of Groupe Scolaire de Rugando, Inclusion Criteria: Upper classes students were included. Senior 4, 5, 6 were included and all the students that gave their consent to participate in the study. While the exclusion criteria: Lower classes students were excluded. Senior 1, 2, 3

were excluded and students who did not give their consent of participation.

Researcher used Cochran's formula to find out what sample of a population of 950 people you need to take. Researcher wanted a confidence level of 95 percent (which will give a margin error of 0.05); the target population was 180 students. Plugging data into the formula. In this study, researcher used a 95 percent confidence level with a population size of

$$950. n = \frac{z^2 pq}{e^2} \quad z = \text{standard deviation}$$

corresponding to 95 % (1.96)  
 P=proportion/whole population among youth

q=100%-P (proportion in target population) and

e as absolute precision power at 5%

$$p = \frac{180 \times 100}{950} = 19\%$$

$$q = 100\% - 19\% = 81\%$$

$$n = \frac{1.96^2 \times 0.19 \times 0.81}{(0.05)^2} = 236$$

Non response rate was 10%

$$236 \times 10 / 100 = 23.6$$

$$23.6 + 236.0 = 259.6$$

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Finite correction (NF) =  $\frac{\text{sample}}{1 + (\frac{n}{\text{total target population}})}$  =

$\frac{260}{1 + \frac{260}{180}} = 108$  students

The probability sampling technique used was systematic sampling technique, which involved getting the list of students in the way that sat in class and in line

Table 1:

Level of the student that will participate in the study	Total sample drawn
Class four	37
Class five	32
Class six	39
Total	108

The data was collected using a semi-structured and structured questionnaire, self-administered questionnaire which comprised of four parts. Part- A related to student's socio demographic background, Part- B on knowledge regarding HIV, and Part -C on high risk behavior or practice related to HIV transmission. Part- D on students' attitude scale towards HIV/AIDS. Pretesting was done on a small sample of students from another secondary in Kicukiro outside the target population. One class from lower classes was randomly selected for the pilot study. This class was not therefore, involved in the subsequent actual study then after the pilot test, respondents were asked a series of questions regarding the research as well as the process of data collection during the debriefing session. Such debriefing sessions can help detect any problem with the questionnaire design leading to ambiguity of words, misinterpretation of questions, inability to answer a question, sensitive questions and many other problems associated with the questionnaire as well as the process of administering the research. This was followed up by the review of the study instrument by the supervisor and

Nwankwo and Uwizeye with the school record. Simple random sampling was used for number 1 to 10 and 3 was chosen. So the interval of 3 students in in the list was drawn from until the sample was reached for each class as shown on the table below.

another expert in the field before a final approval was given. The questionnaires were independently pre-tested using 20 volunteer students by two different enumerators to assess their validity. After the pre-testing, views were exchanged to address the difficulties identified, appropriateness of the questions reviewed and appropriate changes made. Quality of data collection was given first priority throughout the study period. This included: close monitoring of students, cross-checking of completed questionnaires on daily basis, and daily reviews conducted with the survey teams to address any difficulties encountered. To ensure the external validity of the study has been maintained, relevant literature has been reviewed and opinions from the experts in the concerned field of HIV/AIDS research have been obtained. The introduction letter was taken to the institution head and approval received. Then the questionnaire was distributed among the students. Before administering the questionnaire, the nature of the study has been explained to the students and they were assured of the anonymity of the survey and secrecy of his/her personal answers. Students were made to sit apart and asked

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not to communicate with each other during the administration of the questionnaire so as to encourage honest responses. The process of data collection lasted for 1 month. After collecting the completed questionnaires, students were thanked for their participation. This was followed by data sorting, checking and return rate calculated. Microsoft Excel was used to enter and analyze the data. The percentage of respondents with positive responses was calculated for each question. The total for each section were calculated as the average of the percentage correct responses. A preliminary analysis was done to facilitate coding of open-ended questions and recoding of variables where necessary. The results are presented in form of tables. Descriptive statistics were determined

