Vicarious Experience as a Predictor of Self-efficacy in Condom Use among Adolescents in Tanzania: Reflections from Media, Peers and Adults

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ABSTRACT

Inadequate condom use among adolescents is a health and behavioural concern across countries. Adolescents are largely vulnerable to sexually transmitted diseases and early pregnancies. However, little attention has been paid to studying objectively and scientifically the factors that are associated with condom use self-efficacy among adolescents. This study presents results on the influence of vicarious experiences on condom use self-efficacy among adolescents in Tanzania. The study was conducted through a quantitative approach using a sample of 552 respondents from two districts in Mpanda and Njombe regions in Tanzania. Data were collected through questionnaires and analysed using independent t-test and multiple regression analysis. The results from regression analysis indicated that media and peers significantly predicted adolescents' condom use self-efficacy. Adults were not a statistically significant predictor of condom use self-efficacy. The model further showed that media was a strongest predictor (β = .263, p value <.001), followed by peers ((β = .250, p value <.001). Thus, adolescents' judgments about their perceived ability to use condoms are generally influenced by the observation and imitation of their peers, and the more they watch and listen to radio and television advertisements about condom use. The study recommends that health behaviour change programmes such as condom use targeting adolescents should encourage the use of vicarious experiences such as peer educators' programmes and TV/radio ads which could assist strengthen condom use self-efficacy, and it is practically effective in preventing HIV/AIDS and early pregnancies, and these programmes should be differently packaged for boys and girls.

Keywords: *Vicarious Experiences, Self-efficacy Condom Use, Media, Peers, Adults*

INTRODUCTION

Condom use among adolescents is a global concern as they are a vulnerable group with regard to sexually transmitted diseases and early pregnancies (World Health Organization (WHO), 2014). The adolescents are expected to use condoms because condoms to adolescents have proved to produce positive health outcomes (Shariati et al., 2014). Among other sexual and reproductive health services offered to adolescents, condom use is now recognized within the international arena as an effective and essential strategy for HIV/AIDS prevention and early pregnancies (Folayan & Ezeanolue, 2016; Mugisha et al., 2011). In addition, World Health Organization has identified inadequate access to condoms among adolescents as a contributing factor to AIDS-related adolescent deaths, most of which occur in sub-Saharan Africa (WHO, 2019). Studies among the African counties have also shown that even when adolescents are aware of HIV/AIDS, the majority do not use condoms as was expected (Dirar et al., 2013; Fikadie et al., 2014; Mugisha et al., 2011; Ntsepe et al., 2014; Peltzer et al., 2013). A study by (WHO, 2014) has shown that condom use helps adolescents to reduce their risk of contracting HIV/AIDS and getting pregnancies. However, the available literature from Ferrand et al. (2010) and United Nations Population Fund, (2015) indicate that many adolescents in Sub-Saharan Africa still underutilise condoms.

The World Health Organization estimates that every year, approximately 16 million girls aged 15-19 years and one million under 15 years give birth, with the majority coming from low and middle-income countries encounter unplanned early pregnancies (WHO, 2014). Recent data has also indicated that young men and women aged 15–24 represent almost 50% of all newly acquired STIs worldwide (International Planned Parenthood Federation, 2020). Moreover, the 2018 data estimated that the adolescent birth rate globally was 44 births per 1,000 girls aged 15–19 years, with the highest rates of 115 births per 1,000 in West and Central Africa (UNICEF, 2020). In regard to HIV/AIDS, it was estimated that 2.1 million adolescents were living with HIV/AIDS in Africa in 2012 among them approximately two-thirds of all new infections were girls from Sub-Saharan Africa (UNICEF, 2013). The aforementioned statistics indicate that the problem of HIV/AIDS, early and unplanned pregnancy in Africa is a matter of serious concern. Apparently, the underutilisation of

condoms exposed adolescents to unwanted pregnancies, and STIs, including HIV/AIDS (Urassa et al., 2018).
In Tanzania, studies by Exavery et al. (2011), Jeckoniah (2018), Mrema (2015) and Sanga et al. (2015) also report underutilization of condoms among adolescents, whereas less than one-third of them reported using a condom at their first sexual intercourse. This implies that despite the high vulnerability among adolescents to HIV/AIDS infection, and pregnancies condom use is significantly lower including at the time of sexual debut. A report from the Ministry of Health and Social Welfare (2014) also revealed that among adolescents 10–19 years found among other things that more than 60% of those who reported having had multiple sexual partners in the past year did not use a condom. Similarly, TDHS-MIS (2015-2016) indicates that condom use is low as 37% in adolescent girls and 35% in adolescent boys between the ages of 15-19. This evidence is supported by the studies conducted by Jeckoniah (2018) and Mrema (2015), who also reported that a small number of adolescent populations have access to condom, amounting to about 40% of the country's total adolescent population.

