

The Effectiveness of Condoms Supply with its Usage among University Students in Iringa, Tanzania

Joshua Juma Mugane

*Department of Counselling Psychology
University of Iringa, Tanzania*

Abstract: This study was done in order to examine the accessibility and sufficiency of supplied condoms together with their use among university students in Iringa, Tanzania. Survey research design and quantitative research approach were employed in order to let questionnaires effect data collection within a sample size of 164 university students, which was recruited through stratified sampling technique. The results have evidently stipulated that, there is insufficient supply and less effective use of condoms among university students when compared to the need and risky occasions that they are exposed to. That might be due to the fact that their universities show less concern in providing free condoms; while on the other side it might be due to the fact that, students value their sexual feelings and emotions without considering their vulnerability. Also it might be due to failure of getting enough packets that would satisfy their use, especially when trying to access condom boxes/dispensers. For such cases, the study recommends that the government should set and enforce policies regarding condom supply and use, so that universities through their respective students' organizations/governments may ensure condom boxes are procured and adequately supplied during semester sessions; while students being provided with safe sex education, so that they may either effectively use condoms or not do sex with their lovers without regular HIV retests.

Keywords: Condoms; Condom boxes; Condom dispensers; Condom packets; Condoms supply; Condom use; University students

Introduction

The campaigns towards safe sexual practices have persistently increased depending on the increasing rate of sexual transmitted infections/diseases. Tracing back before 1970s, the campaigns toward safe sex began. By then there was a great need of combating HIV and Zika Virus transmission. Some historical stories unveil that: earlier days before WWII the condition was so serious, to the extent that a lot of people (soldiers) died of sexual transmitted Infections/diseases like HIV/AIDS and Zika. This Zika disease (Virus) was discovered on 1947 by the Rockefeller Foundation during investigations on the ecology of yellow fever (D'Ortenzio, Matheron & Yazdanpanah, 2016; Gubler, Vasilakis & Musso, 2017), and it was proven to be transmitted via sexual intercourse (Hill, Russell & Hennessey, 2016; McCarthy, 2016).

Due to the rapid rapture and spread of sexual transmitted infections (STIs), there was a great demand of thinking how to combat them. Such aspect made scientists and health specialists of such era to work hard day and night for the purpose of coming up with best methods of preventing/protecting human beings from sexual transmitted infections that emerged. Their experiments and conclusions proposed that the use of "Condoms" would be suitable in preventing/protecting people from STIs; and due to that "Rubber Condoms" began to be offered to Americans and even to their soldiers (Chevallier, 1993). Despite of such invasion of condoms, still they were not considered as a permanent solution for sexual transmitted diseases like HIV/AIDS, but rather one of the prior methods in combating the severity of its spread.

Later on due to the use of condoms, Americans considered it as immoral and threat on their integrity (Brandt, 1985). But despite having such notion, still by the time of 1930s over 300 million condom packets were sold annually in the United States of America (Hlimes, 1963, pp.186-206). Moreover, some funds were collected in order to facilitate sexual education programs. And due to strong repercussions of STIs, the sexual education slogan was formulated and it emphasized that: "sex was both exciting and dangerous" (Brandt 1988, p.151; Fee 1988, p.137). Such a slogan was purposively intended to foster "Sexual Hygiene" and to reduce "the dominance of the disease with its dangers" (Moran, 2000).

After the invasion of condoms in USA and Europe, the same demand of using condoms spreaded in various places due to rapid emergence of sexual transmitted infections/diseases like HIV/AIDS. Until by 2003, the supply of condoms in other parts of the world was not as much as it was in United States (Global HIV Prevention Working Group 2003, p.2), but still several countries tried their best to import and supply them as preventive instruments against sexual transmitted diseases (including HIV/AIDS). In places like Sub-Saharan part of Africa, some studies indicate that there has been low usage of condoms due to low supply and availability of them, especially when needed to minimize the high existence of the severity of sexual transmitted

diseases like HIV/AIDS. Such a low usage of condoms made 22.4 million adults and children to live with HIV/AIDS, and 1.4 million people died due to such sexual transmitted disease because of low usage of condoms and abstinence from unsafe sexual practices (UNAIDS, 2009).

