

Developing Knowledge of Sexual and Reproductive Health among Adolescent Girls Through a Peer Mentoring Approach in Nursing

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ABSTRACT

Background: The level of knowledge about sexual and reproductive health remains limited in Indonesia. Nurses as educators facilitate adolescents in understanding the information about reproductive health, such as myths during menstruation, unplanned pregnancies, and sexually transmitted diseases. As a result, the information obtained will not be misinterpreted. **Objective:** This research aims to increase the knowledge of adolescent girls about sexual and reproductive health using a peer mentoring approach. **Methods:** This is a quasi-experimental quantitative research study with a pre-test and post-test one-group design. The participants were chosen using the total sample technique, obtained from 35 students aged 10-18 who attended the Andalusia Batam Islamic School. Mentoring is carried out by mentors who have received previous training for 1 month for 4 meetings. Questionnaires were given before and after the intervention to assess knowledge levels of students. The data was processed using the Shapiro-Wilk test for normality, and then the Wilcoxon Signed Rank Test was carried out to see the effect of the interventions. **Results:** The level of knowledge before the intervention was in the low category of 77.1% (n=27) and the medium category of 22.9% (n=8). Meanwhile, after the intervention, the level of knowledge in the low category was 28.6% (n=10), and the medium category increased to 71.4% (n=25). A statistically significant influence of education was observed when using the peer approach method, along with an improvement in the knowledge of adolescent girls, with a *p*-value of 0.001. **Conclusion:** The peer mentoring approach has proven effective in increasing adolescent girls' knowledge of sensitive themes related to sexual and reproductive health. This suggests that adding peer mentoring to adolescent health education can boost awareness and improve health outcomes.

Keywords: Adolescent Girls; Knowledge Level; Peer Mentoring; Reproductive Health

INTRODUCTION

The sustainable development goals set by the United Nations include achieving healthy living and well-being. In the Sustainable Development Goals, Goal 3 focusses on providing access to sexual and reproductive health services, including family planning, information, and education. In addition, this goal also emphasises the importance of adequate education and information to enable individuals to make informed decisions about their health (Logie *et al.*, 2021; World Health Organization (WHO), Europe, 2018).

Healthy sexual and reproductive health reflects a positive quality of life for women and children. This quality of life departs from knowledge about pregnancy preparation (Mekonnen *et al.*, 2024). In addition to biological readiness, pregnant women also prepare mentally (Tian *et al.*, 2024). A mother who is physically and mentally healthy during pregnancy will give birth to a healthy child (Asefa *et al.*, 2024; Mekonnen *et al.*, 2024). Recent studies indicate that women who are not adequately prepared for pregnancy are at a higher risk of experiencing adverse outcomes that can negatively impact both maternal and neonatal health (Tian *et al.*, 2024). Similarly, women who do not wish to continue their pregnancy are more likely to seek methods to terminate it (Kumsa *et al.*, 2024). In Indonesia, the level of knowledge among adolescents about sexual and

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reproductive health remains low, which can affect their readiness for future reproductive health challenges (Putri *et al.*, 2022).

Adolescent girls face various threats to their reproductive health, including unwanted pregnancies, abortions, sexually transmitted infections, and myths surrounding menstruation, which are often considered taboo. The maturation of reproductive organs during adolescence can contribute to an increase in their sexual drive, further emphasizing the need for comprehensive education and support (Mostert *et al.*, 2020). Conflicts among adolescents will emerge when they act without knowing the impact (Seno *et al.*, 2024; Thapa *et al.*, 2017). Unplanned pregnancies among adolescents often result in an increased likelihood of seeking abortion (Bryson *et al.*, 2024; Espinoza, Samandari & Andersen, 2020). Abortion is highly restricted in a large number of countries, and many countries where it is broadly legal lack robust systems for collecting abortion data (Bearak *et al.*, 2022). They may feel reluctant to disclose their situation to family, friends, or healthcare professionals, leading them to seek unsafe abortion methods. Consequently, the existence of environmental influences causes adolescents to become a vulnerable group to sexually transmitted infections (Birger *et al.*, 2024; Szcześniak *et al.*, 2022). The desire to try something new and the influence of the environment cause adolescents to become a vulnerable group to sexually transmitted infections (Mwamba, Mayers & Shea, 2022; Nott *et al.*, 2023). In addition, menstruation is also in the spotlight for adolescent girls (Findlay *et al.*, 2020). They may sometimes overlook the pain they experience, which can impair their productivity during study sessions (Cardoso *et al.*, 2021). Eastern culture has various myths surrounding menstruation that prevent teenagers from doing something during this period (Ssemata *et al.*, 2023). For example, some prohibitions or taboos should not be implemented during a woman's menstruation (Nimbhorkar, Jumade & Rahate, 2023).

