

Integrating Reproductive Health in Sexual Education: A New Model to Address Global Challenges Among Adolescents

¹Andi Nurzakiah Amin*, ²Samsiana, ³Andi Atssam Mappanyukki

*Corresponding Author: Andi Nurzakiah Amin e-mail: yayananza86@gmail.com

^{1,2}Departemen of Health Administration, State University of Makassar, Makassar, Indonesia
³Departemen of Sprorts Since, State University of Makassar, Makassar, Indonesia

Abstract

Objectives. This study developed a comprehensive sexual education model to reduce unwanted pregnancies and sexually transmitted infections, and improve adolescents' knowledge and life skills.

Materials and Methods. This study involved 35 participants, consisting of 20 adolescents (12-19 years old) and 15 educators (25-50 years old) from 3 schools. A qualitative research method was chosen to explore experiences and views related to the integration of reproductive health in sexual education. The sample was selected by purposive sampling, and data were collected through in-depth interviews and focus group discussions. Data were analyzed using thematic techniques to identify patterns and themes from the interviews and observations.

Results. The results of the analysis showed that before the implementation of the sexual education model, adolescents had limited and inconsistent knowledge about reproductive health. After four months of implementation, many adolescents reported increased understanding and confidence in protecting themselves. Some students considered the materials too formal and experienced problems accessing information outside of school. Educators rated the curriculum as effective but faced challenges in addressing student discomfort and resource limitations. Students felt more open and comfortable, but wanted more discussion and practice. Teachers and facilitators suggested improving the curriculum, materials, and training.

Conclusion. Comprehensive sexual education programmes increase students' knowledge, but require development of interactions, policy support, and teacher training. Despite the model's success in increasing knowledge and skills, the small sample size limits generalizability, and the formal nature of the material reduced student engagement. Future research should consider expanding the sample and integrating technology to address accessibility issues. The findings emphasize the need for stronger policy backing, enhanced teacher support, and the creation of a more dynamic and inclusive learning environment.

Keywords: Athletic Basic Coordination, Running Ability

Introduction

Adolescent reproductive health is an issue that is increasingly receiving serious attention from various parties, including the government, educational institutions, and international organisations. Adolescents are in a phase of development that is vulnerable to various sexual health risks, such as unwanted pregnancy, sexually transmitted infections (STIs), and risky sexual behaviour. According to a report from the United Nations Population Fund (UNFPA), every year more than 21 million women aged 15-19 in developing countries experience pregnancy, and more than half of them are unplanned. This figure shows the importance of more comprehensive and targeted sexual education for adolescents (Villalobos et al., 2023).

In Indonesia, data from the National Population and Family Planning Agency (BKKBN) shows that the prevalence of teenage pregnancy is still relatively high, especially in rural areas. One of the main factors leading to this is adolescents' low knowledge of reproductive health. Many of them feel embarrassed or afraid to seek accurate information about sexuality. Formal education in schools that addresses this topic is often limited and lacks depth. Many educational institutions tend to avoid or provide incomplete information on sexuality and reproductive health, influenced by conservative social and cultural norms (Purba & Sukhita, 2023).

Another challenge is adolescents' lack of access to correct and accurate information. With the increasing use of technology and social media, adolescents are more easily exposed to incorrect or misleading information related to sexuality on the internet. A study from the Ministry of Health of the Republic of Indonesia revealed that most adolescents obtain information about sexuality from peers or social media, which often cannot be accounted for. This worsens the situation of adolescent reproductive health, as they tend to make unwise decisions without proper information. This condition is also found in Bulukumba Regency, where adolescents tend to face similar problems, worsening the reproductive health situation because they often make unwise decisions without proper information (Janighorban et al., 2022). The above statement is supported by data in 2024 from January to July in several rural areas in Bulukumba Regency showing the prevalence of teenage pregnancy ranging from 15%-18%, the rate of spread of sexually transmitted infections among adolescents reached 14%, access to comprehensive sexual education among school children is estimated to be only 20%-25% of adolescents who have access to this education programme and the use of social media by adolescents is estimated to reach 75%. These facts identify an urgent need to expand the coverage of comprehensive sexual education programmes that are accessible to all adolescents, especially in rural areas. In addition, the high prevalence of sexually transmitted infections and pregnancy among adolescents suggests the importance of integrating reproductive health information in education programmes as well as raising awareness through social media that is widely accessed by adolescents (Grant et al., 2020).