#### Study Findings

Study findings on gender distribution showed male students 61 (59.8% with 95% Confidence interval of .49.63 – 76.94) as compared to that of female 41 (40.2% with 95% Confidence interval of 30.61 - 50.37) students. Most dominant age cohort in the study are age group 19 to 20 years 58 (56.87%, 95% C.I. 46.68 – 66.63) and 17yrs – 18yrs who are 34 (33.33%, 95% C.I. 24.31 – 43.36). Most of the

Nwankwo and Uwizeye during data analysis. The research team was informed the students about the objectives of the study and was each given ample time to reflect on them. The right of self-determination means the participants had right to decide voluntarily if they want to participate in study or to terminate their participation, therefore researchers was to obtain informed consent before conducting research in order to assure them that the information provided was remained private and confident. Questionnaires were administered to a total of 108 respondents. However, only 102 distributed questionnaires were completely filled to enable effective analysis of their data representing a response rate of 94.44%.

respondents in the study lived with their parent or parents, 75 (73.53%, 95% C.I. 63.87 – 81.78). While majority in study spent their leisure time or free time while away from school on drama clubs at 27 (26.47%, 95% C.I. 18.22-36.13) whereas the least liked activities were watching videos and engaging in sports each registering 17 (16.67%, 95% C.I. 10.02-25.34)

**Table 2: Socio-demographic characteristics of the study Respondents**

Questions on study variables	Proportion	%	95% Confidence
<b>Gender</b>			
Male	61	59.80	. (49.63 - 76.94)
Female	39	40.20	(30.61 - 50.37)
<b>Study Participants' Age Group</b>			
15yrs - 16yrs	5	4.9	(01.61 - 11. 07)
17yrs - 18yrs	34	33.33	(24. 31 - 43.36)
19yrs - 20yrs	58	56.87	(46.68 - 66.63)
21yrs - above	5	4.90	(01.61 - 11. 07)
<b>Caretaker of Respondent</b>			
Parent(s)	75	73.53	(63. 87 - 81. 78)
Uncle or Aunt	2	1.96	(00.24 - 06.90)
Sibling(s)	9	8.82	(04 .11 - 16.09)
Guardian	16	15.69	(09. 24 - 24.22)
<b>Study Respondents' Leisure Activities and place</b>			
Disco dance	21	20.59	(13.22 - 29.73)
Games/Sports	17	16.67	(10.02 - 25.34)
Watching Videos	17	16.67	(10.02 - 25.34)
Bars	20	19.61	(12.42 - 28.65)
Drama Clubs	27	26.47	(18.22 - 36.13)

**Findings on Knowledge of factors predisposing adolescents to HIV/AIDS**

This objective was assessed by asking the respondents to respond to a series of statements regarding factors that predispose adolescents to HIV/AIDS. About 22.5% disagree that male/female circumcision is important this implies that some of the respondents have limited information about the relationship of male /female circumcision and HIV/AIDS spread. Also 24.5% strongly agreed that

reading or watching pornography is among the factors that can lead the students in sexuality. But 16.7%, 14.7% disagree, strongly disagreed respectively. Furthermore, about 23.5% and 18.6% of the participants said that drug use /abuse can be among the factors that are behind the spreading of HIV/AIDS in secondary youth, though 26.5% and 10.8% did not agree to it as in table 3 below.