Various efforts are made to educate adolescents, such as incorporating the subject of reproduction into the school curriculum, providing counselling by trained health workers, and making mentoring methods available. Previous research revealed that adolescents admitted to hospitals lack knowledge and are less educated at school regarding reproductive health (Antopolskaya *et al.*, 2022; Davidson, Hammarberg & Fisher, 2024; Rivenes Lafontan, Jones & Lama, 2024). Mentoring allows these adolescents to be more accessible and open to communication, especially about sensitive topics such as sexual and reproductive health (Butler *et al.*, 2024; Ramalepa & Netangaheni, 2024). Adolescent girls prefer to tell their friends instead of their parents or teachers (Desrosiers *et al.*, 2020); likewise, with the education obtained from health workers, as they may feel more comfortable discussing sensitive issues with peers who they perceive as understanding or non-judgemental. Although first-level health services are easily accessible to the public, the number of adolescent visits is rare.

Not all adolescent girls are aware of adolescent reproductive health services. The Teenager Integrated Service Post (Posyandu) is a specialized service provided by the Indonesian government to cater to the needs of adolescents (Peraturan Menteri Kesehatan, 2019). However, this program has not run optimally, so many teenagers do not know the function and form of the activities (Davidson, Hammarberg & Fisher, 2024). This program aims to educate adolescents regarding the health problems they experience, including adolescent reproductive health (Tobe *et al.*, 2024). Posyandu activities are carried out at community service posts or public fields. The lack of privacy in the area is a significant factor contributing to adolescent reluctance to visit (Hoover & Crewe, 2020).

Adolescents' curiosity encourages them to seek information independently (Stockdale & Coyne, 2020). Access to easily accessible information raises various perceptions among adolescent girls (Comulada *et al.*, 2020; McGuire *et al.*, 2024). Adolescents can search for what they need, but not all the information they get is understandable. This information that is not valid can be a risk factor for inappropriate attitudes and actions in adolescents' responses to various phenomena. Therefore, adolescents need a medium to consult and share information. Nurses can play an important role here as providers of valid information by facilitating discussions among adolescents (Qi *et al.*, 2023).

Various reproductive health myths are believed among such uneducated communities, such as during menstruation, adolescents are not allowed to do certain activities. The prohibition of bathing during menstruation can lead to discomfort and negatively impact personal hygiene (DeMaria *et al.*, 2020). This restriction may contribute to poor hygiene practices during menstruation (Worku *et al.*, 2024). Pruritus, allergy, rashes, and other skin diseases will easily thrive on the unclean body of adolescent girls Nimbhorkar, Jumade &

Rahate, 2023). In general, the health issues that adolescent girls experience during menstruation are often related to poor sanitation, leading to symptoms such as infection or skin irritations.

Sexual and reproductive health issues are still taboo to be discussed with parents or peers. Research proves that some adolescent girls are more open to their mothers (Mataraarachchi *et al.*, 2024). Meanwhile, some individuals expressed feeling more comfortable discussing their sexual life with friends (Qi *et al.*, 2023). As a result, looking at the general picture, it reveals that the knowledge level of adolescent girls is still low (Putri *et al.*, 2022). In some cases, the mother answered some of the adolescent's questions with mythical statements, and the adolescent girls believed it (Mohammed & Larsen-Reindorf, 2020). Given that the prevalence of knowledge and myths surrounding menstruation among adolescents still lacks reliable information, peer mentoring can empower them to provide support to adolescents to make the right decisions.

The peer mentoring approach is carried out to provide open education, which is considered taboo and sensitive. This method is suitable for understanding adolescent girls (Brock *et al.*, 2024). They can tell each other's stories, share experiences, and share information (Desrosiers *et al.*, 2020). In addition, peer mentoring is not a rigid method, where mentors and mentees can freely agree on a place and time to discuss according to their agreement. The duration of repeated activities will also provide closeness between mentors and mentees, which they can trust and share with each other in the end. This research aims to increase the knowledge of adolescent girls about sexual and reproductive health, especially in Andalusian Islamic schools in Batam.

METHODOLOGY

Study Design

This study employed a quasi-experimental quantitative research design using a pretest-post-test approach without a control group to assess the effect of peer mentoring on knowledge of sexual and reproductive health among adolescent girls.