Currently, there are some factors that are seen to motivate people to use condoms, and some to not consider its usage as important. According to Carey et al. (2011) and Munguti (1997), people use condoms when they have entered into romantic relationship(s), while not having clear HIV/AIDS test results. Others use condoms as a protective instrument in order to avoid unwanted pregnancies (Juarez & Castro 2006). More studies show that, some people use condoms after negotiating and agreeing one another due to interpersonal differences (Misovich, Fisher & Fisher, 1997; Noar & Edgar, 2008). Finally, the fear of being infected by uncured sexual transmitted diseases has also contributed to the high usage of condoms. All these issues have catalyzed the usage of condoms to be of a great intensity.

Such factors have often called the attention of several health organizations, specialists and agencies, so as to ensure the supply of condoms continues to be consistent. Although there is such a demand, still some studies indicate that there is a supply gap. Proving this fact, UNAIDS (2016, p.10) justifies that there is a need of having a supply of more than 13 billion condom packets per year, so as to control the rate of sexual transmitted infections like HIV/AIDS. But until 2016, there has been a supply of 4.4 billion condom packets per year. In places like Sub-Saharan Africa, the ratio of the supply is 8 male condom packets per 1 man in a year (8:1), while having 1 female condom packet per 8 women in a year (1:8). With this, it has been noted that in most places there have been a regional supply gap despite having a large population demanding them (especially youths), so as to prevent themselves from HIV/AIDS (Centers for Disease Control and Prevention, 2021).

Despite having zonal supply gaps, still national governments and several health donors have tried their best to procure and distribute both male and female condoms to citizens of respective countries. For instance, in Malawi, the supply of condoms has often inclined due to the role played by the Ministry of Health, National Department of HIV/AIDS and the Directorate of Reproductive Health, and USAID's Global Health Supply Chain, Procurement and Supply Management (GHSC-PSM). Their reports have shown that in 2015 20,160,000 condom packets were supplied, while in 2016 there were 40,320,000 condoms supplied compared to 2017 that supplied 70,560,000 condom packets (Cisek & Khomani, 2018). Similarly, in Rwanda, the supply and usage of condoms has persistently inclined among young people aged 15-24 years. The reports indicate that by 2000 55% of male youths and 23.0% of female youths were proven to be supplied with and used condoms. Reaching 2008, the rate of condom supply and usage reached 68.7% among male youths and 40.3% among female youths. All that was achieved because public health service providers and other social market organization were mandated to procure and distribute after the government subsidized them with enough funds (Rwanda Ministry of Health, 2006).

Elsewhere like in Uganda, DR Congo, India, Gambia, and Zimbabwe, the supply and usage of condoms is reported to daily incline (Kayembe et al., 2008; Rachakulla, 2011; Grosso, 2015). The most consumers are said to be unmarried men and women, who have no agreement of being sexual partners. Among married couples, family planning is mentioned as enhancing factor toward condom use. The reports indicate that by 2001 in Zimbabwe 9% of sexual active women and 27% of sexual active men used condoms, while in Uganda there was about 7% of sexual active women and 15% of sexual active men who used condoms. Reasons like pregnancy prevention, STIs prevention and mistrusting fellow partners were relative to such usage (Mumtaz, Slaymaker, & Salway, 2002). Tracing in Tanzania, studies have revealed that condom supply and usage is persistently overcrowding among men of 20-24 years and women of 15-19 years, who develop high-risk sexual behaviors (Kapinga & Lugalla, 2003). Other studies done to female commercial-sex workers have revealed that 16.1% of them were regularly accessing and using condoms (Mbita et al., 2020). This was backed up by the increased awareness that condoms prevent HIV infections (Adu-Oppong et al., 2007; Exavery et al., 2012a). Similarly, 35% of adolescents (15-19 years) in Mpwapwa district and 39% of adolescents (15-19 years) in Mbeya rural district (Tanzania) accepted to be supplied with and used condoms. All that was achieved because condoms were freely distributed and the concerned knew the exact places where they would access them (Exavery et al., 2012b).