Notably, self-efficacy condom use can be defined as a person's confidence in his/her ability to purchase condoms, negotiate and use condoms during sexual intercourse (Asante & Doku, 2010). Additionally, literature has revealed that self-efficacy condom use is an important determinant of condom use and intention to use condoms (Closson et al., 2018; Kwok et al., 2010). Specifically, it is established that adolescents who have a high sense of self-efficacy in condom use are likely to use condoms, while those who have low condom use self-efficacy are less likely to use condoms (Kwok et al. 2010). Literature has also revealed the differences in the prevalence of condom use behaviour between boys and girls (Singh et al., 2000). This implies that understanding sex differences is vital for developing appropriate sexual and reproductive health programmes that promote condom use among adolescents. A study by Mehra et al. (2014) revealed the association between low condom self-efficacy among girls who were found to be at a higher risk of inconsistent condom use.

Studies have also revealed that increasing adolescents' condom self-efficacy promotes condom use and leads to low pregnancy rates, Sexual Transmission Infections (STIs), and HIV/AIDS risk reduction (Coffman et al. 2011 & Free et al. 2011).This suggests that increasing adolescents'

self-efficacy on condom use remains an important suggestion for improving condom use among adolescents. Bandura (1997, p. 37) define self-efficacy as an individual's personal belief in his or her capability to perform a particular behaviour. Bandura adds that self-efficacy is concerned not with the number of skills, knowledge, attitudes or resources that people have but with what they believe they can do with what they have under various circumstances. Bandura's theory of self-efficacy is grounded on the following premises: first, individuals are not only reactive to external influences but are also proactive and able to self-regulate. In other words, individuals become both products and producers of their environments. The self-efficacy theory provides a framework for understanding, predicting, and changing human behaviour. Secondly, the key argument regarding the role of self-efficacy beliefs in human behaviour is that "*peoples' level of motivation, affective states and action are based on what they believe than what is objectively true* (Bandura 1997, p. 2)*"*. In the context of adolescents, the belief in condom use can often be better predicted by the beliefs they hold about their capabilities to use a condom than what they are actually capable to accomplish. Thus, self-efficacy helps determine what adolescents will do with their knowledge and skills about condom use. The theory of self-efficacy helps to link what the notion of self-efficacy entails concerning condom use as part of sexual and reproductive health services and why adolescents' condom use is low even when they have similar knowledge and skills.

Based on the self-efficacy theory, self-efficacy of an individual can be determined in four main sources which are mastery experience, vicarious experiences, verbal persuasion and physiological and emotional states. Thus, in the concept of vicarious experience as sources of self-efficacy, Bandura contends that individuals develop their self-efficacy beliefs through observational learning. This source of self-efficacy is weaker than mastery experience in developing self-efficacy beliefs, but when individuals are not sure about their abilities or when they have limited prior experience, they become more strong, sensitive and important to vicarious experiences. Bandura (1977) further posits that people tend to imitate those who appear mostly like them, referring to them as social role models, including parents, peers, and TV/ads. The more a person observes another similar person behaving in a certain way, the more likely they will repeat that behaviour (Bandura, 1986, 1997).

Studies have also shown that vicarious experience is one of the strongest predictors of one's self-efficacy on condom use (Abigail et al., 2013; Asare & Heights, 2015; Fikadie et al., 2014; Olumide & Ojengbede, 2016). For example, a study conducted in the United States of America by Asare and Heights (2015) found that a vicarious experience was a significant predictor of the participants' intentions to use condoms (*p* value=.001). In the same vein, a study conducted in rural South Africa by Abigail et al. (2013) found that boys' perceptions of male peer behaviour were associated with condom use self-efficacy (r=.480, *p* value= 0.01). Likewise, Olumide and Ojengbede (2016) in Nigeria found that television programmes related to condom use had a strong association on adolescents' condom use. This indicates that through television ads as an observational learning tool, adolescents often sought information on the television programmes related to condom use and were motivated to imitate the behaviour. However, the findings of these studies contradict with the studies conducted in Asia, and Nigeria by (Babalola et al., 2008; Habibov & Zainiddinov, 2017). For example the study conducted in Asia by Habibov and Zainiddinov, (2017) on effect of TV and radio ads on condom use found no significant relationship on condom use among adolescents(*p* value= .089). This results are in line with the study done in Nigeria by Babalola et al., (2008) on the assessment of the effectiveness of peers, adults and television and radio programs on condom use in Nigeria which found no relationship between observational learning and condom use (*p* value= .072). The implication is that, while vicarious experiences have a significant effect on adolescents' condom use in one context, it may not be the case in a different context. The data are also controversial, and there are no consistent results about the association between vicarious experiences and adolescents' self-efficacy in condom use.