Study Population and Sampling

The total population consisted of 42 female students aged 10-18 years. A total sampling technique was employed to ensure comprehensive representation, as all participants shared similar characteristics and were in the same setting (Creswell & Creswell, 2018). The homogeneity of the sample, with a narrow age range, further justified this sampling method. Although no formal strength analysis was conducted, the sample was sufficient to provide meaningful insights into the impact of peer mentoring programs. The inclusion criteria are female students who are in schools and are willing to be respondents. Exclusion criteria include students who cannot provide informed consent, do not have permission from an accompanying teacher, and do not have significant cognitive skills or have physical impairment that inhibits participation.

Study Setting and Participant Recruitment

The study was conducted at the Andalusia Islamic School Batam from September to October 2023. Samples were collected in classrooms during school extracurricular hours through coordination with student supervisors. Participation in the mentoring activities was voluntary. Informed consent was obtained from all participants before they were included in the study. Since the participants are minors, permission is obtained from the student's accompanying teacher. Participants and accompanying teachers are provided with detailed information about the research's objectives, procedures, potential risks, and benefits. Consent is documented through a signed form, emphasizing that participation is voluntary and can be withdrawn at any time without consequence. Participant confidentiality and anonymity are ensured using coded identifiers. The data is stored securely in an encrypted digital file that can only be accessed by authorised research team members. In addition, no identifying information was included in the final report or publication derived from the study.

Training peer Mentors

Professional nurses specialising in reproductive health conducted training for three volunteers who were active members of intra-school organisations and wanted to become peer mentors for use in mentoring sessions.

Mentoring Intervention

The mentoring sessions were carried out over one month and consisted of four meetings. Each meeting lasted 90 minutes and included a variety of interactive activities such as discussions, games, and video playback. While all female students served as mentees, the final sample size was 35 participants. A total of 7 students unable to complete the peer mentoring program due to scheduling conflicts and personal obligations were excluded from the final analysis.

Data Collection

Questionnaires were adapted from previous research (Zakaria *et al.*, 2020) and distributed before and after the mentoring intervention to assess the knowledge levels of the participants regarding sexual and reproductive health. The pretest and post-test questionnaires were validated for reliability and validity in the context of this study. The validity of the content is established through an expert review involving professionals in adolescent health and education. In addition, a pilot study was conducted with a subset of participants to test the construction's validity and ensure the questions' clarity. Reliability is assessed using Cronbach's Alpha ($\alpha=0.58$), which shows acceptable internal consistency.

Data Analysis

The collected data were analysed using SPSS Version 25. Statistical tests were applied using the Shapiro-Wilk test to assess the normality of the data. The Wilcoxon Signed Rank Test was done to evaluate the effect of the intervention on the participants' knowledge levels.

Ethical Consideration

The ethical agreement for this research was obtained from the Ethics Committee of Universitas Batam, Indonesia with reference number 130P/LPPM-UNIBA/PI-EC/VIII/2023 on 25th August, 2023.

RESULTS

The results of the average data on the level of knowledge of respondents before peer mentoring education were as follows:

Table 1: Level of knowledge among Respondents Before and After Intervention

Level of Knowledge	Pretest		Post-test		Significance
	n	Percentage	n	Percentage	
Low	27	77.1	10	28.6	0.001
Medium	8	22.9	25	71.4	
Total	35	100	35	100	

According to Table 1, the research results showed that most of the respondents (77.1%, 27 respondents) had a low level of knowledge before the intervention, while 22.9% (or 8 individuals) had a medium level of knowledge. However, there was a significant increase in respondents' knowledge level after the intervention, namely the medium category to 71.4% (n=25) and the low category decreased to 28.6% (n=10). The statistical test showed a significant change between the pre-test and the post-test with a value of $p=0.001$.

Table 2 indicates the respondents' knowledge improvement after peer mentoring, with significant differences observed in three questions related to adolescent changes, menstrual prohibitions, and STI transmission ($p = 0.046, 0.021$ and 0.000 , respectively). Other questions showed varying degrees of knowledge enhancement but without statistical significance.

While other questions demonstrated improvements in knowledge levels, their p -values were greater than 0.05, indicating that these changes were not statistically significant. Overall, the data suggest that peer mentoring effectively enhanced knowledge in key areas of sexual and reproductive health among adolescent girls.