**Table 3 Distribution of study participants with regards to knowledge of HIV/AIDS (n = 102)**

Statement	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	Std. Dev.
Male/female circumcision	22(21.60)	21(20.60)	15(14.70)	21(20.60)	23(22.50)	2.98	1.482
watching pornography	25(24.50)	23(22.50)	22(21.60)	17(16.70)	15(14.70)	3.25	1.384
Drug use and abuse	19(18.60)	24(23.50)	21(20.60)	27(26.50)	11(10.80)	3.13	1.295
Peer pressure/influence	37(36.30)	24(23.50)	18(17.60)	7(6.90)	16(15.70)	3.58	1.438
Influence from mass media	15(14.70)	19(18.60)	19(18.60)	22(21.60)	27(26.50)	2.74	1.414
Poverty	6(5.90)	9(8.80)	14(13.70)	34(33.33)	39(38.20)	2.11	1.185
Availability of contraceptives	29(28.40)	33(32.40)	19(18.60)	11(10.80)	10(9.80)	3.59	1.277
Curiosity/need to experiment	46(45.10)	31(30.40)	15(14.70)	5(4.9)	5(4.90)	4.06	1.115
Poor role modeling by parents	14(13.70)	19(18.60)	29(28.40)	24(23.50)	16(15.70)	2.91	1.267
Relaxed rules at home/church/society	15(14.70)	21(20.60)	27(26.5)	17(16.70)	22(21.60)	2.90	1.353

Further question on the concept of HIV/AIDS Knowledge showed that 36.3% and 23.5% accepted that peer pressure is strong influencing factor that leads secondary students in risky sexual behavior that can further contribute to risk of HIV/AIDS. About 45.1% participants strongly agreed that curiosity or need to experiment is among the factors that made them engage in sexual activities. This shows that some teenager (adolescent) secondary school undergoes their first sex in the way of curiosity

while they don't have enough knowledge about sex. Despite the fact that 78% students respondent accept that HIV is transmitted by engaging in unprotected sexual intercourse with an infected person and 65% accept that risk of contracting HIV is increased, and the other 69% accept that regular use of condoms helps to reduce the risk of contracting HIV and 55% accept that by reducing the number of sexual partners, one reduces chances of HIV infection.

Table 4: The concept of HIV/AIDS Knowledge

Items on HIV/AIDS Knowledge	YES	NO
a) A person can be infected with HIV/AIDS but not even know about it.	59 (57.84)	43 (42.16)
b) One can tell someone infected with HIV/AIDS virus by just looking at him or her.	12 (11.76)	90 (88.24)
c) A person who is sick with AIDS can infect others.	65 (63.73)	37 (36.27)
d) Risk of contracting HIV is increased by presence of other sexually transmitted diseases	72 (70.59)	30 (29.41)
e) HIV is transmitted by engaging in unprotected sexual intercourse with an infected person	78 (76.47)	24 (23.53)
f) A person with many different sexual partners could beat risk of HIV infection	56 (54.90)	46 (45.09)
g) By reducing the number of sexual partners, one reduces chances of HIV infection.	55 (53.92)	47 (46.08)
h) Regular use of condoms helps to reduce the risk of contracting HIV..	69 (67.65)	33 (32.35)

The risky sexual behaviors among study participants

The study findings presented with regards to whether the respondents had engaged in sex before. About 44 (43.14%, 95% C.I. 33.37-53.32) of the students indicated that they had previously engaged in sex, while 58 (56.86%, 95% C.I.

46.68-66.63) shows that they did not engaged in sexual practices. This shows that the majority of secondary school student had been engaged in sexual behaviours in Kigali.

Table 5.: Whether respondents have had sex before (n =102)

Have you ever had sex?	Frequency	Percent	95% Confidence Interval
Yes	44	43.14	(33.37 - .53.32)
No	58	56.86	(46.68 - 66.63)

Study result showed that at age 16 25(24.51%) some respondent have experienced first sex, another group

experienced first sex at age 15 12(11.76%) and the other at age 17, 3(2.94%) experienced their first sex. The

result shows that this age group is the most vulnerable on the factors that

Nwankwo and Uwizeye influence all adolescent youths to engage themselves in risky sexual behaviours.

**Table 6 : Distribution of respondents' sex debut age**

Age	Frequency	Percent
14	1	0.98
15	12	11.76
16	25	24.51
17	3	2.94
18	2	1.96
19	1	0.98

Furthermore: Findings on the number of sexual partners revealed most number of students had 0 sexual partners, 56.86%. But about 15 (14.71%) have 2 (two) sexual partners, while 4 (3.9%) had 3(three)

sexual partners. This is very critical considering their age and risks associated with multiple sexual partners.