Amidst all such facts, most of the discussed studies have much identified the statistical trends of condom supply and usage, the groups of people been supplied and using condoms, together with reasons toward such usage of condoms. Apart from those, most have not discussed and outlined how condoms are being supplied, specific locations that condoms may be accessed, together with necessary occasions that enhances condom usage. Likewise, most of the discussed studies were conducted to adolescents who seem to develop high sexual-risk behaviors (who are in secondary school age) and female commercial-sex workers, leaving a group of university students, who also need protective tools (condoms) because they engage in sexual maladaptive behaviors like prostitution (Gbagbo, 2021; Mugane, 2022). Therefore, this study sought to examine and assess

the effectiveness of condoms supply with its usage among university students, especially during semester sessions. Iringa region was a study area under the following specific objectives:

1. To examine the accessibility and sufficiency of condoms among university students; and
2. To assess the effective use of condoms among university students.

Methodology

Research Approach

This study employed Quantitative research approach because the researcher planned to address the topic with a proof of statistical description of each result. For such a reason, the approach became effective through the use instruments like questionnaires and semi-structured interviews, which assisted the researcher to quantify his findings. Likewise, it became effective through the use of probability sampling so as to obtain respondents, who provided the quantified data.

Research Design

Survey research design was employed during the study. It assisted the researcher to keenly sample and select respondents (university students) from scattered residences in Iringa. Likewise, it assisted the researcher to identify and employ the possible instruments like questionnaires, which offered him appropriate intended results. For those cases, the design finally was helpful in gathering outstanding data/information that assisted the study to reach its conclusions (Mathers, Fox, & Hunn 2009; Avedian 2014).

Area of the Study

Iringa region was the area that accommodated the study. This area is located in the southern highlands of Tanzania, being elevated about 900m to 2,300m above the sea level (FinScope Tanzania 2017). The selection of this area was based on the fact that it consists of university students, who were the ones to be studied. Likewise, it was considered by the researcher because it is often subjected under HIV/AIDS prevention campaigns and programs that emphasizes on condom usage.

Population and Sample Size

The population that participated during the study was obtained through stratified random sampling. It consisted of 164 university students, who were obtained after the researcher had defined his population, and divided it basing on matriculation status (the intake course and year of study). For such cases, the researcher managed to recruit them immediately after asking their consent, so as to fetch their experiences and opinions regarding condoms distribution and accessibility within their respective university campuses.

Instruments and Tools

Questionnaires were used as instruments and tools for data collection during the study. They were put in five scale ranging from strongly disagree to strongly agree, so as to interrogate the respondents about the topic and obtain authentic data. The other sections needed respondents to share their opinions, experiences and expectations regarding the topic under study. For such cases, they were physically distributed in order to effect data collection without wastage of time.

Data Collection and Analysis

The obtained data were collected through provision, filling in, returning and receiving back of questionnaires that were physically distributed during surveys. And they were quantitatively analyzed by the help of SPSS IBM Version 20., describing the frequencies, percentages, mean scores and standard deviations (SD) of each result.

Validity and Reliability

In this study, content validity was determined through tracing back/reviewing the existing studies of the same topic under study, so as to justify the accuracy and adequacy of the results. Likewise, the results tested reliable after data triangulation was employed and cutoff point of 0.7 was set under Cronbach's alpha scale.

Ethical Considerations

During the study the researcher adhered to professional ethical issues like informing the respondents of what was to take place in order to win their consents, obtaining necessary permits from required information providers, giving respondents freedom of participating and withdrawing from study as per their willingness, preserving the anonymity of the respondents through namelessness approach, together with citing all borrowed concepts through means of APA Style of referencing.

Presentation of Results

This section presents the obtained results within three tables. Table 1, presents the demographic information of the respondents, showing their frequencies and percentages. Table 2 and 3 presents the results basing on the objectives of the study that sought to examine and assess the supply and use of condoms among university students. With such regards, the obtained data were analyzed using descriptive statistics, showing their mean scores and standard deviations. The interpretation of the results as described in Mean scores is: 1.00-1.49=Strongly Disagree, 1.50-2.49=Disagree, 2.50-3.49=Not Always, 3.50-4.49=Agree, and 4.50-5.00=Strongly Agree.