Table 2: Level of Knowledge and Influence of Peer Mentoring Interventions on Each Question Item

Knowledge	Pre-test		Post-test		Significance
	n	Percentage	n	Percentage	
Only physical changes occur during adolescence and no psychological changes					
None	7	20	4	11.4	0.046
Low	9	25.7	1	2.9	
Medium	19	54.3	30	85.7	
Menstruation is a form of disease					
None	1	2.9	1	2.9	0.373
Low	3	8.6	0	0	
Medium	31	88.6	34	97.1	
Menstrual cycles more than once a month are not a problem					
None	14	40	22	62.9	0.078
Low	16	45.7	11	31.4	
Medium	5	14.3	2	5.7	
There are prohibitions during menstruation, such as not being allowed to cook, comb your hair, or take a shower					
None	3	8.6	1	2.9	0.021
Low	21	60	12	34.3	
Medium	11	31.4	22	62.9	
Sexual and reproductive health is a personal matter and does not need to be discussed with anyone, including friends/parents					
None	3	8.6	4	11.4	0.182
Low	18	51.4	9	25.7	
Medium	14	40	22	62.9	
Birth spacing with a birth interval of at least two years can reduce adverse health risks for mothers					
None	2	5.7	2	5.7	0.090
Low	26	74.3	19	54.3	
Medium	7	20	14	40	
Unwanted or unplanned pregnancies can lead to abortions					
None	3	8.6	2	5.7	0.107
Low	17	48.6	10	28.6	
Medium	15	42.9	23	65.7	
Carriers of Sexually Transmitted Infections (STIs) can inadvertently transmit the virus to their partners.					
None	0	0	0	0	0.000
Low	16	45.7	1	2.9	
Medium	19	54.3	34	97.1	
Availability of adolescent reproductive health services in residential neighbourhoods					
None	0	0	2	5.7	0.058
Low	14	40	2	5.7	
Medium	21	60	31	88.6	
HIV does not spread the virus from the coughing and sneezing of an infected person					
None	15	42.9	14	40	0.083
Low	13	37.1	3	8.6	
Medium	7	20	18	51.4	

DISCUSSION

The provision of peer mentoring interventions has significantly affected respondents' knowledge levels. Previous research interventions have shown that mentoring is not only able to improve knowledge but also the skills of the trainee (Alston & Hansman, 2023). Effective peer mentoring often involves structured training programs that prepare mentors for their roles. These programs can significantly improve the perceived effectiveness of peer mentoring and its impact on knowledge-sharing (Drossard & Härtl, 2024).

Table 2 shows that the knowledge level of adolescent girls is not high. However, most respondents

indicated an increase in knowledge after referring to each question item. In the medium category, knowledge about the physical and mental changes that happen during adolescence rose from 54.3% (n=19) to 85.7% (n=30). The knowledge of the adolescent regarding reproductive health services in residential settings rose from 60% (n=21) to 88.6% (n=31). This increase in number can be interpreted as an indication that more and more teenage girls are aware of the existence of adolescent healthcare facilities in their neighbourhoods. In addition, knowledge about sexually transmitted diseases has also increased from 54.3% (n=19) to 97.1% (n=34). Adolescents with personal sexual and reproductive health issues who were reluctant to discuss them with friends or parents experienced a significant increase after mentoring interventions, rising from 40% (n=14) to 62.9% (n=22) in the medium category. Most adolescent girls have known that menstruation is not a disease, with data of 88.6% (n=31) of respondents in the mild category before being given the intervention. This data indicates that nearly all adolescent girls, specifically 97.1% (n=34) of respondents in the medium category, understood that menstruation is not a disease following the implementation of peer mentoring. Despite this, adolescent girls still do not fully understand menstruation. This study presents the responses of participants regarding the perception that having more than one menstrual cycle in a month is not considered a disease. The proportion of respondents who were unaware of this fact increased from 40% (n=14) to 62.9% (n=22). However, adolescent girls still do not fully understand menstruation. These findings reflect the influence of adolescents' experiences in shaping their understanding of menstrual health. Adolescents may interpret irregular menstrual cycles as signs of pain or other health issues. This aligns with research indicating that education and personal experience significantly influence adolescents' perceptions of menstrual health (Munro *et al.*, 2021).

Not all adolescent girls are aware of adolescent reproductive health services. Based on Table 2, it can be seen that 66.6% (n=31) are only mindful of this form of service in their environment. Although many healthcare workers have made significant contributions to the community, particularly to specific groups, their objectives have not been fully achieved. As a result, the appropriate methods will continue to be assessed and refined (Nida *et al.*, 2024). Previous research shows that the role of health services is not only emphasised by health workers but is also accompanied by the availability of adequate facilities and an understanding of the culture of the target community (Birger *et al.*, 2024; Davidson, Hammarberg & Fisher, 2024; Were, Mwangi & Muiruri, 2024).