To address these conditions, it is necessary to develop sexual education that integrates reproductive health with a focus on key variables such as improving adolescents' knowledge and understanding of reproductive health, expanding access to and involvement in educational programmes, and optimising the implementation of a comprehensive curriculum. In addition, it is important to provide training and support for educators, as well as develop effective feedback mechanisms to ensure continuous improvement. With this approach, it is expected that adolescents will be better prepared to deal with the risks of unwanted pregnancy, sexually transmitted infections, and risky sexual behaviour.

This study is different from previous studies because it does not only focus on one aspect, but comprehensively combines important variables such as knowledge, access, engagement

and training in one comprehensive sexual education framework. Most studies related to sexual education tend to discuss individual aspects that are only limited to the prevalence of reproductive health problems without integrating all the elements needed to create a sustainable and effective programme. The importance of this research lies in its contribution in designing a more comprehensive sexual education model. This research designs a sexual education model that is more comprehensive and responsive to the needs of adolescents, especially in areas that have limited access such as rural areas. By integrating reproductive health into the curriculum and providing support to educators, this research is expected to be a foundation for the development of policies that are more inclusive and have a positive impact in reducing reproductive health risks among adolescents. The sexual education model in this study seeks to overcome the gap in access to sexual education among adolescents, especially in rural areas which are often neglected in the national education program. With data that shows the low access and understanding of adolescents to comprehensive sexual education, this study is expected to be able to provide relevant and local needs-based solutions, the results of this research not only provide new insights, but can also be used as a reference in designing sexual education programs that are more inclusive, sustainable, and focus on improving the overall welfare of adolescents.

Material and Methods

Study Participants.

The study participants were 35 people consisting of 20 adolescents and 15 educators with case studies conducted in 3 schools. The age range of the participants was adolescents aged 12-19 years old and educators aged 25-50 years old who work as teachers and/or facilitators with experience in sexual education. The educational status of the adolescents was junior high and senior high school.

Study Organisation

The research method used is qualitative. This method was chosen to explore experiences, perceptions, and in-depth views on the integration of reproductive health sexual education among adolescents. This research aims to understand the social and cultural contexts that influence the implementation and impact of sexual education models. The sample selection technique used purposive sampling. This technique is to determine research participants based on certain criteria relevant to the research objectives. Apart from that, the sample selection can represent the population. The data collection technique was carried out using the data triangulation method (source, method and temporal).

Data Analysis

Data were collected through in-depth interviews and focus group discussions with participants to extract in-depth information. The data analysis technique used thematic techniques to identify patterns and themes in the data, ensuring that the interviews and observations reflected the experiences and views of the research participants.

Result

a. Interview with Teenagers

1. Knowledge and Understanding

a) Before Sexual Education Model

Based on the results of interviews, several respondents revealed that they knew about reproductive health, but the information they got was still limited to information from friends, school lessons, family and the internet whose information was not in-depth and very confusing. The following are the results of interviews with informants:

'I only know a little about reproductive health from friends and school lessons, but I don't really understand what contraception is or the risk of STIs'
(AD, 14 years old junior high school)

'I often hear, but the information I get is often confusing from friends and if I go to the internet the information is not consistent'
(MY, 13 years old junior high school)

The same thing was also stated by the following informant:

'my knowledge about reproductive health is very minimal and I feel uncomfortable discussing topics like this'.
(DD, 16 years old high school student)