**Study Participants level of use of condom**

The study findings presentation on respondents who had used condom during their previous sexual activity, showed that majority of the students who had engaged in sex had never used a condom 26 (59.09%, 95% C.I. 17.38-35.08)

whereas only 18 (17.65%, 95% C.I. 10.81-26.45) out of the 44 students had used a condom. This findings revealed students engagement in sex are at risk to get an HIV/AIDS and unwanted pregnancies because of unprotected sex.

**Table 7: Distribution of respondents on condom use**

Have you ever used a condom?	Frequency	Percent	95% Confidence Interval
Used condom during sex	18	17.65	(10.81 - .26.45)
Did not use condom during Sex	26	25.49	(17.38 - 35.08)
Did not need to use condom	58	56.86	(46.68 - 66.63)

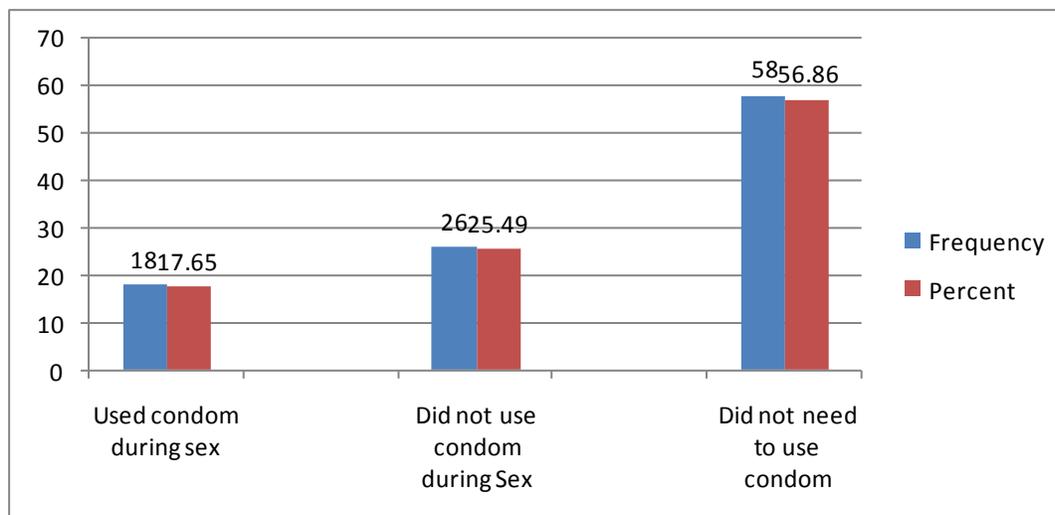


Figure 3 Study Participants level of use of condom  
**Participants Frequency of condom use**

Even though 18 out of 44 (40.91%) of those who engaged in sex had used a condom before, only 5 (27.78%, 95% C.I. 01.61-11.07) of them used a condom every time they had sex. This shows that

the information they have about the importance of using condom and other protective materials are not enough, so they don't care if sex is protected or not.

**Table 8: Frequency of condom use**

How often do you use a condom?	Frequency	Percent	95% Confidence interval Interval
Every time	5	27.78	(01.61 - 11.07)
Some times	8	44.44	(03.45 - 14.87)
A few times	5	27.78	(01.61 - 11.07)

**History of STIs among study participants**

In addition; Out of the 43.14% respondents who had engaged in sexual activities previously, only 7.84% or (8 out of the 44 students, 95% C.I. 03.45-14.87) had suffered one or more Sexually Transmitted Infections. These 8

respondents were further asked if they sought any treatment; 4 indicated that they were treated at the school clinic while the rest (4 respondents) were treated in private clinics.

**Table 9: Distribution of respondents with history of sexual transmitted infection (STIs)**

Have you ever suffered from a sexually transmitted infection?	Frequency	Percent	95% Confidence interval
Yes	8	7.84	(03.4.5 - .14.87)
No	94	92.16	(85.13 - 96.55)

**Assessing study respondents Attitudes about risky sexual behavior**

The findings with regards to the perception of having unprotected sex with partners posed to the respondents showed that some respondents 45.10%

felt that having unprotected sex with your boyfriend/girlfriend proved that she loved you. While the rest of their counterpart say no on that argument.