In this study, respondents have begun to know that sexual and reproductive health is not something to be hidden. Respondents have shown an increase in communication with friends and parents of 62.9% (n=40). Fourteen percent more teens knew about family planning and the risks of getting pregnant too quickly. Fifty-seven percent more teens knew about teen abortions to end unwanted pregnancies. And eighty-five percent more teenage girls knew that during puberty, not only physical changes happen but also mental changes take place.

During menstruation, adolescents still believe that several prohibitions should not be followed. Although knowledge of this has been conveyed, there is a slight increase in adolescents' knowledge, from 31.4% (n=11) to 62.9% (n=22). This aligns with previous research, which found that initially, menstruation-related prohibitions were widely adhered to, but as knowledge increased, these beliefs were increasingly recognised as myths (Ssemata *et al.*, 2023; Suwannarong *et al.*, 2024). Although the study's findings show a significant improvement in students' knowledge, the long-term retention of this information remains a crucial question. In addition, despite the overall increase, the myth surrounding menstruation among adolescents persists. Therefore, follow-up interventions that specifically target these discussions need to be carried out.

Limitation

The single-group pre-test and post-test design may be influenced by external factors due to the absence of a control group. Future research could adopt a two-group design or include a larger, more diverse population. Exploring this peer-mentoring approach in different cultural contexts or regions in Indonesia is needed in future, as cultural beliefs significantly influence adolescents' engagement with sexual and reproductive health information.

CONCLUSION

The knowledge level of adolescent girls increased significantly after the mentoring intervention. While some still hold misconceptions about menstruation, most have begun to develop a better understanding. Sexual and reproductive health is now recognized as an important topic to discuss with friends or parents, and participants are aware of available adolescent reproductive health services, providing them with the opportunity to seek reliable information in the future. Peer mentoring has effectively enhanced adolescents' knowledge on topics they once considered prohibited. This study highlights the significance of peer mentoring as an effective approach for nurses working with adolescent groups in the community.

Recommendation

Based on the study findings, it is recommended that nursing educators and policymakers implement peer mentoring programs to enhance adolescents' knowledge on sensitive topics like sexual and reproductive health. Further research is needed to explore the long-term impact of such interventions, their adaptability in various cultural contexts, and their effectiveness in addressing other critical issues within adolescent health.

Conflict of Interest

The authors declare that they have no competing interests.

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REFERENCES

- Alston, G. D., & Hansman, C. A. (2020). Mentoring in adult and continuing education. In *The handbook of adult and continuing education* (1st ed., p. 10). Routledge, New York.
- Antopolskaya, T. A., Logvinova, M. I., Silakov, A. S., & Panov, V. I. (2022). Adolescents of Generation Z: the development of personal agency in the environment of additional education. *European Journal of Contemporary Education*, 11(3), 686-695. <https://doi.org/10.13187/ejced.2022.3.686>
- Asefa, A., Gebremedhin, S., Delamou, A., Marchal, B., & Benová, L. (2024). Is MISreatment of women during facility-based childbirth an independent risk factor for Postpartum Depression in Ethiopia and Guinea? A mixed methods prospective study protocol—MISPOD study. *Reproductive Health*, 21(1). <https://doi.org/10.1186/s12978-024-01850-w>
- Bearak, J. M., Popinchalk, A., Beavin, C., Ganatra, B., Moller, A. B., Tunçalp, Ö., & Alkema, L. (2022). Country-specific estimates of unintended pregnancy and abortion incidence: a global comparative analysis of levels in 2015–2019. *BMJ Global Health*, 7(3). <https://doi.org/10.1136/bmjgh-2021-007151>
- Birger, L., Benyamini, Y., Goor, Y., Sahar, Z., & Peled, E. (2024). Reproductive healthcare utilization for women in the sex trade: a qualitative study. *Israel Journal of Health Policy Research*, 13(1). <https://doi.org/10.1186/s13584-024-00627-7>
- Brock, H., Dwinger, S., Bergelt, C., Sender, A., Geue, K., Mehnert-Theuerkauf, A., & Richter, D. (2024). Peer2Me—evaluation of a peer supported program for adolescent and young adult (AYA) cancer patients: study protocol of a randomised trial using a comprehensive cohort design. *BMC Cancer*, 24(1). <https://doi.org/10.1186/s12885-024-12547-5>
- Bryson, A. E., Boskey, E. R., Grubb, L. K., Shim, J. Y., & Fay, K. E. (2024). Factors affecting willingness to provide medication abortion among north american society for pediatric and adolescent gynecology members caring for adolescents and young adults following the dobbs decision. *Journal of Pediatric and Adolescent Gynecology*, 37(6), 586-594. <https://doi.org/10.1016/j.jpag.2024.07.013>

- Butler, N., Quigg, Z., Wilson, C., McCoy, E., & Bates, R. (2024). The Mentors in Violence Prevention programme: impact on students' knowledge and attitudes related to violence, prejudice, and abuse, and willingness to intervene as a bystander in secondary schools in England. *BMC Public Health*, *24*(1), 1–14. <https://doi.org/10.1186/s12889-024-18210-9>
- Cardoso, L. F., Scolese, A. M., Hamidaddin, A., & Gupta, J. (2021). Period poverty and mental health implications among college-aged women in the United States. *BMC Women's Health*, *21*, 1-7. <https://doi.org/10.1186/s12905-020-01149-5>
- Comulada, W. S., Step, M., Fletcher, J. B., Tanner, A. E., Dowshen, N. L., Arayasirikul, S., ... & Special Projects of National Significance Social Media Initiative Study Group. (2020). Predictors of internet health information-seeking behaviors among young adults living with HIV across the United States: Longitudinal observational study. *Journal of Medical Internet Research*, *22*(11). <https://doi.org/10.2196/18309>
- Creswell, J. W., & Creswell, J. D. (2017). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications, US. Retrieved from: https://efaidnbmnnnibpcajpcgclefindmkaj/https://www.ucg.ac.me/skladiste/blog_609332/objava_105202/fajlovi/Creswell.pdf. Accessed on 14th January, 2024
- Davidson, N., Hammarberg, K., & Fisher, J. (2024). Primary healthcare providers' knowledge, practices and beliefs relating to preventive sexual and reproductive health care for women from refugee and asylum-seeking backgrounds in Australia: a national cross-sectional survey. *Australian Journal of Primary Health*, *30*(5). <https://doi.org/10.1071/PY23171>
- DeMaria, A. L., Delay, C., Sundstrom, B., Wakefield, A. L., Naoum, Z., Ramos-Ortiz, J., ... & Brig, K. (2020). “My mama told me it would happen”: menarche and menstruation experiences across generations. *Women & Health*, *60*(1), 87-98. <https://doi.org/10.1080/03630242.2019.1610827>
- Desrosiers, A., Betancourt, T., Kergoat, Y., Servilli, C., Say, L., & Kobeissi, L. (2020). A systematic review of sexual and reproductive health interventions for young people in humanitarian and lower-and-middle-income country settings. *BMC Public Health*, *20*, 1-21. <https://doi.org/10.1186/s12889-020-08818-y>
- Drossard, S., & Härtl, A. (2024). Development and implementation of digital peer mentoring in small groups for first-year medical students. *GMS Journal for Medical Education*, *41*(1). <https://doi.org/10.3205/zma001666>
- Espinoza, C., Samandari, G., & Andersen, K. (2020). Abortion knowledge, attitudes and experiences among adolescent girls: a review of the literature. *Sexual and Reproductive Health Matters*, *28*(1). <https://doi.org/10.1080/26410397.2020.1744225>
- Findlay, R. J., Macrae, E. H., Whyte, I. Y., Easton, C., & Forrest, L. J. (2020). How the menstrual cycle and menstruation affect sporting performance: experiences and perceptions of elite female rugby players. *British Journal of Sports Medicine*, *54*(18), 1108-1113. <https://doi.org/10.1136/bjsports-2019-101486>
- Kumsa, H., Mislul, E. K., Arage, M. W., Kidie, A. A., Hailu, T., & Tenaw, L. A. (2024). Prevalence and determinants of pregnancy termination in Ethiopia: a systematic review and meta-analysis. *BMJ Open*, *14*(3). <https://doi.org/10.1136/bmjopen-2023-073799>
- Logie, C. H., Abela, H., Turk, T., Parker, S., & Gholbzouri, K. (2021). Sexual and reproductive health self-care interventions in the Eastern Mediterranean Region: findings from a cross-sectional values and preferences survey to inform WHO normative guidance on self-care interventions. *Health Research Policy and Systems*, *19*, 1-12. <https://doi.org/10.1186/s12961-020-00659-w>
- Matararachchi, D., Buddhika Mahesh, P. K., Pathirana, T. E. A., & Vithana, P. V. S. C. (2024). Development and implementation of a worksite-based intervention to improve mothers' knowledge, attitudes, and skills in sharing information with their adolescent daughters on preventing sexual violence: lessons learned in a developing

- setting, Sri Lanka. *BMC Public Health*, 24(1). <https://doi.org/10.1186/s12889-024-18416-x>
- McGuire, M. F., Ortega, E., Patel, R., Paz-Soldán, V. A., & Riley-Powell, A. R. (2024). Seeking information and services associated with reproductive health among rural Peruvian young adults: exploratory qualitative research from Amazonas, Peru. *Reproductive Health*, 21(1). <https://doi.org/10.1186/s12978-024-01769-2>
- Mekonnen, B. D., Vasilevski, V., Bali, A. G., & Sweet, L. (2024). Association between pregnancy intention and completion of newborn and infant continuum of care in Sub-Saharan Africa: systematic review and meta-analysis. *BMC Pediatrics*, 24(1). <https://doi.org/10.1186/s12887-024-05036-y>
- Mohammed, S., & Larsen-Reindorf, R. E. (2020). Menstrual knowledge, sociocultural restrictions, and barriers to menstrual hygiene management in Ghana: Evidence from a multi-method survey among adolescent schoolgirls and schoolboys. *PloS One*, 15(10). <https://doi.org/10.1371/journal.pone.0241106>
- Mostert, K., Sethole, K. M., Khumisi, O., Peu, D., Thambura, J., Ngunyulu, R. N., & Mulaudzi, M. F. (2020). Sexual knowledge and practice of adolescent learners in a rural South African school. *African Health Sciences*, 20(1), 28-38. <https://doi.org/10.4314/ahs.v20i1.6>
- Munro, A. K., Hunter, E. C., Hossain, S. Z., & Keep, M. (2021). A systematic review of the menstrual experiences of university students and the impacts on their education: a global perspective. *PloS One*, 16(9). <https://doi.org/10.1371/journal.pone.0257333>
- Mwamba, B., Mayers, P., & Shea, J. (2022). Sexual and reproductive health knowledge of postgraduate students at the University of Cape Town, in South Africa. *Reproductive Health*, 19(1). <https://doi.org/10.1186/s12978-022-01507-6>
- Nida, S., Tyas, A. S. A., Putri, N. E., Larasanti, A., Widoyopi, A. A., Sumayyah, R., ... & Espresso, A. (2024). A systematic review of the types, workload, and supervision mechanism of community health workers: lessons learned for Indonesia. *BMC Primary Care*, 25(1). <https://doi.org/10.1186/s12875-024-02319-2>
- Nimbhorkar, S. P., Jumade, P. P., & Rahate, N. P. (2023). Knowledge, perceptions, taboos, and practices of menstrual hygiene among adolescent girls in urban and rural areas of central India. *Journal of South Asian Federation of Obstetrics and Gynaecology*, 15(6), 696-702. <https://doi.org/10.5005/jp-journals-10006-2344>
- Nott, V. R., Hazell, G. A., Ayres, S., Kirkhope, N., Fidler, S., & Foster, C. (2023). Sexual and reproductive health needs of young women living with perinatally acquired HIV. *International Journal of STD & AIDS*, 34(11), 791-794. <https://doi.org/10.1177/09564624231179768>
- Peraturan Menteri Kesehatan. (2019). *Peraturan Menteri Kesehatan Republik Indonesia Nomor 08 Tahun 2019 tentang Standar Pelayanan Kefarmasian di Apotek* [Regulation of the Minister of Health of the Republic of Indonesia Number 08 of 2019 on Pharmaceutical Service Standards in Pharmacies]. Lembaran Negara Republik Indonesia, 1. Retrieved from <https://peraturan.bpk.go.id/Details/111722/permenkes-no-8-tahun-2019>. Accessed on: 29th June, 2024.
- Putri, A., Munirah, D., Sansuwito, T., Utami, R., & Ramadia, A. (2022). Knowledge of Sexual and Reproductive Health Among High School Students, Batam, Indonesia. *Science Midwifery*, 10(5), 4237-4245. <https://doi.org/10.35335/midwifery.v10i5.1008>
- Qi, W., Li, H., Lian, Q., Zuo, X., Yu, C., Lou, C., & Tu, X. (2023). Knowledge level and access barriers related to sexual and reproductive health information among youth with disabilities in China: A cross-sectional study. *Reproductive Health*, 20(1). <https://doi.org/10.1186/s12978-023-01625-9>
- Ramalepa, T. N., & Netangaheni, T. R. (2024). A scoping review of strategies for adolescents' sexual and reproductive health role modelling. South African family practice: *Official Journal of the South African Academy of Family Practice/Primary Care*, 66(1), e1–e9. <https://doi.org/10.4102/safp.v66i1.5859>

