

Research Article

Knowledge, Attitude, and Intentions Regarding Modern Contraceptive Use Among Nursing and Midwifery Students at SDA NMTC, Asamang

Richard Mensah* , Ellen Opoku Boamah , Mercy Dankwah ,
Setina Boahemaa Adu , Adwoa Arkoh Boaten , Eunice Korlekie Teye ,
Gifty Manu Gyamfi , Sampson Asiedu 

Nursing and Midwifery Department, Seventh-Day Adventist Nursing and Midwifery Training College, Asamang, Ghana

Abstract

Background: Modern contraceptive remain vital in reducing unintended pregnancies and promoting reproductive health. However, knowledge, attitude and intentions regarding their use vary among young people, particularly students in health training institutions. **Objective:** This study assessed the knowledge, attitudes and intentions regarding modern contraceptive use among nursing and midwifery students at SDA NMTC, Asamang. **Methods:** A descriptive cross-sectional study was conducted among 293 students using a structured questionnaire. Data were analyzed using descriptive statistics and chi-square tests of association with significance set at $p < 0.05$. **Results:** The majority of respondents (69.6%) demonstrated good knowledge of modern contraceptive methods, while only 10.2% exhibited poor knowledge. Most respondents (70.5%) held positive attitudes toward contraceptive use. More than half expressed an intention to use contraceptives in the near future (53.6%) though fewer were willing to commit to consistent use (33.4%). Marital status ($\chi^2 = 6.972$, $p = 0.008$), academic programme ($\chi^2 = 8.260$, $p = 0.004$), and academic level ($\chi^2 = 23.922$, $p < 0.001$) were significantly associated with contraceptive intention, while age was not ($p = 0.184$). **Conclusion:** The study demonstrated generally high knowledge and positive attitudes toward modern contraceptives among respondents, yet intentions for consistent use remain low.

Keywords

Modern Contraceptives, Knowledge, Attitude, Intention, Nursing Students, Midwifery Students, Ghana

1. Introduction

Modern contraceptives are essential for improving sexual and reproductive health by reducing unintended pregnancies, unsafe abortions, and maternal mortality [1]. Globally, family planning is recognized as a cornerstone of Sustainable Development Goal (SDG) 3, which seeks to ensure healthy lives and well-being for all [2]. Despite ongoing global and re-

gional initiatives, contraceptive uptake among young people in many low- and middle-income countries (LMICs), including Ghana, remains suboptimal [3]. National surveys report only a modest contraceptive prevalence rate, with persistent unmet needs contributing significantly to unintended pregnancies and adverse reproductive health outcomes [4].

*Corresponding author: richard.lordmensah@gmail.com (Richard Mensah)

Received: 17 September 2025; **Accepted:** 30 September 2025; **Published:** 27 October 2025



Copyright: © The Author(s), 2025. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

Within this context, nursing and midwifery students constitute a particularly important group. As future healthcare providers, they are expected to acquire not only technical knowledge of contraceptive methods but also the skills to provide accurate counselling, dispel misconceptions, and advocate for evidence-based practices. However, studies from sub-Saharan Africa indicate that while healthcare students are generally aware of available contraceptive methods, their knowledge depth, perceptions, and willingness to recommend them are strongly influenced by cultural norms, religious beliefs, and personal values [5, 6]. Persistent misconceptions such as the belief that hormonal methods cause infertility, weight gain, or long-term health risks remain prevalent and shape students' attitudes toward contraceptive use and counselling [7]. Furthermore, stigma surrounding contraceptive use, particularly among unmarried or adolescent women, continues to undermine uptake and advocacy [8, 9]. These challenges create a gap between theoretical knowledge and practical readiness, which may affect the quality of reproductive health services once these students graduate into clinical practice. Addressing these barriers is crucial for strengthening reproductive health training in nursing and midwifery curricula. By assessing current levels of knowledge, attitudes, and intentions regarding contraceptive use among students, educators and policy-makers can identify gaps and design interventions that foster competence, confidence, and cultural sensitivity. This, in turn, will help prepare future professionals to deliver unbiased, client-centered, and comprehensive family planning services, ultimately contributing to improved maternal and health outcomes in Ghana and beyond.