**Table 10: perception on having unprotected sex (n = 102)**

Unprotected sex with your partner proves that he loves you	Frequency	Percent
Yes	46	45.10
No	56	54.90

**Respondent's perception of partner on consistent condom use**

According to the respondents the fear that their sexual partners would not enjoy sex if they consistently used a condom at all-time 40 (39.22%, 95% C.I.29. 69 - 49.38). This was seconded by those who felt their partners would not trust them if they insisted on condom use every time at 28 (27.45%, C. I. 19.09 - 37.18) and

followed closely by 25 (24.51%, C. I. 16.53 - 34.02) who believed that regular use of condoms meant that your sexual partner did not love you. In further discussion some of the respondent said that they fear that condom can break off and few pieces remain in their sex and can lead to cancer.

**Table 11: Distribution of respondents' perception of partner on consistent condom use**

<b>Fears about your sexual partners when you consistently use a condom every time you have sex?</b>	<b>Frequency</b>	<b>Percent</b>	<b>95% Confidence Interval</b>
You do not love him or her	25	24.51	(16.53 - 34.02)
You are not trusted	28	27.45	(19.09 - 37.18)
Does not enjoy sex	289	39.22	(29.69 - 49.38)
You have sexually transmitted disease	40	8.82	(04.11 - 16.09)

**Exploring perception of others on those who abstinence**

According to the results 52 (50.9%, C. I. 40.89 - 61.01) said that other students will call them coward if they abstinence from sex 3,7 (2.24%, 6.86%, C. I. 00.61 - 08.36 and 02.80 - 13.63) or are attributed to be infected with HIV or sexual

dysfunction respectively because of their abstinence. On other hand 40 (39.22%, C. I. 29.69 - 49.38) of the respondent think people said that they are over conscious of sex for their abstinences.

**Table 12: Distribution of perception of others on those who practices sexual abstinence**

<b>What do you think people say about you when you abstain from sex?</b>	<b>Frequency</b>	<b>Percent</b>	<b>95% Confidence Interval</b>
Coward	52	50.98	(40.89 - 61.01)
Infected with HIV	3	2.94	(00.61 - 08.36)
Not functioning sexually	289	6.86	(02.80 - 13.63)
Conscious	7	39.22	(29.69 - 49.38)

**Summary of Findings**

The findings were summarized in respect with description and assessment of the factors associated with the spread of HIV/AIDS among secondary school students of GroupeScolaire de Rugando in Kigali city. The participants agreed that curiosity and need to experiment lead them to activity and some students in the study don't have enough knowledge about sex and accepted that peer pressure influenced them. Others accept that regular use of condoms helps to reduce the risk of contracting HIV as well as

reducing the number of sexual partners could reduce chances of HIV infection. The determination of the risky sexual behaviors and practices among secondary school students of GroupeScolaire de Rugando which can contribute to HIV/AIDS, many students in the study had early sexual debut, some have more than two sexual partners and seldom use protection to please the partners. The assessment on attitudes about risky sexual behaviour among secondary students of GroupeScolaire de Rugando,

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good number of students in the study had experienced sexual intercourse, few have used condom protection during sexual experience and others that engaged in unprotected sex and had never used a condom to prove love for the boyfriend.. While the rest on argument on why they

## DISCUSSION

Discussing the findings based on study objectives; the students in the study were more male students, this finding was found to be similar to that of Kenya where 58.8% were male, while 41.1% were female [34]. Most of the respondents were aged between 19 and 20 years similar to the study done in Ghana where (70.4%) of the respondents were between the ages of 16 and 19 [37]. Also most of the respondents live with their parent or parents, same findings was similar to the study done in Gabon, where all participants were living with parents and siblings [28]. Furthermore on Knowledge of spread of HIV/AIDS, majority of the youth in Rwanda had heard about AIDS before and the ways of prevention where all youth (99.9%) believe it is possible to avoid HIV infection and about 98.8% of respondents were aware that abstinence from sex was a prevention measure, but 57.9% reported use of condoms and 23.7% reported being faithful to one sexual partner as prevention measures. The most common predisposing factors in the study to adolescents to HIV/AIDS was curiosity and need to experiment, **these** findings strongly agreed with study done in South Africa, where 49% of participants had engaged in early sexual intercourse in terms of experiment (Paul B., 2014). Few students in the study accepted peer pressure as a strong influence as well as reading or watching pornography and drug use /abuse can be among the factors that are behind the spreading of HIV/AIDS in secondary youth. This confirms what [19], studies has identified as factors predisposing adolescents to HIV/AIDS which include alcohol or other drug