Table1
 Demographic Information of Respondents

Item	Description	Frequency	Percentage (%)
Gender	Male	98	59.8
	Female	66	40.2
Year of Study	First Year	28	17.1
	Second Year	76	46.3
	Third Year	60	36.6
Matriculation	Certificate	12	7.3
	Diploma	58	35.4
	Bachelor	90	54.9
	PGD	01	0.6
	Masters	03	1.8
Total		164	100

With reference to Table 1, the demographics of respondents are into three categories, as indicated in frequencies and percentages. The description indicates that male university students (N=98; 59.8%) were willing to participate in the study compared to female university students (N=66; 40.2%). Relatively, second year's (N=76; 46.3%) and third year's (N=60; 36.6%) were highly favored to participate in the study compared to first year's (N=28; 17.1%) due to the fact that, they are mostly subjected to sexual relationships compared to the fresh year students. Furthermore, the description shows students taking Diplomas (N=58; 35.4%) and Bachelors (N=90; 54.9%) were highly recruited in the study compared to those taking Certificates (N=12; 7.3%), PGD (N=01; 0.6%) and Masters (N=03; 1.8%). That implies Diploma and Bachelor students are still not in committed relationships (Marriages/courtships) compared to those in PGD and Masters, thus being subjected to condom use for their health benefits. Hence, due to such cases, there were about 164 students who participated in the study as shown in Table 1.

Table 2
 The accessibility and sufficiency of condoms among University students

S/N	Item in Questionnaire	Mean Score	St. Deviation	Interpretation
1.	My University provides condoms for free	2.3537	1.10072	Disagree
2.	They are also available in hostels	2.1890	1.01262	Disagree
3.	I am free to access condoms anytime	2.3780	.90859	Disagree
4.	I do find condoms whenever accessing them	2.1341	.81040	Disagree
5.	I am free to take packets that I want	2.7256	.98034	Not Always
6.	Its boxes are put on entrances/corridoes	2.5793	1.09648	Not Always
Overall		2.3933	.98485	Disagreed

The results in Table 2 are concerned of the first specific objective of this study. The results justify that most of universities show less (if not no) concern on provision of condoms to their students during semester sessions (Mean=2.3537; SD=1.10072). Even on those places that are often accessed by students (like entrances or corridors), condom boxes and packets are not usually placed for students (Mean=2.5793; SD=1.09648). Regarding those residing in hostels have as well revealed that their universities have not put condom boxes and condom packets for them (Mean=2.1890; SD=1.01262). For those whose universities have tried to put condom boxes and packets (at campus) are not free to access them anytime due to the fact that, there are hours that day-students are not allowed to pass through the gates unless permission was granted (Mean=2.3780; SD=.90859). And others have always found empty condom boxes (or with few condom packets) whenever gone for them (Mean=2.1341; SD=.81040), thus failing to take enough condom packets that would satisfy their use

(Mean=2.7256; SD=.98034). Therefore, due those presented facts, it is evident that most of universities are less concerned of supplying condoms to their students, resulting into inaccessibility and insufficiencies whenever needed (Average Mean=2.3933; SD= .98485).

Table 3
The effective use of condoms among University students

S/N	Item in Questionnaire	Mean Score	St. Deviation	Interpretation
1.	I use condoms when not gone for HIV test	4.3780	1.00478	Agree
2.	I use condoms when sexing with ex-lovers	1.7622	.83529	Disagree
3.	I use if my lover has been away for so long	1.8780	.95789	Disagree
4.	I use condoms to prevent pregnancy	3.9512	1.19202	Agree
5.	I sex by condoms in/near menstrual days	1.6220	.94823	Disagree
6.	I often use condoms without busting	4.1524	.84791	Agree
Overall		2.6870	.96435	Not Always

The results in Table 3 are concerned of the second specific objective of this study. The results justify that the use of condoms is effective to HIV negative students, who usually get convinced to sex with those whom they have not gone for HIV test (Mean=4.3780; SD=1.00478). That implies they are sexually alert that unsafe sex (sexing before gone for HIV test or without using condom) usually results into HIV/AIDS infection, and by all means they make sure they sex without busting them (Mean=4.1524; SD= .84791). For those who are in committed sexual relationships are evidently not using condoms when sexing with their lovers who have been away for so long (Mean=1.8780; SD= .95789). Others do sex with their ex-lovers without using condoms regardless of not gone for HIV retesting (Mean=1.7622; SD= .83529). On similar regards, it is evident that there are a few of university students who sex by using condoms on the days near/during menstruation periods (Mean=1.6220; SD= .94823). All those imply that students do value their sexual feelings and emotions without considering their vulnerability. Interestingly, most of students use condoms to prevent themselves from pregnancies, due to the fact that they are still dependants and unable to assist themselves and offspring (Mean=3.9512; SD=1.19202). Therefore, with such regards, it is evident that the use of condoms among university students is inappropriate, due to the fact that it is not often manifested on vulnerable occasions that deteriorates their health (Average Mean=2.6870; SD= .96435).