2. Methods

2.1. Study Settings

The study was conducted at SDA Nursing and Midwifery Training College (NMTC) Asamang, a health training institution in the Sekyere South municipality of Ashanti region, Ghana. The college trains nursing and midwifery students to provide quality healthcare services. It has lecture halls, skills laboratory, a library and a computer laboratory. The institution has a structured academic environment with students at different levels of study. Currently, it's a single sex (female) school.

2.2. Study Design

The type of design for the study was a descriptive cross-sectional survey. A stratified random sampling technique was employed to ensure fair representation across different academic levels (first-year, second-year and third-year students). The proportional allocation method was used to determine the number of students selected from each level. After stratification, simple random sampling was applied to select participants from each level, ensuring that every student

had an equal chance of being included.

2.3. Sampling Procedure

The Kish (1965) approach for known study populations was used to determine the appropriate sample size that adequately reflects the total research population. The Kish method is most suitable when the study population or sampling frame is known, and it is recognized as one of the most accurate ways to calculate sample size [10].

The generic formula for this approach is:

$$n = N / [1 + N (\alpha)^2]$$

Where:

n = sample size,

N = sampling frame (1098 students at SDA NMTC for 2024/2025 academic year)

α = 5% margin of error or confidence level.

$$n = 1098 / [1 + 1098 (0.05)^2]$$

$$n = 293.19$$

$$n = 293$$

2.4. Data Processing and Analysis

Data entry was performed using SPSS software version 26.0, where the data were cleaned and analyzed. Descriptive statistics were computed, and the results for each variable were presented as frequencies and percentages. To analyze the demographic characteristics influencing intention to use contraceptives, a logistic regression analysis was performed. A p value of < 0.05 was considered statistically significant, with 95% confidence intervals reported for all estimates.

2.5. Ethical Statement

This study received approval from the Ghana Adventist Health Services Review Board under approval number (GAHS/ERC/07/25). Informed consent was sought from the study participants in order to make free decisions about their involvement.

3. Results

3.1. Demographics Characteristics of the Study Respondents

A total of 293 respondents were sampled for the study. Almost half of the respondents (n= 144, 49.1%) were within the age of 22-25 years. The data indicates a well-balanced sample in terms of educational level (Level 100, 200 & 300) with respective proportion of 33.3% and program of study (Nursing & Midwifery) with a proportion of 50.5% and 49.5% respectively. A greater proportion of the respondents (n = 286, 97.6%) were single.

Table 1. Demographic characteristics of respondents (n = 293).

Variable	Frequency (n)	Percentage (%)
Age (years)		
18-21	101	34.5
22-25	144	49.1
Above 25	48	16.4
Marital status		
Single	286	97.6
Married	7	2.4
Programme		
Nursing	148	50.5
Midwifery	145	49.5

Variable	Frequency (n)	Percentage (%)
Level		
100	98	33.4
200	98	33.4
300	97	33.2

3.2. Respondents' Knowledge Level on Modern Contraceptives

The study assessed respondents' knowledge level on modern contraceptive methods. As shown in [figure 1](#), the majority of respondents (n = 204, 69.6%) demonstrated good knowledge of modern contraceptives. About one-fifth (n = 59, 20.2%) of the respondents had fair knowledge, whereas only a small proportion (n = 30, 10.2%) exhibited poor knowledge.

Table 2. Knowledge on Modern Contraceptives (N = 293).

Variable	N	%
Formal Education on Modern Contraceptives		
Yes	274	93.5%
No	19	6.5%
Source of Information on Modern Contraceptives (multiple response)		
Classroom lectures	242	82.6%
Clinical practice	103	35.2%
Social media	147	50.2%
Friends/Peers	104	35.5%
Healthcare professionals	128	43.7%
Known Modern Contraceptive Methods (multiple response)		
Oral contraceptive pills	221	75.4%
Condoms (male/female)	171	58.4%
Intrauterine device (IUD)	145	49.5%
Injectable contraceptives	134	45.7%
Implants	115	39.2%
Traditional/Natural methods	77	26.3%
Primary Function of Modern Contraceptives		
Prevention of pregnancy	143	48.8%
Prevention of STIs	101	34.5%
Both A and B	49	16.7%
Perceived Effectiveness of Modern Contraceptives		
Very effective	113	38.6%
Somewhat effective	118	40.3%