'I often hear about reproductive health from friends, social media and in school lessons, but the information I get is sometimes different and this makes me confused'
(TI, 17 years old)

b) After the Sexual Education Model is Given

After being given a sexual education model periodically to students for 4 (four) months, some respondents began to give statements that they had understood reproductive health, contraceptives and the risk of STIs, where increased understanding helped informants increase self-confidence and protect themselves more, following the results of interviews with informants:

'now I know more about how to protect myself and the importance of reproductive health'
(AD, 14 years old junior high school)

'now I understand more about various contraceptive methods and how to protect myself from STIs'
(BD, 15 years old junior high school)

'this programme makes me understand reproductive health issues and makes me more confident'
(LN, 17 years old high school)

The same thing was also expressed by the following informant:

'now I understand reproductive health issues and I have started to learn to choose better when making friends or behaving'.
(TI, 17 years old high school)

'This programme provides clear explanations and helps a lot. I feel educated, my knowledge has increased regarding reproductive health and maintaining my reproductive health'
(RN, 18 years old SMA)

2. Programme Experience

The results of interviews with research informants revealed that in the implementation of this programme there were likes and dislikes by some informants:

'The material is fun because there are pictures and videos, but there is too much memorisation that I end up getting bored myself'
(NN, 12 years old junior high school)

'I like the material, the examples given are based on everyday life so it's easier to understand, but it's too formal which makes it boring'
(SR, 14 years old junior high school)

'I like the way the material is discussed, the material is fun and more open even though it is a little formal in the way it is explained'
(DN, 16 years old high school student)

However, the following opinions are slightly different, where these opinions are more likely to like the sexual education model provided. The following are the results of interviews with informants:

'I really like the material, the topics are interesting, like the way the material is delivered there are videos and pictures and directly applicable so it is easier to understand'
(PT, 18 years old high school student)

'I like the question and answer session at the end of the lesson, because I can immediately ask if there is something I don't understand, the teachers are also fun so the material is easy to understand'
(LN, 13 years old junior high school)

'the sexual learning method programme is very good, usually the teachers are always serious, but this teaching is more exciting and the topics are important and interesting, I really like it'
(KV, 16 years old high school)

3. Access and Engagement

The results of interviews with informants revealed that access to the sexual learning model programme is only easily accessible in the school environment, demographic factors that cause the lack of internet networks, lack of family support, and other additional sources of information are obstacles to this programme. The following are the results of interviews with informants:

'Because I live in a village, it is difficult to get internet, so I can only get this programme at school'
(ST, 13 years old junior high school)

'This programme is only developed at school, I am embarrassed to ask directly, so if I look for the same information outside of school, I don't get the same information'
(MY, 15 years old junior high school student)

'I can only access information at school because at home it is difficult to talk to my parents because they don't have time'
(DW, 16 years old high school student)

From the results of interviews with informants, it can be concluded that information related to the sexual learning methods programme is only obtained at school. However, there are some informants who provide slightly different information where they not only get it at school but online consultations with teachers can be done outside of school hours and it is not uncommon for parents to help explain to informants. The following are the

results of interviews with informants:

'I can get information related to the sexual learning methods programme not only at school, if I don't understand I sometimes contact the teacher to ask'
(RT, 16 years old high school)

'Mum sometimes gives information too, especially if I ask more questions, mum often explains but the language is less like if the teacher explains'
(DN, 18 years old senior high school)

'This programme is usually given at school, but when I go home, I often ask my brother and mother too'
(AD, 12 years old junior high school)

b. Interview with Educators

1. Implementation and Curriculum

Some informants revealed that the sexuality education curriculum is very helpful in opening up students' understanding of reproductive health. However, it is inseparable from the challenges encountered when conveying information or topics that are sensitive in nature, other challenges are limited time and resources. The following are the results of interviews with informants:

'In my opinion, the curriculum provided is very important and quite effective, especially because reproductive health topics are integrated with biology subjects. However, the biggest challenge is the discomfort of some students when discussing sensitive topics. It is not uncommon for there to be rejection from parents'
(RN, 45 years old Biology Teacher and Facilitator)