Discussion of Results

Regarding the first specific objective of this study, it is evident that most of the universities are less concerned of supplying condoms to their students during semester sessions. That was also recognized by Butler et al. (2014) after assessing the distribution and accessibility of condoms among university students in USA. The results stipulated that condom supply was more less to private universities (faith-based institutions) compared to public universities (non-faith-based institutions) regardless of their students being exposed to high risk of attaining STIs. It was as well noted that the ratio of distributed condom packets was in equivalent to the ratio of university students, thus not satisfying their need. Similarly, it is noted that universities do not bother to put condom boxes in their hostels, entrance points and corridors despite having the necessity of controlling the severity of STIs (Kirby & Brown, 1996). All those might be due their intension of controlling sexual activities and maintaining the standards of their premises.

For the universities that have tried to supply condom packets, it is evident that their students do not get enough condom packets that would satisfy their use due to the fact that, most of the condom boxes are often found empty or having few condoms. That might be due to unavailability of condom distribution policy/programmes that would enforce universities to procure and put enough condom dispensers within their campuses (Charania et al., 2011; De Rosa et al., 2012). On similar regards, it is as well noted that most of universities have restricted night movements along major entrances and gates for safety reasons, thus limiting the nearby students coming from leisure centers (night clubs & bars) to access university condom boxes whenever convinced to sex with commercial-sex workers (Sandøy et al., 2012; Sakeah, 2017). Therefore, due to all such facts, it is obvious that condom supply is insufficient regardless of having uncountable university students wanting to access them.

Regarding the second objective of this study, it is evident that university students are aware that condom use minimizes the risk of contaminating HIV/AIDS and other STIs, but still they fail to manifest it whenever exposed to vulnerable occasions that deteriorates their health (Beksinska et al., 2012; Chandran et al., 2012; Muchiri, Odimegwu & De Wet, 2017). Several studies have demonstrated that there are occasions that have promoted students to use condoms, while others not been considered for the use. From the report of Exavery et al. (2012), it is proven that students living without HIV/AIDS do negotiate on the use of condoms whenever

convinced to sex with those whom they have not gone for HIV test, so as to health-wise avoid bruises that would smoothen HIV infection (Black et al., 2011). Its outcome has made those fearing to acquire HIV infection to properly use condoms without busting them. Hence, even those who have always failed to access enough condom boxes that are available in their respective universities have optionally purchased them or taken them from nearby hospitals (Ajayi, Omonaiye & Nwogwugwu, 2022).

On other risky occasions, it is evident that condom use among university students is not always manifested due to the fact that, students do value their sexual feelings and emotions without considering their vulnerability (Haffejee, Koorbanally & Corona, 2018). The proof of it is to those who sex (without going for HIV retest) with their lovers who have been away for so long; it is to those who dare to have condom less sex with their ex-lovers without considering that they might be HIV positive; and it is to those who think they can't enjoy when sexing by using condoms (Pitpitan et al., 2012). On similar regards, it is evident that there are few university students who negotiate on and use condoms when approaching to or during the days of menstrual bleeding, so as to not contaminate with their lovers' menstrual blood. Studies like of Hensel et al. (2016) have reported it to be as one of the dangerous sexual experiences that is manifested when students fail to control their sexual desires and arousals, while not considering the risk of acquiring STIs and other blood borne viruses. Therefore, with all such regards, it is obvious that there is less effective use of condoms among university students due to the fact that, most of them do not use condoms during risky occasions that would make them attain STIs and other incurable viral infections from HPV or HIV/AIDS.