Variable	N	%
Not effective	23	7.8%
Not sure	39	13.3%
Time Frames for contraceptive effectiveness		
24 hours	132	45.1%
48 hours	59	20.1%
72 hours	73	24.9%
5 days	29	9.9%
Knowledge score		
Good (KS $\geq$ 12)	204	69.6%
Fair (KS<12 $\geq$ 8)	59	20.2
Poor (KS<8)	30	10.2

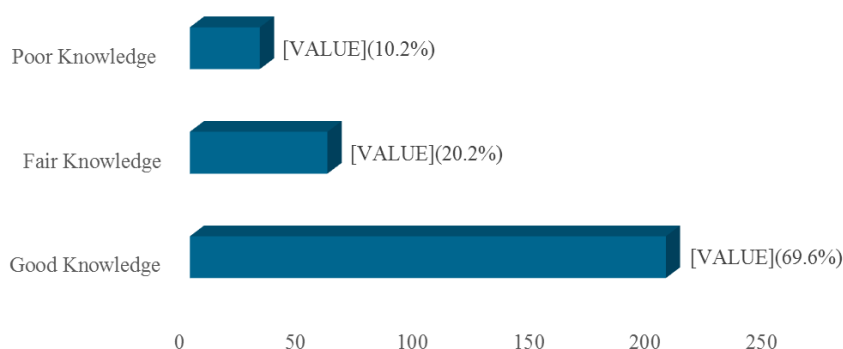


Figure 1. Respondents' knowledge level on modern contraceptive (N = 293).

3.3. Attitudes Towards Modern Contraceptives Methods

Respondents' attitudes towards the use of modern contraceptives were assessed through a series of statements. As presented in Table 3, more than half of the respondents (n = 161, 54.9%) strongly agreed that modern contraceptives are essential for preventing unintended pregnancies, and 132 (45.1%) strongly agreed that contraceptives use should be encouraged among young people. On the other hand, mixed opinions were observed regarding the belief that contraceptive

use promotes promiscuity among young adults, with 25% disagreeing and another 25% remaining neutral. A considerable proportion of respondents (n = 117, 39.9%) strongly agreed that they felt comfortable discussing contraceptive options with peers, while religious beliefs influenced the attitudes of 157 (53.6%) respondents to varying extents. Importantly, the majority (n = 137, 46.8%) strongly agreed that healthcare professionals should provide more education on modern contraceptive methods. As illustrated in figure 2, the composite measure of attitude revealed that 70.5% of respondents demonstrated a good attitude towards modern contraceptives, whereas 29.5% held poor attitudes.

Table 3. Attitudes Towards Modern Contraceptives methods.

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Modern contraceptives are essential for preventing unintended pregnancies.	161 (54.9%)	88 (30.0%)	29 (9.9%)	8 (2.7%)	7 (2.4%)

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The use of contraceptives should be encouraged among young people.	132 (45.1%)	102 (34.8%)	37 (12.6%)	15 (5.1%)	7 (2.4%)
Contraceptive use promotes promiscuity among young adults.	44 (15.0%)	59 (20.0%)	73 (25.0%)	73 (25.0%)	44 (15.0%)
I feel comfortable discussing contraceptive options with my peers.	117 (39.9%)	73 (24.9%)	44 (15.0%)	31 (10.6%)	28 (9.6%)
Religious beliefs influence my opinion on contraceptive use.	96 (32.8%)	61 (20.8%)	84 (28.7%)	43 (14.7%)	9 (3.1%)
I believe healthcare professionals should provide more education on modern	137 (46.8%)	103 (35.2%)	29 (9.9%)	17 (5.8%)	7 (2.4%)

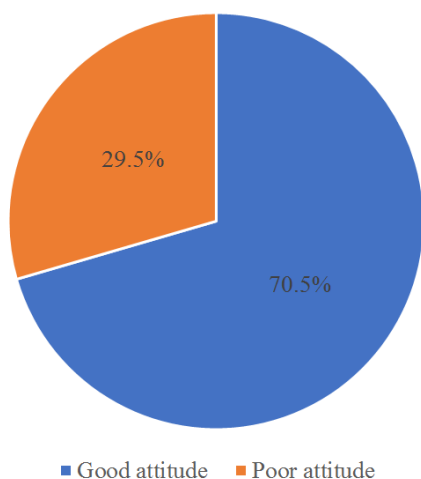


Figure 2. Respondents' attitude towards the use of contraceptives.