Overall, the foregoing review pinpoints three limitations about the influence of adolescents' vicarious experiences condom use self-efficacy that warrant further investigations. First, most of the studies on adolescents' condom use that have been conducted in Tanzania and other parts of the world mainly focused on socio-cultural and contextual factors towards condom use among adolescents. Second, studies on self-efficacy have been conducted in Tanzania but mostly focusing on the relationship between students' self-efficacy and academic achievement, career choice, sports and physical activities (Amani, 2018; Mkongo, 2006; Hofman & Kilimo, 2014; Raphael & Mtebe, 2017). Third, the studies conducted in

Tanzania on self-efficacy sources and condom use among adolescents is limited by scope, context and inconsistency in findings. Given these limitations, there is a need for an empirical study to be conducted in Tanzania to inform about the influence of vicarious experiences as source of self-efficacy on adolescents' self-efficacy condom use. Therefore, this study aims to examine the influence of vicarious experiences on condom use self-efficacy among adolescents in Tanzania. Specific objectives of the study were to: determine variation of age and sex on adolescents' condom use and examine significance influence of vicarious experiences on self-efficacy condom use among adolescents.

MATERIALS AND METHODS

The study was conducted in Katavi and Njombe regions. The selection of the two regions was based on the prevalence rates of teenage pregnancy and HIV/AIDS compared to other regions in the country based on the data given by the Ministry of Health, Community Development, Gender and Children (2017) and TACAIDS (2018). Katavi region had the highest prevalence rate of teenage pregnancy in the country, with 45.1% of teenage girls aged 15-19 compared to the overall prevalence rate of adolescents' pregnancies of 27% in the country, followed by Tabora (42.5%), Morogoro (38.6%), Dodoma (38.5%), Mara (37.5%), Mbeya (37.4%) and Shinyanga (33.5%). On the other hand, the data also indicate that the Njombe region had the highest HIV/AIDS prevalence (14.8%) in Tanzania among adolescents aged 14-24, followed by Iringa (11.3%), Mbeya (9.3%), Mwanza (7.2%) and Pwani (5.5%) (TACAIDS, 2018). Specifically, the study was conducted in Njombe and Mpanda districts. The researchers purposively selected the districts because of the following reasons; firstly, the districts were among the districts with the highest teens' pregnancy and HIV/AIDS prevalence rate in Tanzania Ministry of Health, Community Development, Gender and Children (2017) and TACAIDS (2018). Secondly, districts had secondary schools that implement programs on HIV/AIDS at schools with trained teachers teaching sexual and reproductive health education in schools (Basic Education Statistics in Tanzania (BEST), 2020).

The study employed the quantitative research approach. The approach was chosen because it provides scientific grounded results derived from the rigorous application of theory testing through examining the influence of vicarious experiences on condom use self-efficacy among adolescent students. A total of 11 secondary schools were selected in a sequence of

four main steps. First, the researcher requested and obtained the list of all secondary schools from the District Education office in each of the two districts. Second, from the list of schools the researcher with the assistance of District Education Officers identified all schools that provided education on sexual and reproductive health and with trained teachers who were teaching sexual and reproductive health education. Third, the obtained lists of all schools in each district were stratified based on ownership (Private and Public) and gender composition of the students (single-sex or co-education). These selection criteria for schools were used based on the insights obtained from the literature review (Masinde & Chege, 2017). Specifically, the reviewed literature established that students' experiences, maturity and perception on condom use differed based on their sex and class level or level of education. Fourth, after having the list of those schools, the researchers wrote names of schools on pieces of paper, put them in in an empty box, then, shook the box. Initially, the researchers randomly picked 6 schools' papers from the box to obtain names of schools from Mpanda and from Njombe, respectively. Thus, a total of 12 schools were sampled in both districts to participate in the research. However, one head of school in Mpanda district declined his school to take part in the research because the students were taking part in inter-examination. Therefore, eventually a total of 11 schools (5 schools in Mpanda and 6 schools in Njombe) participated in the study.

Selection of students involved the researchers meeting with each head of school of the participating schools and explained about the purpose of the research, the targeted classes and how students would participate in the study. Then, the researchers and head of school discussed the options that the researchers had planned for recruiting students to participate in the study by filling out the questionnaires. Four classes, namely, Forms III, IV, V, and VI in each school were included in this study. The reason for opting to the four classes include the fact that, given the age entry of 6 years and 13 years for completion of primary education, thus, it was presumed that students in Form III at age 15 and above were the ones who would be sexually active. This was consistent to what the literature reports about sexual debut among adolescents (Masinde & Chege, 2017; Mathews et al., 2016). Existing studies also revealed that adolescents begin engaging in sexual intercourse between 15 to18 years of age (Masinde & Chege, 2017). Thus, it was considered that involved students attending Forms III, IV, V, and VI with age between 15 and 21 years would enable the researcher to include student respondents who were

sexually active. Hence, they were assumed to possess reasonably sufficient information about condom use. Also Forms III, IV, V, and VI students were selected partly because their maturity as compared to Form I and II which puts them in a better position to fill in the self-report questionnaire.