Conclusion

Based on the findings, the study concludes that most of universities in Iringa show less concern in providing free condoms to their students during semester sessions. Such a disregard has often made students to access condoms outside their campuses, while sometimes failing to get enough packets that would satisfy their use. For those whose universities have tried to put condom boxes have often found empty condom boxes (or sometimes without condom packets) and be restricted to access them when it gets night. Upon using condoms, it is discovered that most of students are in need of using condoms but due to their inaccessibility and insufficiency, most have risked themselves and practiced unsafe sex with those whom have not gone for HIV test. Others have only valued their sexual feelings and emotions without considering their vulnerability, to the extent of not using condoms when convinced to sex with either their ex-lovers or current partners who have been away for so long; while the rest have used them in order to prevent pregnancy or blood contamination when sexing near to/during menstrual days. Then due to all such issues, it is obvious that condom supply and usage among university students is insufficient and less effective when compared to the need and vulnerable occasions that students are exposed to. Hence, the study recommends the following for the betterment and prosperity of university students who need to be provided with condoms:

- Both public and private universities should empower their respective students' organizations/governments, so that they may set quarterly/annual budgets of putting condom boxes and ensure their adequacy. This is because it is part and parcel of students' welfare that should be under their control;
- Both public and private universities should educate and train their students regarding safe sex that may include the use of condoms;
- Students who are in committed sexual relationships should use condoms or not do sex with their lovers who have been away for so long before going for HIV retest;
- The government through higher learning education authorities should set and enforce policies regarding condom supply and use across all universities in the country for the minimization of future losses; and
- More studies should be conducted in order to determine the sufficiency of condoms to be supplied to average students per semester.

Acknowledgement

The author gives thanks to the Almighty God in Heaven for enabling him to accomplish writing this piece of manuscript. He also conveys his thanks and appreciations to all university students who participated during the study, together with other significant friends who offered him several inputs and insights.

Conflict of Interest

The author declares that there is no any conflict of interest.