3.4. Intention to Use Contraceptive Methods

Respondents intention to use contraceptive was assessed through several items (Table 4). A little over one-third of the respondents ($n = 111$, 37.9%) reported willingness to start using contraceptives in their next sexual intercourse, while 182 (62.1%) expressed no intention. More than half ($n = 174$, 59.4%) indicated they would consider using contraceptives at least once in every few sexual encounters compared to 119

(40.6%) who would not. Similarly, 157 respondents (53.6%) reported an intention to use contraceptives in the nearest future, whereas 136 (46.4%) did not. However, a lower proportion ($n = 108$, 36.9%) stated they were considering using contraceptives within the next six months, while 185 (63.1%) disagreed. Likewise, only 98 respondents (33.4%) affirmed that they would ensure contraceptive use in every sexual encounter, compared to 195 (66.6%) who would not. Interestingly, 103 respondents (35.2%) asserted that they could not use contraceptives under any circumstances, while a larger majority ($n = 190$, 64.8%) disagreed with this statement.

The relationship between respondents' demographic characteristics and their intention to use contraceptives was examined using the chi-square test of association (table 5). Age did not show a statistically significant association with intention to use contraceptive ($\chi^2 = 3.387$, $p = 0.184$, Cramér's $V = 0.108$). however, marital status was significantly associated with contraceptive use intention ($\chi^2 = 6.972$, $p = 0.008$, Cramér's $V = 0.154$), with single respondents expressing greater intention to use compared married counterparts. Similarly, the academic programme of study was significantly related to contraceptive use intention ($\chi^2 = 8.260$, $p = 0.004$, Cramér's $V = 0.168$). Furthermore, the respondents' academic level showed the strongest significant association with contraceptive use intention ($\chi^2 = 23.922$, $p < 0.001$, Cramér's $V = 0.286$).

Table 4. Intention to use contraceptive methods.

Statement	Response	
	Yes (%)	No (%)
Am willing to start using contraceptive in my next sexual Intercourse	111 (37.9%)	182 (62.1)
I will consider the use of contraceptive at least once in every few times I have sexual intercourse	174 (59.4%)	119 (40.6)

Statement	Response	
	Yes (%)	No (%)
Am considering using contraceptive within the next 6 months	108 (36.9%)	185 (63.1%)
I will ensure the usage of contraceptive in every sexual intercourse am engaged in	98 (33.4%)	195 (66.6%)
I intend using contraceptive in the nearest future	157 (53.6%)	136 (46.4%)
I cannot use contraceptive no matter what	103 (35.2%)	190 (64.8%)

Table 5. Relationship between demographic characteristics and intention to use contraceptives.

Variables		Intention to use		Chi-square (x ²)	p-value	Cramér's V
		Yes	No			
Demographic Age	18-21	31	70	3.387	.184	.108
	22-25	60	84			
	Above 25	20	28			
Marital status	Single	105	181	6.972	.008	.154
	Married	6	1			
Programme	Nursing	68	80	8.260	.004	.168
	Midwifery	43	102			
	100	39	59			
Level	200	58	55	23.922	.000	.286
	300	14	68			

4. Discussions

The current study revealed that the majority of respondents (69.6%) demonstrated good knowledge of modern contraceptive methods, while only a small proportion (10.2%) had poor knowledge. This finding is consistent with studies in Ghana and Nigeria, which also reported high levels of awareness and knowledge of modern contraceptives among young adults and students [11, 12]. Similarly, a study from Ethiopia indicated that most university students were knowledgeable about contraceptive methods, largely due to exposure through health education and media campaigns [13]. In contrast, studies in rural Uganda and Malawi reported lower levels of knowledge and widespread misconceptions [14, 15]. These differences may be attributed to variations in educational background, access to reproductive health information, and availability of youth-friendly health services. The relatively high knowledge levels in this study could reflect the influence of formal health training curricula and exposure to reproductive health education in Ghana. With

respect to attitudes, this study found that most respondents (70.5%) demonstrated positive attitudes toward modern contraceptive use, while 29.5% held negative attitudes. This aligns with studies in Ghana and Ethiopia, which reported predominantly positive attitudes among students and young adults [16, 17], and with a Nigerian study where the majority of adolescents supported contraceptive use to prevent unintended pregnancies [18]. Conversely, findings from Uganda highlighted negative attitudes, largely shaped by cultural norms, stigma, and religious influences [19]. The positive attitudes observed in this study may stem from increased access to information and gradual shifts in social norms, though the persistence of negative perceptions among a minority underscores the need for continued education and stigma reduction.