Stratified and simple random sampling techniques were used to select secondary school adolescent students from Form III to VI, each in a separate class. In these techniques**,** each individual in the target population was given an equal and independent chance of being selected (Kumar, 2011)**.** Therefore, before conducting simple random sampling, the researchers employed stratified sampling to get demographic characteristics based on the information needed in the study. The stratification process was based on sex and class levels. Therefore, the stratified sampling technique facilitated the selection of students based on sex (boys and girls) and class levels (Form III, IV, V, and VI). Then, from each stratum, the required number of participants was randomly selected. The random selection was achieved by assigning letters on special cards which were written YES and NO. To select the respondents, the researchers took the cards, put them in an empty box, and then shook the boxes. Then the researchers gave the boxes to the students and asked each student to pick the cards at random as per the sample size required for both boys and girl's students in each class. Those students who picked the cards written YES were selected for the study.

The information on vicarious experiences was collected using a questionnaire adapted from Music Performance Self-Efficacy Scale (MPSES) developed by Zelenak (2010). The items for vicarious experiences were developed to reflect Bandura's (1986) sources of self-efficacy. Coding and data entry were done as qn1, qn2 qn3 qn4, qn5, to qn6. During analysis, the items were transformed into two levels, high and low, to simplify interpretation and discussion of the results (Field, 2014). The minimum scale score was 3 and 12 was the maximum scale score. All the respondents who scored 3-6 were considered to have high level and those who scored 7-12 were considered to have low level vicarious experiences in condom use. The information on adolescents' condom use self-efficacy was collected using the Condom Use Self-Efficacy Scale (CUSES), adapted from Brafford and Beck (1991). This scale is a tool for measuring an individual's degree of belief that they can successfully engage in particular health behaviour, and many researchers

have widely used it (Brafford & Beck, 1991; Brien et al., 1994; Langer et al., 1994; Mahoney et al., 1995). The respondents were prompted to indicate their confidence in their capability in the utilisation of condoms in four Likert scale levels; *1= strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree.* Data were coded and entered as qn1, qn2 qn3 to qn12. During data analysis, the total scale score was calculated after reversing the items 12 which was positively worded. A total of 30 students from private schools and 30 from public schools took part in the pilot study. The data obtained from the pilot study were first entered into the SPSS Version 25. Thereafter, the confirmatory factor (CFA) analysis was conducted using SPSS to determine whether or not the data generated from vicarious experiences as sources of self-efficacy was consistent with the Bandura's proposed model. In addition, the methods and techniques used in the current paper have been used in previous analyses of sources of self-efficacy scales (Lent, Lopez, & Bieschke, 1991; Matsui, Matsui, & Ohnishi, 1990; Usher & Pajares, 2006, 2009; Zelenak, 2010) to provide evidence on the validity of the scale.

During the analysis of CFA, four indexes, namely the Root Mean Square Error of Approximation (RMSEA), Root Mean Square Residuals (SRMR), Goodness of Fit Index (GFI), and Comparative Fit Index (CFI), were presented as fit statistics. The Root Mean Squared Error of Approximation (RMSEA) values below .10 and the Root Mean Square Residuals (SRMR) values below .05 are accepted as regular fit values. Moreover, the Goodness of Fit Index (GFI) greater than .90 and Comparative Fit Index (CFI) higher than .90 indicate a good fit to the data (Hu & Bentler, 1999). The CFA results from the pilot study revealed a fit index as follows; RMSEA =.07, SRMR =.08, GFI= .94 and CFI=.79. The results from the fit indexes model fit for vicarious experience were unsatisfactory. Considering the CFA results during the pilot study, two items from vicarious experiences that did not well contribute to the total variability had very low loading factors were ignored. A second CFA was conducted on the remaining items.

The second CFA revealed a good model fit for all the remaining items, as follows RMSEA =.07, SRMR =.04, GFI= .81 and CFI=.07. Therefore, in the current paper, these problematic items were not included in the analysis. The numbers of the items were 4 for vicarious experience. Generally, the second confirmatory factor analysis was found to measure a unique form of sources of self-efficacy that demonstrated modest

relationships with vicarious experiences in condom use. Additionally, the validity of the results was ensured through the clear match of the research objectives, hypothesis, theory and problem of inquiry. The respondents involved in the study were randomly selected to ensure their representativeness. Each component of the questionnaires' internal and overall reliabilities was tested using the Cronbach's Alpa Coefficient. The items in all scales used in this study met the international internal consistency value of .07 for social science studies (Creswell & Creswell, 2018). The overall Cronbach alpha for vicarious experiences was α =.08. Similarly, the Cronbach alpha for the condom use self-efficacy scale was .073. This implies that the items in all scales were correlated, measuring the intended construct. The quantitative raw data was systematically analysed using the Statistical Package for Social Sciences (SPSS) version 25. Furthermore, independent t-test was used to test the variation of adolescents' condom use based on age and sex and liner regression analysis was used as a statistical test to determine significant effect vicarious experiences on adolescents' condom use self-efficacy. Furthermore, confirmatory factor analyses were conducted to reduce the number of vicarious experiences variables that had low loading factors to the convenient level.

For ethical purposes, the researchers adhered to the procedures by requesting letters of permission from the University Vice Chancellor's office. The letters were thereafter directed to Njombe and Katavi Administrative Secretary (RAS) and then to District Administrative Secretary (DAS). The DAS introduced the researchers to the Municipal Executive Directors who forwarded the permission letter to the heads of secondary schools allowing that the study be conducted in the area. During the study, all respondents, school heads, students and academic masters were informed about the purpose of the study, its objectives, the manner in which it would be conducted and its significance. Throughout the study period, the respondents were guaranteed that the information they provided would be kept confidential and only to be used for the purpose of the study. To make this a reality, the ethical issues were taken into consideration between the researchers and the respondents. To ensure confidentiality, the respondents were not required to indicate their names or any other identities on the research instruments.

RESULTS

Background characteristics of the respondents

The background information of the respondents included four characteristics. The characteristics were about type of school, class levels, age, and sex. The demographic characteristics of the respondents are summarized in Tables 1.

Table 1: Background characteristics of respondents by type of school, sex, class level and age (N=552)

Variables		Frequency	Percentage
Age group	15-16	152	27.5
	17-21	400	72.5
	Form III	213	38.6
Class Level	Form IV	219	39.7
	Form V	58	10.5
	Form VI	62	11.2
Sex	Boys	279	50.5
	Girls	273	49.5
	Private	158	28.6
Type of school	Public	394	71.4
	Total	552	100.0

The results from Table 1 indicate that a total of 552 questionnaires were returned from the respondents. Majority respondents were students from public secondary schools, 394 (71.4%). There were almost an equal proportion of boys and girls students who participated. More of the respondents were ordinary secondary school cohort compared to advanced secondary school cohort and there was almost equal proportion between classes in each of the two secondary level cohorts. Form IV 219 (39.7%), whereby 141 (25.1%) were from the public, and 78 (14.1%) from private schools, followed by Form III students 212(38.4%) whereby 133 (24.1%) were from public schools and 80 (14.5%) from private schools. Likewise, based on age group majority were 17-21 years 400 (72.5%) followed by 15-16 years 152 (27.5%).

Levels of adolescents' vicarious experiences in condom use

The prevalence of vicarious experiences in condom use among adolescents in secondary school was something the researchers felt was crucial to determine. As summarised in Figure 1, the findings revealed varying levels of vicarious experiences in condom use among adolescents.

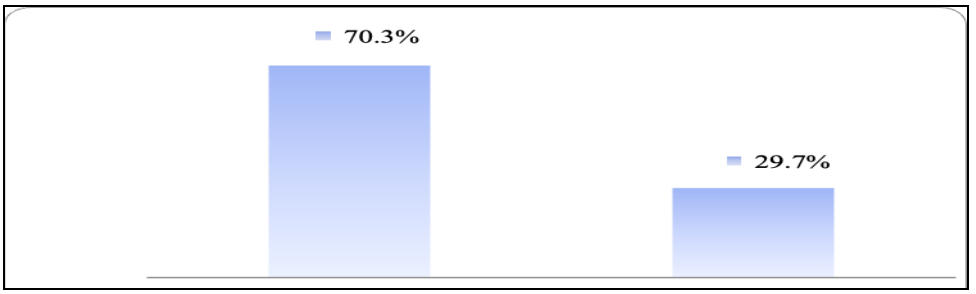

Figure 1. Levels of adolescents vicarious experiences in condoms

The results in Figure 1 reveal that the majority of adolescents (70.3%) had high levels of vicarious experiences in condom use and less than a quarter of the adolescents reported low level of vicarious experiences in condom use. This suggests that the majority of adolescents in secondary schools have a high level of vicarious experiences.

Variation of adolescents' condom use by age and sex

The first objective of this study was to determine the variation of adolescents' condom use based on their age and sex. The researchers assumed that there could be differences in the extent of condom use based on their attributes. These attributes are presented in Table 2.

Table 2: Respondents' variation on condom use based on sex, Age (N=552)

Variables	Vicarious experience	Category	Mean	SD	Test values	P values
Sex	Condom Use	Boys	2.16	.07	-3.299	.001
		Girls	2.36	.69		
Age		Middle	2.31	.72	1.959	.022
		late	2.19	.66		

As it is shown in Table 2, the results from an independent t-test which was performed to compare condom use scores for boys and girls reveal that the means scores for girls (M=2.36, SD= .69) was statistically significantly higher than mean score of the boys (M=2.16, SD= .07; t=3.299, df=550, *p-value*<.001). The magnitude of the differences in the means was very small (eta squared = .006). This suggests that through

vicarious experience girls are more likely to use condoms as they learn and imitate from peers, adults and TV/radio ads than their counterpart. Similarly, the independent test was performed to assess whether there were statistically significant differences in condom use between middle and late adolescents. The results revealed that, the condom use mean scores of middle adolescents was significantly higher (M=2.31, SD= .72; t=1.959, df=550, *p-value* .022) than the mean score of late adolescents (M=2.19, SD= .66). This indicates that middle adolescents (15-16 years) were more likely to use condom by observing, learning and imitating from peers, adults, TV/radio ads than late adolescents (17-21 years). The results also imply that adolescents' imitation and observation learning from peers and adults on condom use is more likely to go down as their age goes up.

Vicarious experiences as a predictors of condom use self-efficacy among adolescents

The second objective was to determine the influence vicarious experiences on adolescents' condom use self-efficacy among secondary school adolescent students. Before performing regression analyses to examine the influence of Media, Peers and adults on adolescents' self-efficacy on condom use. The researcher though it was important to check on the multicollinearity of the independent variables. The assumption was testing the predictors or independent variables which should not be too highly correlated. The results on multicollinearity is summarised in Table 3.

Table 3: Results of multicollinearity

		Media	Peers	Adults	Condom use
Media	Pearson Correlation	1	.589**	.227**	.413**
	Sig. (2-tailed)		.000	.000	.000
Peers	Pearson Correlation	.589**	1	.201**	.407**
	Sig. (2-tailed)	.000		.000	.000
Adults	Pearson Correlation	.227**	.201**	1	.121**
	Sig. (2-tailed)	.000	.000		.005
Condom use	Pearson Correlation	.413**	.407**	.121**	1
	Sig. (2-tailed)	.000	.000	.005	

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

The results from Table 3 reveal that there is a moderate positive relationship between media and peers (r=.589, p<.001) media and

condom use (r=413, p<.001). There was also a weak positive relationship between media and adults (r=227, p<.001). Furthermore, there was a moderate positive relationship between peers and condom use (r=.407, p<.001) and weak positive relationship between peers and adults (r=.201, p<.001). Moreover, adult was positively related with condom use (r=.121, p<.001). Here the absolute value of the Pearson correlation coefficient is less than 0.8; it shows collinearity is very unlikely to exist (Pallant, 2016). Thus, the results allowed the researcher to proceed with further analyses. Therefore, to examine the influence of the media, adults, and peers on condom use self-efficacy among adolescents. A multiple regression analysis was carried out to investigate whether media peers, and adults could significantly predict adolescents' condom use self-efficacy. The respective hypothesis stated that vicarious experiences do not influence self-efficacy in condom use among adolescents. The results are summarised in Table 4.

Table 4: Multiple regression analysis results on the influence of media, adults and peers on condom use self-efficacy

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.215	.113		10.795	.000
	Media	.413	.074	.263	5.540	.000
	Adult	.022	.079	.011	.275	.783
	Peers	.370	.070	.250	5.313	.000

a. Dependent Variable: Condom use

The regression model was significant (R2 =.21, F (548) =49.021, p value =<.001). Further, the regression results indicated that media and peers statistically significantly predicted adolescent' condom use self-efficacy. Adults was not a statistically significant predictor of adolescents' condom use self-efficacy. The model further showed that media was a strongest predictor (β = .263, *p* value <.001), followed by peers ((β = .250, *p* value <.001). This suggests that adolescent who watch and/or listen condom use adverts on TV or radio as well as observing condom use among their peers will be confident to use condom whenever they want to have sex. That is, as adolescents are exposed to media advertisement about condom use, as more they observe peers buying condoms, their self-efficacy in condom use increases as well. Therefore, the null hypothesis which

hypothesised that vicarious experiences do not influence self-efficacy in condom use among adolescents was rejected.

DISCUSSION

The results from multiple regression analysis indicated the media and peers predicted adolescents' condom use self-efficacy by 21% of the variance (R2 =.21, F (548) =49.021, p value =<.001). It was found that media significantly predicted condom use self-efficacy (β = .263, *p* value <.001) as did peers (β = .275, *p* value=<.01). These results imply media and peers influences the levels adolescents' self-efficacy in condom use. This can be attributed to the view that as more adolescents interact and get exposed to peer educators and TV/radio programmes related to condom use, the more their self-efficacy in condom use increases. This is to say, educative messages from TV and radio ads about condom use and persuasive models, including peers, increase adolescents' self-efficacy in condom use.

The results of this study provide a theoretical link between the literature and Bandura's (1986) social cognitive theory. He contends that vicarious experiences are compelling when observers see similarities in some attributes and then assume that the model's performance is suggestive of their own capability. The more a person observes another similar person behaving a certain way, the more likely they will repeat that behaviour (Bandura, 1986, 1997). Through vicarious experience, adolescents persuade themselves by comparing their ability and failures and drawing conclusions about their capability. Thus, through observing how peers and watching TV and radio ads, other adolescents develop a sense of self-efficacy and believe that they could also use condoms in the future. This study produced results which corroborate with some basic facts documented from previous studies, which found a significant influence of vicarious experiences on adolescents' self-efficacy condom use. These results seem to be consistent with the study conducted in America by Asare and Heights (2015) on the application of the theory of planned behaviour in explaining condom use behaviour among college students. The study found that vicarious experience influenced students' self-efficacy in using condoms (*p* value =.001). The results of the current study and those of Asare and Heights (2015) suggest that adolescents' vicarious experiences through peers help to increase adolescents' beliefs about their perceived ability to buy and use condoms. The more

adolescents obtain the chance to observe others purchasing condoms, the more they can develop the belief and confidence to use them.

In the same vein, a study conducted by Abigail et al. (2013) on peer influences on adolescent HIV risk in rural South Africa found a strong and positive relationship between vicarious experiences and self-efficacy in condom use (r =.072, *p* value =.001). The study revealed that as more adolescents observe their peers buying condoms and talking about the importance of condoms, the more their condom use self-efficacy increases. The results of the present study are similar to the results of Abigail et al. (2013) in terms of revealing positive relationship between the variables but differ in terms of the strength of the contribution of vicarious experiences in adolescents' condom use self-efficacy. The current study found that the model predicted adolescents' condom use for 21% whereas Abigail et al. (2013) found a strong relationship in the same areas. The variation can be explained by the difference in some cultural disparities between Tanzania and South Africa with regard to condoms as part of the SRHS as well as the study population that was involved. For example, the values and norms of adolescents from South Africa on condom use are not the same as those of adolescents from Tanzania. Another possible reason might be the level of awareness, sensitization, and transparency about HIV/AIDS in Tanzania and South Africa. South Africa is ahead in terms of transparency and the political will and commitment on the issue of condom use. In South Africa, for instance, the right to sexual and reproductive health is protected in Article 27 of the national constitution, which states that everyone, including adolescents, has the right to access quality reproductive health services including condom use (Beksinska et al., 2013). These high levels of transparency in South Africa, which are advertised in the media, could be more influential with regard to adolescents' condom use in South Africa than those in Tanzania. Thus, values, norms, level of transparency, and political commitment of adolescents' condom use might affect the results of the current study as compared to Abigail et al. (2013).

The results of the current study are also similar to the results that were found from a study conducted by Babalola et al. (2018) in Northern Nigeria on a communication programme on condom use among young women. The study by Babalola revealed an increase of 3–16 percentage points in the likelihood of condom use due to exposure to condom use through messages from TV and radio ads. These results have two

implications. First, adolescents' vicarious experiences through TV/radio ads and peers significantly contribute to adolescents' self-efficacy on condom use. Second, when adolescents observe others similar to them buying condoms, they judge their own capability to buy condoms. The similarities in results between the current study and Oladeji and Ayanganna (2017) can be explained in terms of the similarities in the study population and cultural contexts between the two studies. For example, both studies were conducted on secondary school students in a similar age group (15-21 years) who might share some overall or general beliefs, perceptions, and attitudes about condom use, that reasonably affect their self-efficacy on condom use in similar ways.

On the other hand, the results of the current study, which indicated a significant influence of vicarious experiences on self-efficacy in condom use among adolescents, differed from other studies that did not reveal a significant influence of the same variables. Guilkey and Hutchinson (2011) in Bangladesh found no influence between vicarious experiences and self-efficacy condom use. The inconsistency of results may be interpreted in three ways. First, the differences in methodological approaches used, the present study was based on an exclusive questionnaire administered to students as a data collection tool, while Guilkey and Hutchinson (2011) used both questionnaires and interviews. Thus, in this study, it is probable that some respondents were intentionally misreported as being dishonest to respond to sensitive issues like a condom, which is culturally prohibited at a young age in the Tanzanian context (Mwakatobe, 2007). Second, the difference in study population between the current study and the study by Guilkey and Hutchinson (2011) can be another reason for explaining the inconsistency in findings between the two studies. The current study involved secondary school students aged 15–21, while the study by Guilkey and Hutchinson (2011) involved only women aged 10–49 years. Therefore, age differences might affect the attitudes, knowledge, and experiences on condom use which might also affect their self-efficacy in condom use. Third, in terms of cultural context, Tanzania is a non-secular country in which the adolescents may have a relatively more freedom to discuss issues of condom use with their peers, watch TV/radio ads about condom use, and thus be more likely to earn and enrich their self-efficacy in condom use through vicarious experience compared to their counterparts living in Bangladesh, a secular country. Studies have established that secular countries, including Bangladesh, have some laws and norms that restrict

adolescents' access to information on condom use through radio or TV ads, or models through peer educators' programmes, or adults (Guilkey & Hutchinson, 2011).

The results of the current study also contradict the results of the study conducted in Kyrgyzstan and Tajikistan by Habibov and Zainiddinov (2017) on the effect of radio family planning messages on the probability of condom use in post-Soviet Central Asia. The study found no significant impact of radio family planning messages on the likelihood of condom use in Kyrgyzstan (β=0.06) and Tajikistan (β=0.08). The possible reasons for such differences in findings can be attributed to different contextual factors and study populations. For example, in Central Asia, messages on the radio about condom use are discouraged due to cultural and religious factors compared to the Tanzania context, where adolescents have access to messages from TV/radio ads about condom use, which could be more likely to increase adolescents' self-efficacy in condom use. Other possible reasons may be due to the nature of respondents; for example, the study by Habibov and Zainiddinov (2017) involved only female participants, while the current study involved both boys and girls.

The study also assessed the difference in condom use among the respondents based on their sex and age. Results revealed a statistically significant difference in respondents' condom use, concerning their gender as girl adolescents it revealed higher mean scores in condom use self-efficacy than with boys' adolescents (M=2.36, SD= .69), t=3.299, df=550, *p-value*<.001). This suggests that girl's adolescent is more likely to use condom consistently than their adolescent boys. Interestingly in these results, while girls' information and knowledge about access to and ability to negotiate condom use might have been limited by socio-cultural and gender norms girls, they appear to use than their counterparts.

The results of this study also concur with the study conducted by Abigail et al. (2013) on gender, peer, and partner influences on adolescent HIV risk in rural South Africa involving 983 adolescents aged 14–17 years. The study revealed that girls' peer behaviour related to condom use was associated with condom use self-efficacy at last sex (OR = 1.79, *p* value = 0.01). The girls who associated with friends who were also using condoms were more likely to use them. This indicates that adolescent girls with friends who use condoms are more likely to use condoms than

girls with friends who do not encourage condom use. Likewise, a study conducted in Tanzania by Exavery et al. (2011) on the role of condom negotiation in condom use among women revealed that self-efficacy in condom use is a significant predictor of actual condom use among women in rural Tanzania (OR = 3.13, 95% CI 2.22-4.41). Similar results were found by Taylorukznacza et al. (2017) on the reasons for inconsistent condom use by rural South African and Kenyan high school students. The results revealed that adolescent girls reported higher condom use when they received greater social support from their peers (*p* value =.005) and had more self-efficacy in condom use than adolescent boys. This indicates that adolescent girls are more likely to raise their condom use self-efficacy when they see other girl models exhibit such behaviour but not after seeing a boy adolescent model do so. In this case, gender is the quality that matters substantially in explaining the assumed similarity. The results are also supported by Bandura, who posits that people tend to imitate those who appear most like them; the more a person observes another similar person behaving a certain way, the more likely they are to repeat that behaviour (Bandura, 1986, 1997).

The results also revealed that, the mean scores of condoms use of middle adolescents were statistically significantly higher than the mean score of late adolescents. This indicates that middle adolescents were more likely to use condoms by observing, learning, and imitating their peers and TV/radio ads than late adolescents on condom use. This result could be explained by the fact that adolescents' condom use experiences are more likely to decrease as they get older, implying that as adolescents get older, their attention and curiosity to learn and imitate condom use behaviour from others decreases. It could also imply that as they get older, they assume they know much more about condom use and thus pay less attention to learning and imitating condom use behaviour from peers, and TV/radio advertisements.

CONCLUSION AND RECOMMENDATIONS

The study showed that vicarious experiences predicted adolescents' self-efficacy condom use. Therefore, adolescents' judgments about their perceived ability to use condoms are generally influenced by the observation and imitation of their peers, and the more they watch and listen to radio and television advertisements about condom use, which is in turn associated with the comparison of themselves to others who have similar characteristics and engage in condom use. When adolescents

watch or listen to condom use and HIV test advertisements on television or radio or when observing how peers buy condoms, they believe that they could also use condom in the future. Thus, adolescents' HIV prevention and reproductive health programmes aiming to promote condom use among adolescents should focus on using peer educators' programmes and condom advertising and promotion programmes through TV and radio ads. In addition, the results of this study are expected to inform policy and programs developers, school teachers, social workers, and counsellors on the role of vicarious experiences on adolescents' condom use. The results provide information on how media, peers and adults influence on adolescents' condom use among adolescent in Tanzanian context. Moreover, this study added to the body of existing knowledge on the condom use in Tanzania, specifically on to what extent vicarious experiences influence adolescents' condom use. Lastly, the results of this served as a basis for further research on sources of self-efficacy and adolescents' condom use by adding information and understanding on how vicarious experiences in the Tanzanian context are associated with adolescents' self-efficacy in condom use.

On the other hand, the results revealed that sexual and reproductive health content and advertisements on television and radio about condom use in the form of vicarious experiences provide more information, which increases adolescents' self-efficacy in condom use. More condom use advertisements on television and radio should be given priority, aimed at improving adolescents' condom use self-efficacy. However, radio and television exposure is measured only by the frequency of watching television and listening to the radio, without any information available about programme content. The study recommends that further research should be conducted to determine the types of television and radio programmes that are particularly persuasive and potential for adolescents in relation to condom use. Also, when designing and advertising programmes aimed at improving reproductive health among adolescents, the programmes should include audio visual content in the form of observational learning instead of banners, brochures, and hand-outs.

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