References

- [1]. Adu-Oppong, A., Grimes, R., Ross, M. W., Risser, J., & Kessie, G. (2007). Social and behavioral determinants of consistent condom use among female commercial sex workers in Ghana. *AIDS Education and Prevention*, 19(2), 160–72.
- [2]. Ajayi, A. I., Omonaiye, O., & Nwogwugwu, C. (2022). Barriers and facilitators of consistent condom use among adolescents and young adults in South Africa: A cross-sectional survey. Research square, 1-22. <https://doi.org/10.21203/rs.3.rs-1485959/v1>
- [3]. Beksinska, M. E., Smit, J. A., & Mantell, J. E. (2012). Progress and challenges to male and female condom use in South Africa. *Sexual Health*, 9(1), 51–58.
- [4]. Black, D. S., Sun, P., Rohrbach, L. A., & Sussman, S. (2011). Decision-making style and gender moderation of the self-efficacy–condom use link among adolescents and young adults: informing targeted STI/HIV prevention programs. *Archives of pediatrics & adolescent medicine*, 165(4), 320-325.
- [5]. Brandt, A. (1985). No Magic Bullet: A Social History of Venereal Disease in the United States since 1880. New York: Oxford University Press.
- [6]. Brandt, A. M. (1988). “AIDS: From Social History to Health Policy,” in E. Fee and D. M. Fox, eds., *AIDS: The Burdens of History*. Berkeley, CA: University of California Press.
- [7]. Butler, S. M., Procopio, M., Ragan, K., & Funke, B. (2014). Assessment of University Condom Distribution Programs: Results of a National Study. *Electronic Journal of Human Sexuality*, 17, 1-19
- [8]. Carey K. et al. (2011). Community norms for HIV risk behaviors among men in a South African township. *Journal of Behavioral Medicine*, 34(1), 32–40. Doi: 10.1007/s10865-010-9284-6
- [9]. Centers for Disease Control and Prevention (2021). Condom Fact Sheet In Brief. Retrieved on June 28, 2022 from <https://www.cdc.gov/condomeffectiveness/docs/condomfactsheetinbrief.pdf>
- [10]. Chandran, T. M., Berkvens, D., Chikobvu, P., Nöstlinger, C., Colebunders, R., Williams, B. G., & Speybroeck, N. (2012). Predictors of condom use and refusal among the population of Free State province in South Africa. *BMC public health*, 12, 1-13.
- [11]. Charania, M. R., Crepaz, N., Guenther-Gray, C., Henny, K., Liau, A., Willis, L. A., & Lyles, C. M. (2011). Efficacy of structural-level condom distribution interventions: a meta-analysis of US and international studies, 1998–2007. *AIDS and Behavior*, 15, 1283-1297.
- [12]. Chevallier, E. (1993). *The Condom*. London, UK: Penguin Books.
- [13]. Cisek, C & Khomani, F. (2018). Condom Distribution and Reporting Assessment: Strengthening Linkages at National, District, Facility, and Community Levels in Malawi. Washington, DC: Palladium, Health Policy Plus.
- [14]. D’Ortenzio, E., Matheron, S & Yazdanpanah, Y. (2016) “Evidence of Sexual Transmission of Zika Virus,” *New England Journal of Medicine*, 374(22), 2195-2198.
- [15]. De Rosa, C. J., Jeffries, R. A., Afifi, A. A., Cumberland, W. G., Chung, E. Q., Kerndt, P. R., ... & Dittus, P. J. (2012). Improving the implementation of a condom availability program in urban high schools. *Journal of Adolescent Health*, 51(6), 572-579.
- [16]. Exavery, A., Kanté, A. M., Jackson, E., et al. (2012a). Role of condom negotiation on condom use among women of reproductive age in three districts in Tanzania. *BMC Public Health*, 12(1), 1097. <https://doi.org/10.1186/1471-2458-12-1097>.
- [17]. Exavery, A., Kanté, A. M., Jackson, E., Noronha, J., Sikustahili, G., Tani, K., et al. (2012). Role of condom negotiation on condom use among women of reproductive age in three districts in Tanzania. *BMC Public Health*, 12(1), 1097.
- [18]. Exavery, A., Mubyazi, G.M., Rugemalila, J., et al. (2012b). Acceptability of condom promotion and distribution among 10–19 year-old adolescents in Mpwapwa and Mbeya rural districts, Tanzania. *BMC Public Health* 12, 569. <https://doi.org/10.1186/1471-2458-12-569>
- [19]. Fee, E. (1988). “Sin Versus Science: Venereal Disease in Twentieth-Century Baltimore,” in E. Fee and D. M. Fox, eds., *AIDS: The Burdens of History*. Berkeley, CA: University of California Press.
- [20]. Gbagbo & Gbagbo (2021) Prostitution among University Students: A Case Study of Four Public Universities in Ghana. *Research Square: University of Education Winneba*, 1, 1-22. DOI: <https://doi.org/10.21203/rs.3.rs-75495/v1>
- [21]. Global HIV Prevention Working Group (2003). Access to HIV Prevention: Closing the Gap. Retrieved from <https://www.hivpolicy.org/biogs> on June 25, 2022.
- [22]. Government of Malawi. (2017). Qualification of Health Commodities in Malawi. Lilongwe: Ministry of Health
- [23]. Grosso, A. L., Lei, E. L., Ketende, S. C., et al. (2015). Correlates of condom use among female sex workers in The Gambia: results of a cross-sectional survey. *PeerJ*, 3, e1076. <https://doi.org/10.7717/peerj.1076>.