Despite high knowledge and generally positive attitudes, the study revealed hesitancy regarding contraceptive intentions. More than half of respondents expressed willingness to use contraceptives in the near future (53.6%) and at least occasionally (59.4%), yet fewer were willing to initiate immediate use (37.9%) or commit to consistent use (33.4%).

This pattern mirrors studies in Nigeria and Ethiopia, where young adults, despite being well-informed, expressed reluctance toward consistent use due to cultural norms, stigma, and concerns about side effects [17, 20]. By contrast, a study in Kenya reported higher levels of intention for regular use [21], suggesting that differences in accessibility, peer acceptance, and family planning services may shape intention differently across contexts. In this study, marital status was significantly associated with contraceptive intention, with single respondents reporting higher intention than married respondents. This finding supports studies from Ghana and Uganda [22, 23], where unmarried young adults often used contraception to delay childbearing. However, some African studies reported no significant association [24, 25], indicating contextual variation. Academic programme and academic level also significantly influenced contraceptive intention, with nursing students and higher-level students demonstrating greater intention. This is consistent with findings from Ethiopia and Nigeria [26, 27], which emphasized the role of health training in shaping reproductive health behaviors. Interestingly, age was not a significant predictor of contraceptive intention in this study, which contrasts with evidence from Tanzania and Malawi where age strongly influenced intention [28, 29]. This may be due to the relatively narrow age range of students in the current study, where academic exposure rather than age differences may play a greater role.

5. Limitation of the Study

The study was conducted in a single nursing and midwifery training institution, which may limit the generalizability of the results to other health training colleges across Ghana. The use of a cross-sectional design restricts the ability to establish causal relationships between sociodemographic factors and contraceptive intentions. The study was restricted to female students due to the single-sex composition of the institution.

Abbreviations

LMICs	Low- and Middle-Income Countries
NMTC	Nursing and Midwifery Training College
SDA	Seventh-Day Adventist
SDG	Sustainable Development Goal

Author Contributions

Richard Mensah: Conceptualisation, Writing - original draft, Validation, Methodology, Investigation, Data curation, Formal analysis, Writing - review & editing, Software, Project administration.

Ellen Opoku Boamah: Conceptualisation, Writing - original draft, Validation, Methodology, Investigation, Data curation, Formal analysis, Writing - review & editing, Software,

Project administration.

Mercy Dankwah: Conceptualisation, Writing - original draft, Validation, Methodology, Investigation, Data curation, Formal analysis, Writing - review & editing, Software, Project administration.

Setina Boahemaa Adu: Conceptualisation, Writing - original draft, Validation, Methodology, Investigation, Data curation, Formal analysis, Writing - review & editing, Software, Project administration.

Adwoa Arkoh Boaten: Conceptualisation, Writing - original draft, Validation, Methodology, Investigation, Data curation, Formal analysis, Writing - review & editing, Software, Project administration.

Eunice Korlekie Teye: Conceptualisation, Writing - original draft, Validation, Methodology, Investigation, Data curation, Formal analysis, Writing - review & editing, Software, Project administration.

Gifty Manu Gyamfi: Conceptualisation, Writing - original draft, Validation, Methodology, Investigation, Data curation, Formal analysis, Writing - review & editing, Software, Project administration.

Sampson Asiedu: Conceptualisation, Writing - original draft, Validation, Methodology, Investigation, Data curation, Formal analysis, Writing - review & editing, Software, Project administration.

Funding

The authors did not receive any money or funding for this research.

Conflicts of Interest

The authors declare that they have no competing interests.