'This curriculum is very helpful in opening students' understanding about reproductive health. I also see that students are starting to be more aware of maintaining health and the consequences of sexual decisions.'
(DD, 39 years old PE Teacher and Facilitator)

This statement was also emphasised by the Principal informant who revealed that this curriculum is very effective, this is because the curriculum does not only focus on the biological aspect, although it cannot be denied that the challenges of curriculum implementation must exist. The following are the results of interviews with informants:

'I think this curriculum is quite effective, especially because it focuses not only on biological aspects, but also social and psychological aspects. This helps students to understand reproductive health more holistically. The biggest challenge of implementing this curriculum is the limited resources and time. We from the school still need to develop more creative and interactive methods to attract students' attention, as well as overcome the stigma that exists in society related to sexual education.'
(MY, 50 years old high school principal)

2. Training and Support

Based on the results of interviews with informants related to training and support in delivering sexual material, it is revealed that this training is very useful, especially in increasing students' insight in dealing with problems and issues related to reproductive

health. As for some of the expected support, the informants explained that the expected support from this curriculum is access to more material, support in the form of clear policies from the government and the education office is very important, more enrichment programmes or training, integrated material with religious values and case studies that can be developed in the classroom. The following are the results of interviews with informants:

‘As a counselling teacher, this training is very useful, especially in giving me insight on how to deal with students who may be facing reproductive health issues personally. The training helped me better understand how to approach students in a thoughtful and empathetic way. The support that I really need is access to more materials on real cases and strategies to provide appropriate advice for students who need further assistance.’

(RT, 38 years old junior high school counselling teacher)

‘As a religious teacher, I feel this training is important because it provides insights on how to align reproductive health education with the moral and religious values that I teach. The support that I really hope for is materials that are more integrated with religious values will be very helpful, apart from that collaboration with local religious leaders is also important to provide a broad perspective for students.’

(JK, 45 years old Religion Teacher)

This statement was confirmed by the deputy principal for student affairs at the junior high school and the principal of the senior high school. The following is the informant's statement:

‘This training has actually strengthened my ability to manage programmes related to reproductive health and sexual education at the student level. I am now able to design extracurricular programmes that suit the needs of our school youth. In supporting this programme we really need more enrichment programmes or additional training for other teachers so that they can also contribute actively in sexual education outside the main subjects.’

(MY, 34 years old Vice Principal of Student Affairs of junior high school)

‘as a principal, I really appreciate this training because it can provide guidance on how to ensure that the sexual education programme we implement at school is really relevant and effective. In the sustainability of this programme, we need support in the form of greater policies from the government and the education office.’

(DD, 42 years old high school principal)

3. Feedback and Improvement

The results of interviews with informants can be concluded that during the implementation of this programme students gave positive feedback, students found the programme useful, and interesting. The following are the results of interviews with several informants:

‘My students gave positive feedback, especially regarding the reproductive health material. They feel that topics that were previously considered taboo, but with this sexual education, they are more open to asking questions and discussing.’

(ST, 36 years old high school biology teacher)

‘Most of the adolescent participants felt that this programme really helped them understand better about reproductive health’
(RZ, 40 years old Health Education Facilitator)

‘students generally find the programme interesting, especially when discussing topics that are directly related to their daily lives’
(BD, 44 years old Junior High School Physical Education Teacher)

‘the students really liked the topics raised, especially when they were given the opportunity to talk about their personal experiences in maintaining reproductive health’
(FT, 29 years old Reproductive Health Extracurricular Facilitator, Senior High School)

The above explanation can be concluded that this programme really helps students to be more open and cooperative with themselves. However, this programme still needs to be improved, following the results of interviews with informants:

‘to develop this programme I plan to involve students more often in group discussions so that they are more comfortable talking about topics that they may find sensitive’
(ST, 36 years old Biology Teacher, Senior High School)