The level of knowledge regarding factors predispose adolescents to HIV/AIDS was considered satisfactory and information about HIV/AIDS and reproductive

Nwankwo and Uwizeye maintain absence as coward from sex. Most of them perceived that usage of condoms consistently when engaging in sexual activities would make partner not enjoy sex and that they fear that condom can break off and few pieces remain in their body could lead to cancer.

consumption and reduced will power judgment and inhibitions, peer pressure, permissiveness and lack of role models in the society. The most risky sexual behaviours in the study includes early sexual debut, unprotected sex, having more than two partners and having sexual intercourse to enable partners enjoy the sex, not using condom regularly for most sexual experiences, with disregards to risk of HIV/AIDS and unwanted pregnancies. This shows that the majority of secondary school student had been engaged in sexual behaviours in Kigali. This finding was found to be similar to that of recent study done in Rwanda, Condom use during first intercourse was very low for both males and females (8.3%). In the age 15-19, almost 46% of respondents reported having had sex [9]. The attitudes towards risky sexual behaviours, most students in the study perceived that usage of condoms consistently would make partner not enjoy sex, others believed that regular use of condoms meant that your sexual partner did not love you. These results are consistent with a study [17], where many adolescents continue to state that condoms reduce pleasure during sex, in Burkina Faso by an NGO in charge of social marketing of condom who found similar levels of 25% of males and 45% of females agreeing that condoms reduce pleasure [9]. Some fear to be called coward for their abstinence from sex or sexual dysfunction respectively because of their abstinence. Some even said that they are conscious on sex for their abstinences.

## CONCLUSION

concepts are still needed in this group of people in society This then gives a focus to health policymaker in the way to fight against the prevalence of HIV/AIDS among

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youth. Risky sexual behaviors is still a problem, Sexual education in schools should be reinforced and encourage safe practices. The misconceptions towards condom use observed in this study

#### RECOMMENDATIONS

Even if different actors should take various roles in order to tackle this issue effectively, they also have to work hand in hand for a better solution. **Researchers** recommend to the ministry of education to create a curriculum and projects that empowers the knowledge on health, safe reproductive and sexual behaviors among the secondary school students. This can be done in collaboration with the ministry of health, should jointly work towards availing more reading materials on HIV/AIDS and sexual behavior and design interventions that aims to raise awareness on the negative consequences from risky sexual behaviors. **Researchers** recommend to

#### Areas for Further studies

Complimentary study to assess factors influencing the quality of successful interventions for prevention spread of HIV/AIDS among students should be carried out to develop a wider

#### Limitations of the Study

The stigma attached to behaviors such as pre-marital sex and drug and substance

Nwankwo and Uwizeye should be Corrected also support from their parents or other caretakers whom they stay at home is needed to change attitudes or perceptions on about risky sexual behaviors.

ministry of education to increase availability and accessibility of condoms in schools to reduce number of students engaged in risky sexual behaviors and collaborating with ministry internal security, to fight against the entry of drugs in the country as well as their circulation and accessibility to the youth which influence them to be engaged in risky sexual behaviors. Guidance and counseling services should be strengthened in schools and should be well manned in schools to enhance behavior change by helping them changing their attitudes towards risky sexual behavior for HIV/AIDS prevention among the students.

and more comprehensive framework on HIV/AIDS Intervention strategies among Students. This study should be replicated in secondary schools of other provinces.

abuse, may have influenced the participants "responses.

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