References

- [1] Mazza, D., & Botfield, J. R. (2022). Sexual and Reproductive Health. *Seminars in Reproductive Medicine*, 40(05/06), 227-228. <https://doi.org/10.1055/s-0042-1759553>
- [2] United Nations. (2017). Sustainable Development Goals: Goal 3 — Ensure healthy lives and promote well-being for all at all ages. United Nations. Retrieved from <https://sdgs.un.org/goals/goal3>
- [3] Chandra-Mouli, V., & Akwara, E. (2020). Improving access to and use of contraception by adolescents: What progress has been made, what lessons have been learnt, and what are the implications for action? *Best Practice & Research in Clinical Obstetrics & Gynaecology*, 66, 107-118. <https://doi.org/10.1016/J.BPOBGYN.2020.04.003>
- [4] Ghana Health Service (GHS), (2023). Ghana Demographic and Health Survey 2022: Key indicators report. GHS. <https://dhsprogram.com/pubs/pdf/PR149/PR149.pdf>

- [5] Ősz, B. E., Ștefănescu, R., Tero-Vescan, A., Sălcudean, A., Boca, C. D., Jitcă, G., & Vari, C. E. (2021). Medical knowledge, religious beliefs, and free will: attitudes and opinions of various undergraduate female respondents regarding oral contraception. A Questionnaire-Based study. *International journal of environmental research and public health*, 18(7), 3502. <https://doi.org/10.3390/IJERPH18073502>
- [6] Soin, K. S., Yeh, P. T., Gaffield, M. E., Ge, C., & Kennedy, C. E. (2022). Health workers' values and preferences regarding contraceptive methods globally: a systematic review. *Contraception*, 111, 61-70. <https://doi.org/10.1016/j.contraception.2022.04.012>
- [7] Brown, K. S. (Ed.). (2025). *Women's Reproductive and Sexual Health*. Taylor & Francis.
- [8] Akunvane, R., Badzi, C. D., Ampimah, B. C., & Annan, E. (2024). Attitudes and Social Norms Influencing Adolescents' Contraception Utilisation in Bongo District, Ghana. *Journal of Advocacy, Research and Education*, 11(2), 282-294.
- [9] Issah, H., Salifu, A., & Awal, I. (2022). Knowledge of contraceptives, knowledge of types, and identified challenges to contraceptives use among undergraduate nursing students in the university for development studies. *Open Access Library Journal*, 9(3), 1-15. <https://doi.org/10.4236/oalib.1108530>
- [10] Kish, L. (1965). Sampling organizations and groups of unequal sizes. *American sociological review*, 564-572.
- [11] Der, A. D., & Tarkang, E. E. (2023). Knowledge, Attitude and Utilisation of Modern Contraceptives among Female Senior High School Students in the Kpando Municipality, Ghana. *medRxiv*. <https://doi.org/10.1101/2023.10.01.23296407>
- [12] Adeniji, O. I., & Adeniji, A. (2024). Factors affecting the use of modern contraception among women of reproductive age in Odigbo local government area, Ondo state, Nigeria. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 13(6), 1404-1408. <https://doi.org/10.18203/2320-1770.ijrcog20241420>
- [13] Yimer, B. T., Atsbeha, B. W., & Getaw, N. S. (2017). Knowledge, attitude and practice of emergency contraceptives among female university students in Ethiopia: a systematic review and meta-analysis. 9(1), 12. <https://ejrh.org/index.php/ejrh/article/view/14>
- [14] Oonyu, J. C. (2020). Contraceptive knowledge and practices of undergraduate female students at Makerere University, Uganda. *Women's Reproductive Health*, 7(1), 60-72. <https://doi.org/10.1080/23293691.2019.1690305>
- [15] Kainja Malota, J. (2019). Knowledge, attitude, and practices of the youth on emergency contraceptive pills at selected family planning clinics in Lilongwe (Doctoral dissertation).
- [16] Abdul-Manan, S., Abukari, A., Nukpezah, R. N., Adadow, Y., & Owusu-Marfo, J. (2023). Prevalence of emergency contraceptive use and associated determinants among Senior High Students in Yendi Municipal of Northern Ghana.
- [17] Mekonnen, A. B., Odo, D. B., & Nigatu, D. (2022). Adolescents' Contraceptive Uptake in Ethiopia: A Meta-Analysis. *BioMed Research International*, 2022, 1-7. <https://doi.org/10.1155/2022/6104467>
- [18] Ojo, O. Y., Adeniran, A., Oluwole, E. O., Olutoba, A. P., & Adewole, S. R. (2023). Corrigendum: Sexual behaviour and uptake of modern contraceptives among adolescents in public secondary schools in Lagos State, Nigeria. *African Journal of Health Sciences*, 35(6), 783-797. <https://doi.org/10.4314/ajhs.v35i6.12>
- [19] Kabagenyi, A., Reid, A., Ntozi, J., & Atuyambe, L. (2016). Socio-cultural inhibitors to use of modern contraceptive techniques in rural Uganda: a qualitative study. *The Pan African Medical Journal*, 25, 78. <https://doi.org/10.11604/pamj.2016.25.78.6613>
- [20] Ugwu, N. H., Igwe, I., Nwokeoma, B. N., Ajuzie, H. D., Iwuamadi, K. C., Ezike, S. C., & Madukwe, C. I. (2022). Adolescents' knowledge and use of sexual and reproductive health services in the Federal Capital Territory, Nigeria. *African Journal of Reproductive Health*, 26(6), 80-88. <https://doi.org/10.29063/ajrh2022/v26i6.9>
- [21] Tamida, A. A. (2024). Utilization of Contraceptives and Associated Factors among Students of Kampala International University-Western Campus Ishaka, Bushenyi District, Uganda. *NEWPORT INTERNATIONAL JOURNAL OF RESEARCH IN MEDICAL SCIENCES (NIJRMS)*, 5(1), 50-57. <https://doi.org/10.59298/nijrms/2024/51.5057.1400>
- [22] Nyarko, S. H. (2015). Prevalence and correlates of contraceptive use among female adolescents in Ghana. *BMC women's health*, 15(1), 60. <https://doi.org/10.1186/s12905-015-0221-2>
- [23] Nakyeeyune, L. M. (2018). Utilization of contraceptives and the associated factors among students of Kampala International University western campus ishaka-Busenye District Uganda. <http://hdl.handle.net/20.500.12306/4446>
- [24] Budu, E., Ahinkorah, B. O., Seidu, A. A., Armah-Ansah, E. K., Salihu, T., Aboagye, R. G., & Yaya, S. (2022). Intention to use contraceptives among married and cohabiting women in sub-saharan Africa: a multilevel analysis of cross-sectional data. *BMJ open*, 12(11), e060073. <https://doi.org/10.1136/bmjopen-2021-060073>
- [25] Ahinkorah, B. O., Budu, E., Aboagye, R. G., Agbaglo, E., Arthur-Holmes, F., Adu, C., & Seidu, A. A. (2021). Factors associated with modern contraceptive use among women with no fertility intention in sub-Saharan Africa: evidence from cross-sectional surveys of 29 countries. *Contraception and reproductive medicine*, 6(1), 22. <https://doi.org/10.1186/s40834-021-00165-6>
- [26] Abewa, T., Addis, A., Asmamaw, D. B., Asmare, L., Alemu, T., & Bayou, F. D. (2024). Knowledge and use of emergency contraceptive methods and associated factors among female youth college students in Gondar city, Northwest Ethiopia, 2023. *BMC Women's Health*, 24(1), 570. <https://doi.org/10.1186/s12905-024-03413-4>
- [27] Agbo, H. A., Adeoye, P. A., Yilzung, D. R., Mangut, J. S., & Ogbada, P. F. (2025). Levels and predictors of knowledge, attitudes, and practices regarding contraception among female TV studies undergraduates in Nigeria: cross-sectional study. *JMIRx Med*, 6(1), e56135. <https://doi.org/10.2196/56135>

- [28] Forty, J., Rakgoasi, S. D., & Keetile, M. (2021). Patterns and determinants of modern contraceptive use and intention to use contraceptives among Malawian women of reproductive ages (15-49 years). *Contraception and reproductive medicine*, 6(1), 21. <https://doi.org/10.1186/s40834-021-00163-8>
- [29] Rusibamayila, A., Phillips, J., Kalollela, A., Jackson, E., & Baynes, C. (2017). Factors influencing pregnancy intentions and contraceptive use: an exploration of the 'unmet need for family planning' in Tanzania. *Culture, health & sexuality*, 19(1), 1-16. <https://doi.org/10.1080/13691058.2016.1187768>