- Rivenes Lafontan, S., Jones, F., & Lama, N. (2024). Exploring comprehensive sexuality education experiences and barriers among students, teachers and principals in Nepal: a qualitative study. *Reproductive Health*, 21(1). <https://doi.org/10.1186/s12978-024-01876-0>
- Seno, R., Engracia, M. K., Hairulla, N., Malubay, K. M., Santillana, L., & Orias, J. (2024). Knowledge and Attitude towards Contraceptive Use among Female University Students in a Higher Institution in Northern Mindanao, Philippines. *The Malaysian Journal of Nursing (MJN)*, 16(1), 89-100. <https://doi.org/10.31674/mjn.2024.v16i01.010>
- Ssemata, A. S., Ndekezi, D., Kansime, C., Bakanoma, R., Tanton, C., Nelson, K. A., ... & MENISCUS Group. (2023). Understanding the social and physical menstrual health environment of secondary schools in Uganda: A qualitative methods study. *PLOS Global Public Health*, 3(11). <https://doi.org/10.1371/journal.pgph.0002665>
- Stockdale, L. A., & Coyne, S. M. (2020). Bored and online: Reasons for using social media, problematic social networking site use, and behavioral outcomes across the transition from adolescence to emerging adulthood. *Journal of Adolescence*, 79, 173-183. <https://doi.org/10.1016/j.adolescence.2020.01.010>
- Suwannarong, K., Amonsin, A., Ponlap, T., Thammasutti, K., Thongkan, W., Balthip, K., ... & Suwannarong, K. (2024). Beliefs, taboos, usages, health perceptions, and practices toward wildlife among different ethnicities in Tak and Mae Hong Son Provinces, Thailand. *BMC Public Health*, 24. <https://doi.org/10.1186/s12889-024-19941-5>
- Szczęśniak, M., Bajkowska, I., Czaprowska, A., & Sileńska, A. (2022). Adolescents' self-esteem and life satisfaction: Communication with peers as a mediator. *International Journal of Environmental Research and Public Health*, 19(7). <https://doi.org/10.3390/ijerph19073777>
- Thapa, B., Powell, J., Yi, J., McGee, J., Landis, J., Rein, L., ... & Karmacharya, B. (2017). Adolescent health risk and behavior survey: A school based survey in central Nepal. *Kathmandu University Medical Journal (KUMJ)* 15, 301-307. Retrieved from; <https://www.kumj.com.np/issue/60/301-307.pdf>. Accessed on 29th June, 2024.
- Tian, G., Rojas, N. M., Norton, J. M., Barajas-Gonzalez, R. G., Montesdeoca, J., & Kerker, B. D. (2024). The associations between social support and mental health among Chinese immigrant pregnant and parenting women. *BMC Pregnancy and Childbirth*, 24(1). <https://doi.org/10.1186/s12884-024-06765-9>
- Tobe, L., Ilyas, K., Ingoglia, J. N., Addo-Ayensu, G., Revere, C., Allston, A., ... & Velasco, I. (2024). Public health youth ambassador program: educating and empowering the next generation of public health leaders to build thriving communities. *Journal of Health Care for the Poor and Underserved*, 35(3), 132-142. <http://dx.doi.org/10.1353/hpu.2024.a933287>
- Were, B. N., Mwangi, E. M., & Muiruri, L. W. (2024). Barriers of access to primary healthcare services by National Health Insurance Fund capitated members in Uasin Gishu county, Kenya. *BMC Health Services Research*, 24(1). <https://doi.org/10.1186/s12913-024-11282-8>
- World Health Organization. Regional Office for Europe. (2017). Malaria: fact sheet on Sustainable Development Goals (SDGs): health targets. World Health Organization. Regional Office for Europe. Retrieved from: <https://iris.who.int/handle/10665/340834>. Accessed on 17th march, 2024.
- Worku, Y., Kassa, G. M., Mekonen, B., Desta, M., Bishaw, K. A., Gedfaw, M., ... & Shiferaw, A. (2024). Menstrual hygiene management practice and associated factors among high school and preparatory school adolescent students in Debre Markos town, Northwest, Ethiopia: a mixed-method study. *BMC Women's Health*, 24(1). <https://doi.org/10.1186/s12905-024-03265-y>
- Zakaria, M., Karim, F., Mazumder, S., Cheng, F., & Xu, J. (2020). Knowledge on, attitude towards, and practice of sexual and reproductive health among older adolescent girls in Bangladesh: an institution-based cross-sectional study. *International Journal of Environmental Research and Public Health*, 17(21). <https://doi.org/10.3390/ijerph17217720>