- [24]. Haffejee, F., Koorbanally, D., & Corona, R. (2018). Condom use among South African university students in the province of KwaZulu-Natal. *Sexuality & Culture*, 22, 1279-1289.
- [25]. Hensel, D. J., Tanner, A. E., Sherrow, A., & Fortenberry, J. D. (2016). A longitudinal daily diary analysis of condom use during bleeding-associated vaginal sex among adolescent females. *Sexually transmitted infections*, 92(5), 337-339.
- [26]. Hill SL, Russell K, Hennessey M (2016). Transmission of Zika virus through sexual contact with travelers to areas of ongoing transmission—continental United States. *The Morbidity and Mortality Weekly Report*, 65, 215-216
- [27]. Hlimes N. (1963). Medical History of Contraception. New York: Gamut Press, Inc. Juarez F & Castro MT (2006). Safe sex versus safe love? Relationship context and condom use among male adolescents in the favelas of Recife, Brazil. *Archives of Sexual Behavior*, 35:25–55
- [28]. Kapinga, S. H., & Lugalla, J. L. P. (2003). Male Condom Use in Tanzania: Results from a National Survey. *East African Medical Journal*, 80(4), 181-190.
- [29]. Kayembe, P. K., Mapatano, M. A., Busangu, A. F., et al. (2008). Determinants of consistent condom use among female commercial sex workers in the Democratic Republic of Congo: implications for interventions. *Sexually Transmitted Infections*, 84(3), 202–6. <https://doi.org/10.1136/sti.2007.028324>
- [30]. Kirby, D. B. & Brown, N. L. (1996). Condom availability programs in U.S. schools. *Family planning perspectives*, 28(5), 196–202.
- [31]. Mbita, G., Mwanamsangu, A., Plotkin, M., Casalini, C., Shao, A., Lija, G., Boyee, D., Ramadhan, A., Makyayo, N., Mlange, R., Bandio, R., Christofeld, M., & Komba, A. (2020). Consistent Condom Use and Dual Protection Among Female Sex Workers: Surveillance Findings from a Large-Scale, Community-Based Combination HIV Prevention Program in Tanzania. *AIDS and Behavior*, 24, 802–811. <https://doi.org/10.1007/s10461-019-02642-1>
- [32]. McCarthy, M. (2016). Zika virus was transmitted by sexual contact in Texas, health officials report. *The British Medical Journal*, 352, 720-725
- [33]. Misovich SJ, Fisher JD, Fisher WA (1997). Close relationships and elevated HIV risk behavior: evidence and possible underlying psychological processes. *Review of General Psychology*, 1(1):72–107.
- [34]. Moran, J. (2000). Teaching Sex. Cambridge, MA: Harvard University Press.
- [35]. Muchiri, E., Odimegwu, C., & De Wet, N. (2017). HIV risk perception and consistency in condom use among adolescents and young adults in urban Cape Town, South Africa: a cumulative risk analysis. *Southern African Journal of Infectious Diseases*, 32(3), 105-110.
- [36]. Mugane, J. J. (2022). Factors Influencing Female University Students to Engage in Prostitution. *Uniqbu Journal of Social Sciences*, 3(3), 1-10.
- [37]. Munguti K, Grosskurth H, Newell J, et al. (1997). Patterns of sexual behaviour in a rural population in northwestern Tanzania. *Social Science & Medicine*, 44:1553-1561.
- [38]. Noar SM & Edgar T. (2008). The role of partner communication in safer sexual behavior: a theoretical and empirical review. In: Edgar T, Noar SM, Freimuth VS, editors. *Communication perspectives on HIV/AIDS for the 21st century*. New York: Lawrence Erlbaum Associates/Taylor & Francis Group.
- [39]. Rachakulla, H. K., Kodavalla, V., Rajkumar, H., et al. (2011). Condom use and prevalence of syphilis and HIV among female sex workers in Andhra Pradesh, India—following a large-scale HIV prevention intervention. *BMC Public Health*, 11(6): S1. <https://doi.org/10.1186/1471-2458-11-S6-S1>.
- [40]. Rwanda Ministry of Health. (2006). Rwanda National Policy on Condoms. on May 9, 2023 Retrieved from <https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/111044/138306/F1105472825/RWA-111044.pdf>
- [41]. Sakeah, J. K. (2017). Determinants of condom use intentions among university students in Ghana. A Thesis Submitted to the School of Graduate Studies of the University of Lethbridge in Partial Fulfillment of the Requirements for the Degree of Master of Science in Health Sciences Canada: University of Lethbridge.
- [42]. Sandøy, I. F., Blystad, A., Shayo, E. H., Makundi, E., Michelo, C., Zulu, J., & Byskov, J. (2012). Condom availability in high risk places and condom use: a study at district level in Kenya, Tanzania and Zambia. *BMC public health*, 12, 1-12.
- [43]. UNAIDS (2009). AIDS epidemic update. Retrieved from https://data.unaids.org/pub/report/2009/jc1700_epi_update_2009_en.pdf on June 25, 2022
- [44]. UNAIDS (2016). Condoms: The prevention of HIV, other sexually transmitted infections and unintended pregnancies. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS).