

Contraceptive Awareness Among Urban Adolescent Girls at Ilemela Municipality Mwanza Region

Suzana Zakaria

Department of Economics and Community Economic Development

The Open University of Tanzania

E-mail: suzanejeremiah@gmail.com

Harrieth Mtae

ORCID: <https://orcid.org/0000-0002-6059-378X>

Department of Economics and Community Economic Development

The Open University of Tanzania

E-mail: harrieth.mtae@out.ac.tz

Received: March 30, 2025 Accepted: May 28, 2025 Published: June 11, 2025

doi:10.5296/ijssr.v13i2.22931 URL: <https://doi.org/10.5296/ijssr.v13i2.22931>

Abstract

This study intends to assess contraceptive awareness among urban sexually active adolescent girls at Ilemela Municipal in Mwanza Region, in Tanzania. The study used a cross-sectional research design to investigate the awareness of contraceptives among urban girls, whereby purposive and convenient sampling techniques were used for the selection of participants. The target population was 175 students randomly selected through simple random sampling techniques. In this study, data were collected using a questionnaire and analyzed using the Statistical Package for Social Science (SPSS).

The results show that 59.7% of respondents were unaware of any contraceptive methods, while only 40.3% reported being familiar with one or more contraceptives. Regression analysis showed that factors like access to information and educational interventions significantly correlate with increased awareness levels ($p < 0.05$). Injection was identified as the most recognized method, known to 52.2% of participants. Despite some awareness, the reliance was moderately high on informal and potentially unreliable sources, such as friends and media, predominantly television (37.7%) and newspapers (26.4%). The study thus

recommends that the government, as the primary stakeholder in the provision of health services in the country, should make sure that it collaborates with various stakeholders in creating awareness on contraceptive use and debunk the view that contraceptive use is contrary to social or religious norms. Targeted educational programs and comprehensive reproductive health education tailored for adolescents could effectively enhance reproductive health knowledge, including contraceptive awareness.

Keywords: contraceptives, awareness, adolescent, contraceptive use

1. Introduction

Adolescent reproductive health remains a critical global health concern particularly in the realm of contraceptive awareness. The World Health Organization (2021) reports that each year, roughly 16 million teenagers aged 15 to 19 and around two million girls under 15 give birth worldwide. Complications related to pregnancy and childbirth are the primary cause of death for this group. Over 90% of these births take place in low- and middle-income countries, and inadequate knowledge to contraceptive contributes significantly to these figures, leading to elevated rates of unplanned pregnancies, unsafe abortions and increased school dropouts (Crooks et al., 2022).

Adolescents have inadequate knowledge of contraception and the majority are informed about emergency contraception and traditional methods like abstinence, lactational amenorrhea, and coitus interruptus. Nevertheless, despite this awareness, a significant number of adolescents do not utilize contraception because of restricted access, misinformation regarding side effects, and negative perceptions influenced by religious, socio-cultural beliefs, as well as the attitudes of healthcare providers towards them (Atchison et al., 2018; Shalon, et al., 2021).

Estimates from 2019 indicate that 57% (18 million) of the 32 million sexually active adolescent girls in developing countries were utilizing modern contraceptives, thus leaving 43% (14 million) with an unfulfilled need for contraception (Sully et al., 2022). In developing countries, 50% of the 21 million pregnancies each year among adolescents aged 15 to 19 are unplanned. Among these unintended pregnancies, a significant majority (77%) occur in adolescent women who have an unmet need for modern contraception, and over half (55%) result in unsafe abortions (Sully et al., 2022).

Most teenagers hear information about reproductive health; however, only around 40% demonstrate a strong knowledge of sexual and reproductive health and have limited knowledge, failing to identify the risk period for pregnancy or the dangerous time for fertilization. They are also unaware of risky sexual behaviors, such as unprotected sex, and had low usage of contraceptives (Fabiola & Tilisho, 2023).

This gap in awareness and utilization is attributed to insufficient policies and ineffective implementation of reproductive health services, which include education and counseling for teenagers on sexuality and safe sexual practices, socio-cultural barriers, limited comprehensive sexual education and inadequate health services delivery tailored to adolescent needs. Furthermore, stigma associated with adolescent contraceptives use discourages many from seeking information and services, exacerbating the risk of early pregnancies and sexually transmitted infections (STIs). Further, only a small number of teenagers obtain information from sources like school teachers, posters or leaflets, and health care providers (Fabiola & Tilisho, 2023).

Sub-Saharan Africa experience among the highest rates of adolescent pregnancies in the world, with an estimated 19.3% of teenage girls giving birth prior to turning 18 (UNFPA, 2021). Limited contraceptive knowledge significantly contributes to these figures, with many

adolescents relying on misinformation or traditional methods that are less effective (Ajah, et al., 2015). Additionally, many African health systems lack adolescent friendly reproductive health services, further impeding access to reliable contraceptive information and methods (Chandra Mouli et al., 2019).

In Tanzania, adolescent fertility remains a significant challenge, The Tanzania Demographic and Health Survey (TDHS, 2022) report that 27% of girls between the ages of 15 and 19 have started having children with many pregnancies being unintended. The report indicates further that, the use of modern contraceptives among this age group remains low at 10%.

However, the Government of Tanzania and various stakeholders have introduced several initiatives to boost the adoption of modern contraceptives among adolescent girls. The Ministry of Health, Community Development, Gender, Elderly, and Children (MoHCDGEC) of the United Nations in Tanzania developed a 5-year Family Planning Implementation Plan for 2018–2022, which sets goals for increasing the use of all family planning methods. This plan aims to enhance the uptake of family planning services and outlines key priority areas along with the necessary financial resources (FP, 2019). Continued efforts by the government and non-governmental organizations (NGOs) are also essential to promote contraceptive awareness through campaigns and schools – based programs have shown promise, yet barriers persist due to societal attitude and inadequate policy implementation among other issues (Ezemwaka et al., 2020; Fabiola & Tiliso, 2023). Moreover, a considerable gap remains in reaching target 3.7 of the Sustainable Development Goals (SDGs). This target underscores the need to ensure universal access to sexual and reproductive healthcare services, including Family Planning, information, and education. Furthermore, it stresses the necessity of incorporating reproductive health into National Strategies and Programs by 2030, aligning with Tanzania’s commitment for the same year.

Mwanza region, one of the fastest growing urban center in Tanzania, exhibits similar trends in adolescent reproductive health. The region adolescent birth rate of 135 per 1,000 girls aged 15–19 years is the highest in the country (TDHS, 2022). In Ilemela municipality, for example, the socio-economic disparities, cultural taboos, and inadequate access to youth friendly reproductive health services could contribute to low contraceptive awareness among adolescent girls (Mgalla & Twa, 2020).

Consequently, the low contraceptive awareness among adolescent girls in urban settings like Ilemela Municipality are profound, and may affect educational achievements, economic opportunities and overall well-being. Thus, this study aimed to establish the relationship between contraceptive awareness, source of contraceptive information, awareness of various family planning topics, and contraceptive use among adolescent girls in Ilemela municipality.

1.1 Objectives

- 1) To assess the level of awareness on contraceptives among adolescent girls at Ilemela Municipal in Mwanza region.
- 2) To establish the relationship between contraceptive awareness, source of contraceptive information, awareness of various family planning topics, and contraceptive use among

adolescent girls at Ilemela Municipal in Mwanza region.

2. Method

This study employed a cross-sectional design to evaluate the adolescent's awareness and experience on using contraceptives. A questionnaire and interview guide aimed at assessing the awareness about sexual and reproductive health status of the respondents, the trends of contraceptive use were used. In this study, the participants were Adolescent girls, health care workers, primary school teachers and secondary school teacher. A sample size of 133 adolescents (44 from Primary schools and 86 from secondary schools) was determined by Slovenes formula (1960). Mwanza Region, as one of the regions with high adolescent birth rates, was purposefully selected, while simple random sampling was used in selecting Mwanza Region, and two wards out of 17 wards of Ilemela urban. In each ward, one-day secondary school and one-day primary school were selected. Additionally, 10 health care workers from two facilities who work in RMNCAH and youth-friendly services clinics and two teachers from selected schools were interviewed. Correlations and Multiple regression analysis were used to test the relationship between variables of interest.

3. Results and Discussions

3.1 Awareness of Contraceptives

Contraceptive awareness among adolescents is crucial for reducing unintended pregnancies and sexually transmitted infections. The research findings show that most respondents are not aware of the contraceptives (59.7%) and the remaining 40.3% of the respondents are not aware of any contraceptive method. The low level of contraceptive methods awareness among respondents could be associated with insufficient reproductive health education among the respondents.

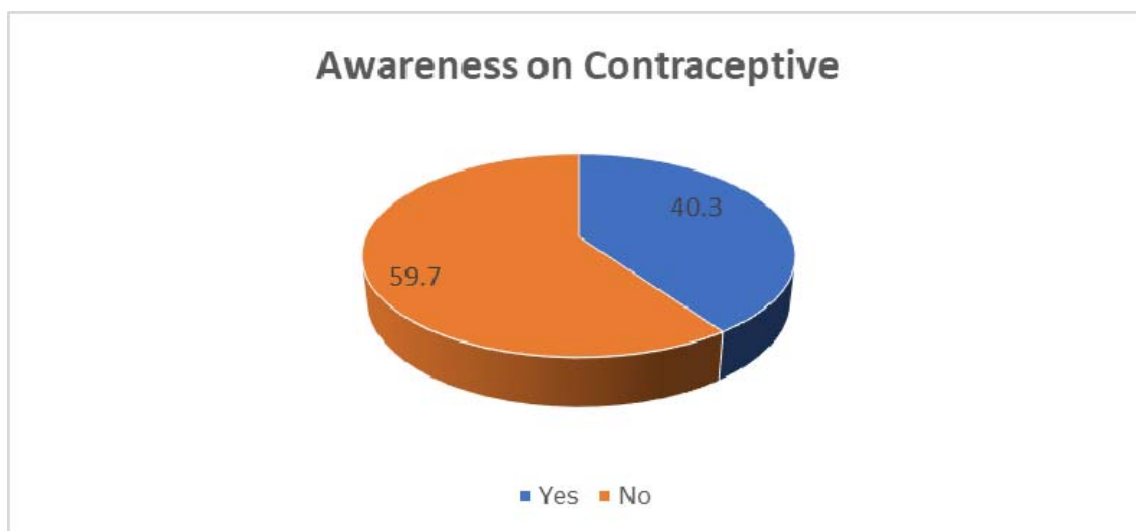


Figure 1. Awareness on Contraceptives (%)

One of the health workers who had opportunity to meet with adolescents for various reasons including offering sexual and reproductive health services, had this to say;

“When talking to adolescents you may sometimes find out that many of them are not well aware of various contraceptive methods, and they feel shy talking about it. Most of them are aware by hearing it being mentioned by a friend or a sister, through social media and TV but they have no room for further discussion in order to get a better understanding.... [Health Care Worker].

3.2 Most Known Contraceptives

Findings in Figure 2, revealed that 52.2% of respondents reported that they knew injection as one of the contraception methods, 18.2% reported to know intrauterine device (IUD), and condoms as one of the contraception methods respectively. The least known contraceptive method was Implants (3.1%) followed by pills (8.2%). These findings confirm the presence of various methods of contraception and this is supported by Dombola, et al. (2021); Chimatiro et al. (2022) and Mardi et al. (2018) who pinpoints that the most effective contraceptives that are implants, intrauterine devices (IUDs), injections, pills, vaginal rings, barrier methods, sterilization, and emergency contraception, however, oral contraception is by far popular method, followed by condoms and vasectomy.

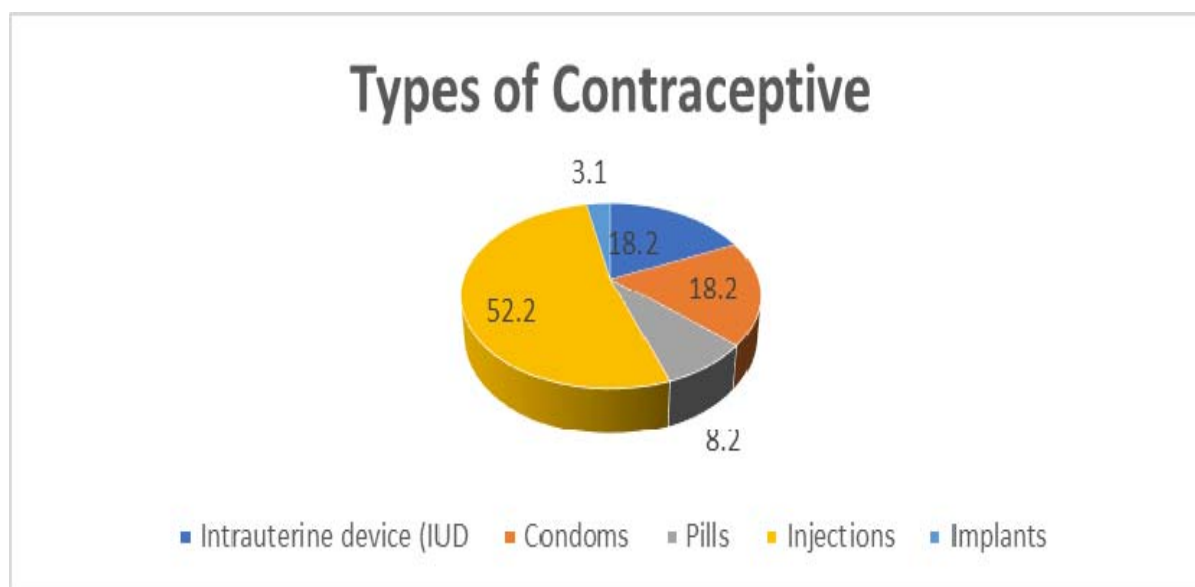


Figure 2. Types of Contraceptives Used (%)

3.3 Source of Information on Contraceptives

Various sources of information on contraceptives were reported by respondents as shown in Fig 3. The most reported source of information was television (37.7%), followed by newspapers (26.4%). The least reported source is social media (7.5%) and Radio (9.4%). Also, the results of this study show that 7.5% of the adolescents have heard about contraceptives through the social media. One of the health care worker supported these findings indicating that some of these adolescents have some information regarding contraceptives and they

obtain this information from different sources including reliable and unreliable ones, as presented below.

“..... I know that contraceptive information and services are fundamental to the health and human rights of individuals and so the adolescents. The prevention of unintended pregnancies helps lower maternal ill health and the number of pregnancy-related deaths. On the side of older adolescent girls, most of them are aware that the consequences of improper use of contraceptives like condoms and pills would result in pregnancy. However, the issue of sexual education is not commonly discussed in households, so most adolescents get information sometimes from unreliable sources.” [Health care worker].

These results show that contraceptive awareness is obtained through various source of information as described above. This observation is supported by Hailemariam et al. (2021) who suggested that the government, health department, and various stakeholders such as NGOs, use different approaches, such as televisions and radio, to communicate about contraceptives and their uses. In the same ways, Mardi et al. (2018), supports that in modern times, social media also have taken an effective part in the provision of reliable information about the importance of contraceptives. Furthermore, the findings obtained were positively supported by Dioubate et al. (2021), who suggested that media have significantly helped raise awareness among adolescent girls about the use of contraception to protect them from unwanted pregnancies, as well sexually transmitted diseases (Chimatiro et al., 2022).

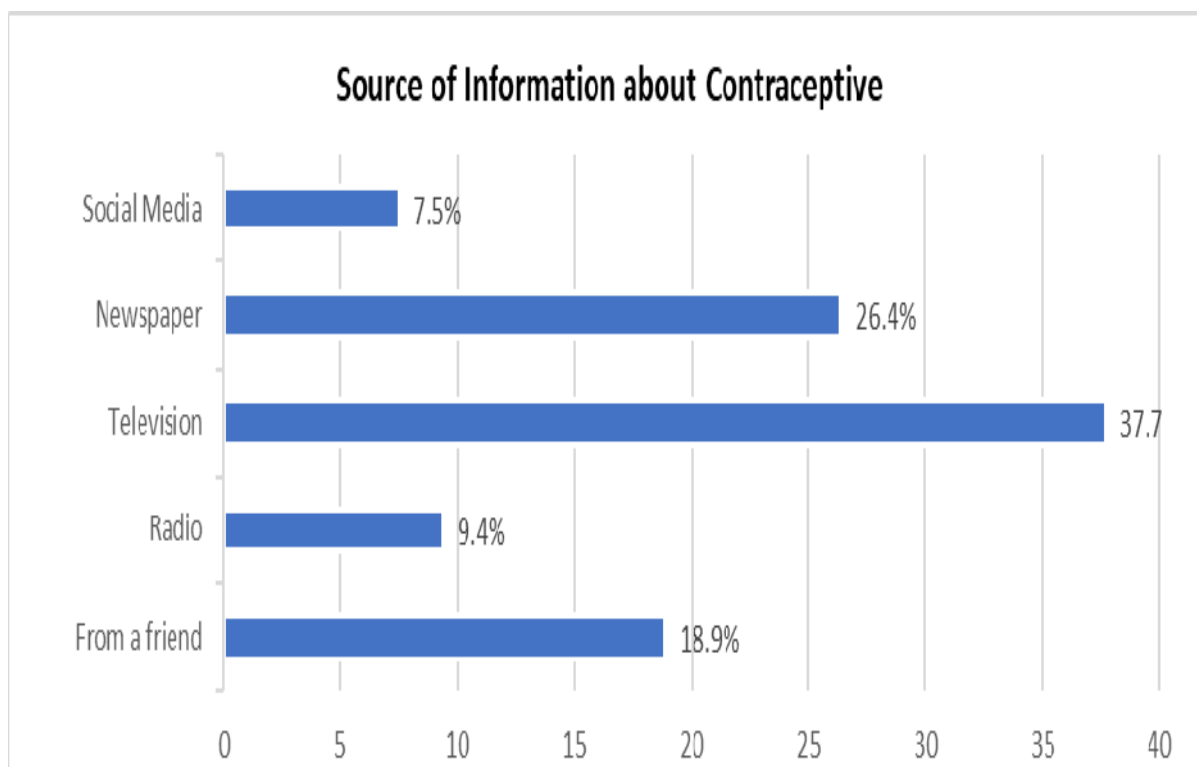


Figure 3. Source of Information about Contraceptive (%)

3.4 Provision of Education on Contraceptive Uses

Educating adolescents on family planning and contraceptive use is of paramount importance for promoting public health, advancing gender equity and fostering socio-economic development. Figure 4 shows that 45% of the respondents had frequently received education on contraception use, and 33% reported rarely receiving contraceptive education on contraceptive use. On the other hand, 22% of the respondents reported that they have rarely received education on contraceptive use. From these findings, it was established that education on contraceptives is given to adolescents, however, the quality and intensity were not established.

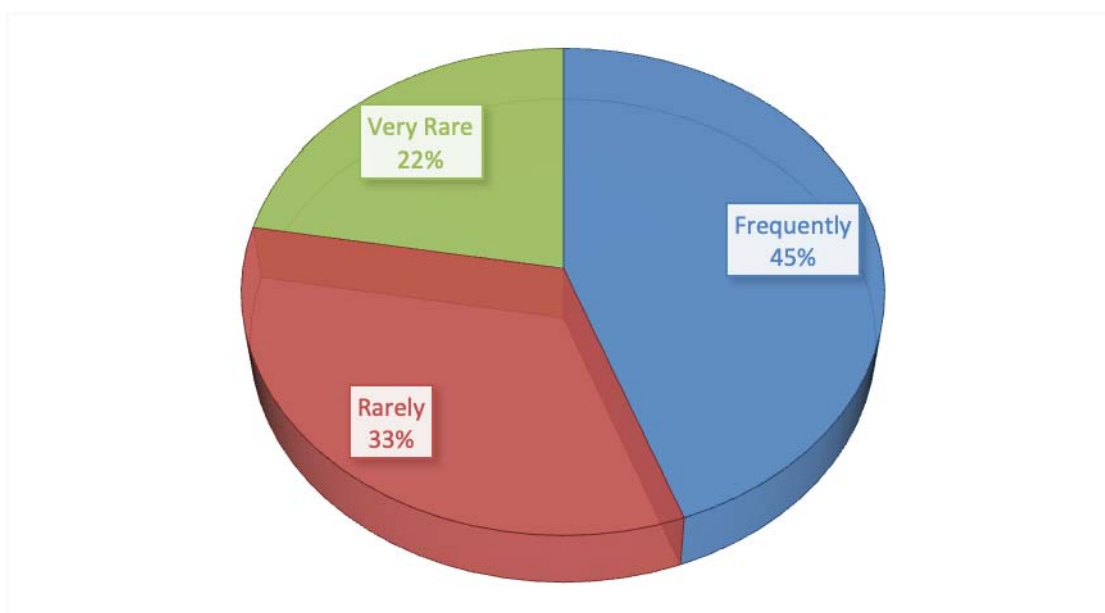


Figure 4. Provision of Education on Contraceptive Uses

Importance of provision of sexual education to adolescents was also emphasized by one of the health workers who offers this education to adolescents who reported that;

“..... I have been attending to girls of the adolescent age in giving sexual education for some time now, I always notice that most of the girls I have encountered are aware of male condoms, and some are aware of planning pills (contraceptive pills) as the most common forms of contraception among adult women. Some of the adolescents (very few) are aware that effective contraception benefits both mothers and children by decreasing morbidity and mortality, improving the social and economic status of women and improving the relationship of the mother with her children...but not adolescents themselves.....” [Health Care Worker].

It has been argued that, awareness about contraceptives among adolescents is provided through education which is regularly provided through various campaigns, provision of regular seminars and adolescent talks in society (Izugbara et al., 2018). Society must receive enough education to make them aware that the use of contraceptives, especially among

adolescent girls, is for health benefits and that society should get rid of the beliefs that modern family planning is bad for the future generation (WHO, 2019). While efforts are made to encourage the use of contraceptives education also is regularly provided to community members to enhance proper use (Kiggundu, 2020).

3.5 Awareness on Various Reproductive Health Topics

Adolescents' awareness on various reproductive health topics related to family planning and contraceptives is very important in making them have informed choices about their bodies and their health. Findings in Figure 4, show that, 39.6% of the respondents reported being aware of regular trainings that are taking place in schools, 36.5% provision of youth seminars on contraceptives, and 17% strengthening family planning services at health facilities. The least known topic was on provision of free family planning services (6.9%). These results are supported by Chimatiro et al. (2022) who recommended strengthening counseling techniques and introducing behavior change communication tactics at the primary level, including messages aimed at teenagers. Therefore, there is a need to implement a novel screening method to early detect pregnant adolescents and those in need of contraception to meet their healthcare requirements. Interventions help nations enhance access to family planning techniques and improve counseling to help women make educated decisions about their options and methods (Dombola et al., 2021). Creating and improving community platforms to help community health professionals gain access to contraceptive methods and identify and refer women for counseling (Mardi et al., 2018).

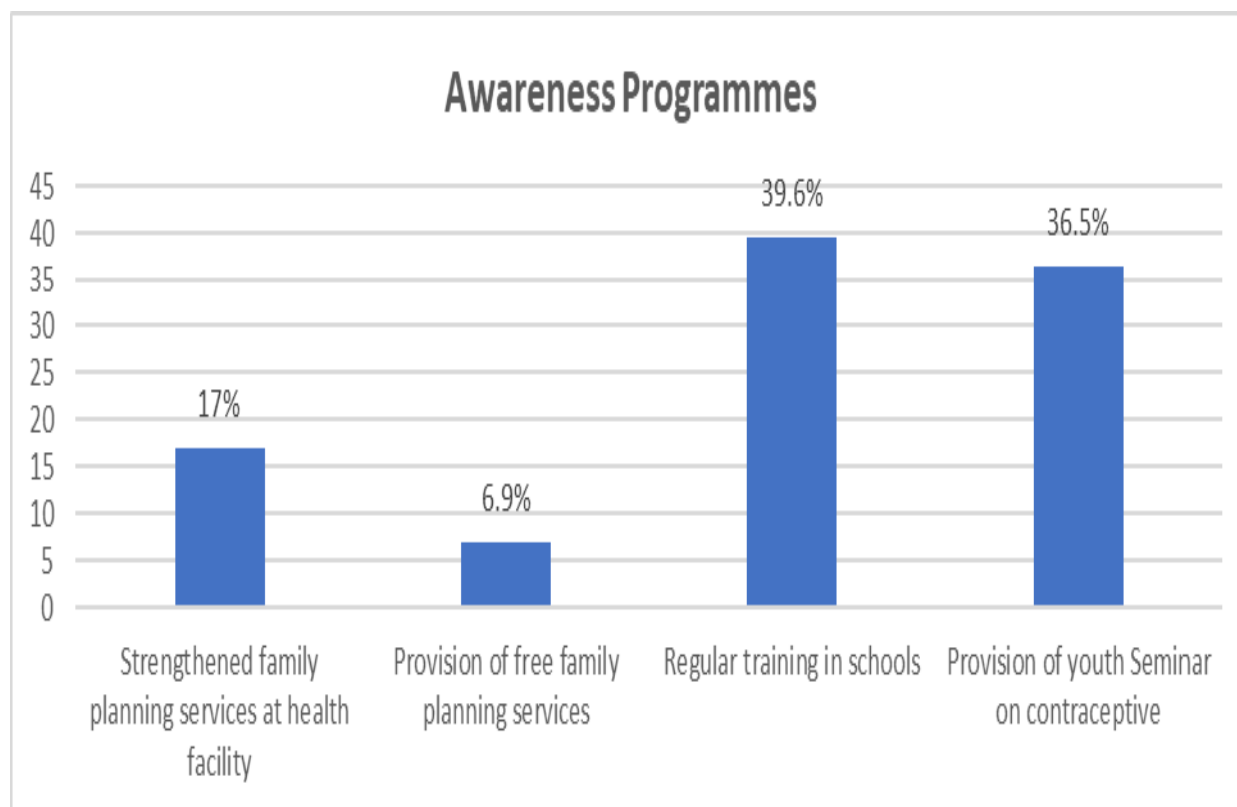


Figure 5. Awareness Topics on Family Planning and Contraceptives (%)

Correlation Analysis

Correlation analysis between contraceptive use and awareness on topics of family planning, contraceptives, contraceptive awareness, and information on contraceptive uses was done as indicated in Table 1. The findings on contraceptive use and contraceptive awareness reveal a positive correlation coefficient (r) of 0.651, which is statistically significant with a p -value of 0.000. This indicates a strong positive correlation, meaning that higher contraceptive awareness is closely linked to increased contraceptive use.

The correlation coefficient for contraceptive use and source of contraceptive information is 0.834, with a p -value of 0.000, indicating that the source of contraceptive information was strongly correlated with contraceptive use. This implies that contraceptive behaviours depend on how individuals obtain information. The correlation coefficient for contraceptive awareness and source of contraceptive information was 0.702, with a p -value of 0.000, showing again a strong positive link. This suggests that the source of information significantly impacts awareness levels. The correlation for awareness of various family planning topics and other variables ranges from 0.521 to 0.612 ($P=0.000$), indicating that greater awareness of family planning (FP) topics is positively related to contraceptive awareness and the source of information. This reinforces the idea that disseminating FP information enhances awareness and influences contraceptive behaviours.

Table 1. Pearson Correlation Analysis

Contraceptive Use	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	159			
Contraceptive awareness	Pearson Correlation	.651**	1		
	Sig. (2-tailed)	.000			
	N	159	159		
Source of Contraceptive Information	Pearson Correlation	.834**	.702**	1	
	Sig. (2-tailed)	.000	.000		
	N	159	159	159	
Awareness of various FP Topics	Pearson Correlation	.612**	.521**	.582**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	159	159	159	159

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

Model Summary

The Correlation Coefficient (R) of 0.851 indicates a strong positive correlation between the model's predicted values and the actual data, implying that as the independent variables increase, the dependent variable also increases. The coefficient of determination (R Square) of 0.724 signifies that approximately 72.4% of the variance in the dependent variable can be

explained by the independent variables in the model, suggesting a good model fit. R Square was adjusted based on the number of predictors to avoid overfitting of the model. The adjusted value (0.719) being close to the R Square indicates that the model maintains its explanatory power when accounting for the number of predictors. Lastly, to reflect the average distance observed values fall from the regression line, the Std. Error was used, and the estimated value of 0.668 indicates a lower standard error and therefore a better fit of the model, as it shows that the predicted values are close to the actual values (Table 2).

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.851 ^a	.724	.719	.668

Note. a. Predictors: (Constant), Awareness programmes, Contraceptive awareness, Information on contraceptive use.

Regression Analysis

The analysis in Table 3 indicates that both contraceptive awareness and information about contraceptive use are significant predictors of the dependent variable (contraceptive use), with the latter being the most influential. The unstandardized coefficient for information on contraceptive use (0.663) shows a strong positive relationship, while contraceptive awareness has an insignificant effect (0.085). Both variables are statistically significant, as evidenced by their p-values (0.004 for contraceptive awareness and 0.000 for information on contraceptive use). These findings suggest that improving awareness and information related to contraceptive options can significantly enhance relevant outcomes.

Table 3. Regression Analysis for Contraceptive Awareness and Contraceptive Use

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.282	.121		2.325	.021
	Contraceptive awareness	.085	.057	.089	1.478	.004
	Information on contraceptive use	.663	.063	.670	10.572	.000
	Awareness on FP programmes	.160	.048	.176	3.322	.001

Note. a. Dependent Variable: Contraceptive Use.

According to Bilinga & Mabula (2014), in their study, they found that 75% of researchers have identified poor knowledge of sexual and reproductive health as one of the causes of teenage pregnancies. Knowledge on sexual and reproductive health for adolescents has been debatable over the years, as some research ascertains that the knowledge will push girls and boys towards sexual behaviours and is against African culture, while some believe that the provision of the knowledge will avoid pregnancy (Kagashe & Honest, 2013). Nyangarika et al. (2020) add that sexual and reproductive health should be incorporated into the curricula.

Atchison et al. (2018) reiterate that the use of contraceptives is crucial since it helps to significantly lower fertility and the proportion of unintended births and maternal fatalities that would otherwise occur without contraception. Although awareness of contraceptives has grown recently, most individuals, especially in rural areas, lack adequate knowledge about contraceptives (Budihastuti et al., 2017). Even though initiatives have been made to increase and encourage the use of contraceptive services, lack of knowledge regarding where family planning services may be acquired and what woman thinks to be reliable sources remains a challenge (Busse et al., 2022). A current action is required to concurrently increase accessibility to adequate contraceptive information (Casey et al., 2020). To effectively connect with potential contraceptive users, it's essential to expand the variety of channels used to disseminate information about contraceptive products and services by incorporating informal channels and media platforms (Chimatiro et al., 2022).

From the results obtained, it can be established that there was a positive and significant relationship between contraceptive awareness and contraceptive use. These results are positively supported by Budihastuti et al. 2017 that most individuals, especially in rural areas, lack adequate knowledge about contraceptives, even though there is an increase in awareness of contraception. Even though initiatives have been made to increase and encourage the use of contraceptive services, lack of knowledge on contraceptives and regarding where family planning services may be acquired and what a woman thinks to be reliable sources is still a challenge (Busse et al. 2022). However, the primary level and uneducated adolescents have limited access to sexual and reproductive health information and services needed to prevent pregnancy compared to higher-level educated females (Kefale et al., 2020)

4. Conclusion

The results of this study highlight a significant gap in contraceptive awareness and reproductive health education among adolescents, with nearly two-thirds of respondents (59.7%) unable to identify contraceptive methods. However, there was a clear correlation between low awareness levels and insufficient reproductive health education. Moreover, the reliance on indirect sources of information, such as television and media (37%) and newspapers (26.4%) rather than structured education programs, exacerbates misconceptions about contraceptives. This situation suggests an urgent need for targeted educational interventions that not only raise awareness of contraceptive methods but also encourage open discussions about reproductive health.

5. Implications of the Study

The findings of this study have several implications for public health policy and educational frameworks. Firstly, they emphasize the critical role of structured reproductive health education in schools, community programs, and healthcare settings, which can significantly enhance adolescents' knowledge and attitudes toward contraceptives. Furthermore, the reliance on media as a primary source of information suggests that public awareness campaigns should be utilized to provide accurate and comprehensive information. Lastly, the low recognition of various effective contraceptive methods indicates a need for more accessible resources and counseling services that encourage adolescents to engage in

discussions about sexual health without stigma or embarrassment.

6. Recommendation

The low awareness of contraceptives among adolescent girls in Ilemela Municipality indicates a need for intervention. The government, as the primary stakeholder in the provision of health services in the country, should make sure that it collaborates with various stakeholders in creating awareness on sexual and reproductive health education, including contraceptive awareness, and debunks the view that contraceptive use is contrary to social or religious norms. Youth-targeted educational programs and comprehensive reproductive health education tailored for adolescents could effectively enhance reproductive health knowledge, including contraceptive awareness.

References

- Ahinkorah, B. O., Obisesan, M. T., Seidu, A. A., & Ajayi, A. I. (2021). Unequal access and use of contraceptives among parenting adolescent girls in sub-Saharan Africa: a cross-sectional analysis of demographic and health surveys. *BMJ Open*, 11(9), e051583. <https://doi.org/10.1136/bmjopen-2021-051583>
- Airewele, E., Alile, O. M., Ozegin, K. O., & Ataman, O. J. (2020). Lithostratigraphic classification of subsurface in a typical sedimentary terrain, southern Nigeria: a case study of Ujemen-Ekpoma. *Nigerian Journal of Science and Environment*, 18(1).
- Ajah, L. O., Onubogu, E. S., Anozie, O. B., Lawani, L. O., Iyoke, C. A., Onwe, E. O., & Ajah, M. I. (2015). Adolescent reproductive health challenges among schoolgirls in southeast Nigeria: role of knowledge of menstrual pattern and contraceptive adherence. *Patient Preference and Adherence*, 1219–1224. <https://doi.org/10.2147/PPA.S89258>
- Atchison, C. J., Mulhern, E., Kapiga, S., Nsanya, M. K., Crawford, E. E., Mussa, M., ... Doyle, A. M. (2018). Evaluating the impact of an intervention to increase uptake of modern contraceptives among adolescent girls (15–19 years) in Nigeria, Ethiopia and Tanzania: The Adolescents 360 quasi-experimental study protocol. *BMJ Open*, 8(5), e021834. <https://doi.org/10.1136/bmjopen-2018-021834>
- Atuhaire, S., Ngendakumana, J., Galadima, A., Adam, A., & Muderhwa, R. B. (2021). Knowledge and attitude towards contraceptive use among adolescents in Africa: a systematic review. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 10(11), 4292–4303. <https://doi.org/10.18203/2320-1770.ijrcog20214349>
- Bandura, A. (1986). *Social foundations of thought and action* (pp. 23–28). Englewood Cliffs, NJ.
- Budiastuti, U. R., & Pamungkasari, E. P. (2017). Determinants of long-term contraceptive method use in madiun, east java: application of social cognitive theory. *Journal of Health Promotion and Behavior*, 2(4), 313–322. <https://doi.org/10.26911/thejhp.2016.02.04.03>
- Busse, C. E., Onyango, D., & Tumlinson, K. (2022). Informal payments for modern family planning methods at public facilities in Tanzania: room for improvement. *Human Resources*

for Health, 20(1), 1–9. <https://doi.org/10.1186/s12960-022-00712-5>

Chimatiro, C. S., Mpachika-Mfipa, F., Tshotetsi, L., & Hajison, P. L. (2022). School-going adolescent girls' preferences and views of family planning services in Phalombe district, Malawi: A descriptive, cross-sectional study. *Plos One*, 17(5), e0267603. <https://doi.org/10.1371/journal.pone.0267603>

Crooks, R., Bedwell, C., & Lavender, T. (2022). Adolescent experiences of pregnancy in low-and middle-income countries: A meta-synthesis of qualitative studies. *BMC Pregnancy Childbirth*, 22, 702 <https://doi.org/10.1186/s12884-022-05022-1>

Dombola, G. M., Manda, W. C., & Chipeta, E. (2021). Factors influencing contraceptive decision making and use among young adolescents in urban Lilongwe, Malawi: a qualitative study. *Reproductive Health*, 18, 1–11. <https://doi.org/10.1186/s12978-021-01259-9>

Engelbert Bain, L., Amu, H., & Enowbeyang Tarkang, E. (2021). Barriers and motivators of contraceptive use among young people in Sub-Saharan Africa: A systematic review of qualitative studies. *PloS One*, 16(6), e0252745. <https://doi.org/10.1371/journal.pone.0252745>

Hailemariam, S., Gutema, L., Agegnehu, W., & Derese, M. (2021). Challenges faced by female out-of-school adolescents in accessing and utilizing sexual and reproductive health service: a qualitative exploratory study in Southwest, Ethiopia. *Journal of Primary Care & Community Health*, 12, 21501327211018936. <https://doi.org/10.1177/21501327211018936>

Hasking, P., & Rose, A. (2016). A preliminary application of social cognitive theory to nonsuicidal self-injury. *Journal of Youth and Adolescence*, 45, 1560–1574. <https://doi.org/10.1007/s10964-016-0449-7>

Japhet, B. (2018). *Is Tanzania's Unmet Need For Contraceptives At Crisis Levels?* PesaCheck. Retrieved from <https://pesacheck.org/is-tanzanias-unmet-need-for-contraceptives-at-crisis-levels>.

Kassa, G. M., Arowojolu, A. O., Odukogbe, A. A., & Yalew, A. W. (2018). Prevalence and determinants of adolescent pregnancy in Africa: a systematic review and meta-analysis. *Reproductive Health*, 15(1), 1–17. <https://doi.org/10.1186/s12978-018-0640-2>

Mardi, A., Ebadi, A., Shahbazi, S. et al. (2018). Factors influencing the use of contraceptives through the lens of teenage women: a qualitative study in Iran. *BMC Public Health*, 18, 202. <https://doi.org/10.1186/s12889-018-5116-3>

Mekonnen, A. G., Odo, D. B., Nigatu, D., Amare, N. S., & Tizazu, M. A. (2022). Determinants of adolescents' contraceptive uptake in Ethiopia: a systematic review of literature. *Contraception and Reproductive Medicine*, 7(1), 16. <https://doi.org/10.1186/s40834-022-00183-y>

Middleton, L., Hall, H., & Raeside, R. (2019). Applications and applicability of Social Cognitive Theory in information science research. *Journal of Librarianship and Information Science*, 51(4), 927–937. <https://doi.org/10.1177/0961000618769985>

MOHCDGEC. (2018). *National Adolescent Health and Development Strategy 2018–2022. April 2018*. Ministry of Health, Community Development, Gender, Elderly and Children. Government of Tanzania. Dar es Salaam. Retrieved from https://tciurbanhealth.org/wpcontent/uploads/2017/12/020518_Adolescent-and-Development-Strategy-Tanzania_vF.pdf

National Family Planning Guidelines and Standards. (2013).

Nkenguye, W., Ismail, H., Urassa, E. P., Yongolo, N. M., Kagoye, S., & Msuya, S. E. (2023). Factors Associated with Modern Contraceptive Use Among Out of School Adolescent Girls in Majengo and Njoro Wards of Moshi Municipality, Tanzania. *The East African Health Research Journal*, 7(1), 32. <https://doi.org/10.24248/eahrj.v7i1.706>

Sully, E. A., Biddlecom, A., Darroch, J. E., Riley, T., Ashford, L. S., Lince-Deroche, N., et al. (2020). *Adding It Up: Investing in Sexual and Reproductive Health* (pp. 1–56). Guttmacher Inst.

WHO. (2021). Adolescent pregnancy. 3, 1–7. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).