‘to develop this programme in the future I will add more interactive activities such as educational games or role plays that make them more involved and not bored’
(RZ, 40 years old Health Education Facilitator)

‘To make this programme more interesting, I will add a special session that discusses more about infectious diseases, and increase the duration of the discussion so that students have more time to ask questions. In addition, there needs to be periodic evaluations to ensure students really understand the material’
(NR, 33 years old Coordinator. Puskesmas Programme)

c. Focus Group Discussion

1. FGD Results from Students

a) Perceptions about sexual education integrated with reproductive health

- 1) Openness and comfort: Most students feel that sexual education integrated with reproductive health helps them become more open to issues that were previously considered taboo. They feel more comfortable talking about matters related to reproductive health in the school environment.
- 2) Increased knowledge: students acknowledged that the programme provided more in-depth and holistic information about reproductive health, including how to maintain hygiene and prevent the risk of pregnancy and sexually transmitted infections (STIs).

b) Challenges in Participating in the Programme

- 1) Comprehension constraints: some students stated that the language and some of the material presented was sometimes too technical, making it a little difficult to understand.

- 2) Access to Information: although the programme was established at school, some students felt that access to additional information outside the classroom was limited, especially in rural areas.

c) Expectations and Suggestions

More Discussion and Practice: students wish there were more group discussion activities and hands-on practice that could help them understand the material better.

2. FGD Results from Teachers and Facilitators

a) View on Curriculum Effectiveness

Positive but Needs Improvement: Teachers and facilitators generally perceive the integrated education model as very useful, but there needs to be more contextualisation of the curriculum with local socio-cultural conditions.

b) Challenges in Implementation

- 1) Training constraints: facilitators noted that although they had received training, the duration and depth of the training was not sufficient to overcome the challenges in the field, especially regarding how to deliver sensitive materials in an appropriate manner.
- 2) Limited Facilities and Infrastructure: teachers from rural areas stated that the lack of supporting facilities such as articles and interactive learning media was a major obstacle in implementing the programme.

c) Expectations and Improvements

- 1) Enrichment of Learning Materials and Media: teachers and facilitators expect more interactive and contextualised learning materials and media, as well as further training to improve their capacity in teaching.
- 2) A More Collaborative Approach: teachers and facilitators suggested that the sexual education programme should involve more parties, including parents and the community, for greater impact.

Discussion

1. Knowledge and Understanding

Comprehensive sexual education plays an important role in shaping adolescents' knowledge and understanding of reproductive health. According to Piaget's (1970) theory of constructivism, knowledge develops gradually through interaction with the environment, where individuals build understanding based on their experiences. In the context of reproductive health, adolescents obtain information from various sources such as family, friends, and school. However, without clear guidance, this information is often incomplete or incorrect (Mbizvo et al., 2023).

This constructivism theory is relevant to understand the development of adolescent reproductive health knowledge. Based on the results of the sexual education model research, the majority of respondents get information from friends, the internet, and school, but often the information is not in-depth and confusing, causing confusion. After being provided with a comprehensive sexual education model, there was a significant increase in their knowledge and understanding. This shows that structured and continuous education helps

adolescents build a clearer understanding, in accordance with the principles of constructivism.

Research by (Yohanna et al., 2023). Also found that an interactive and sustainable sexual education model can increase students' knowledge and change their attitudes towards reproductive health, while increasing awareness about the importance of maintaining reproductive health. In addition, this interactive approach allows students to more actively participate in discussions, ask questions, and gain a deeper understanding of topics previously considered taboo. Through continuous knowledge development, students can also develop practical skills in wiser decision-making, effective communication, as well as a broader understanding of the consequences of their actions on reproductive health. This proves that a sustainable model not only focuses on improving knowledge, but also contributes to more positive and responsible behavioural changes in daily life.

2. Programme Experience

A comprehensive sexual education programme focuses not only on the delivery of materials, but also the learning experience of learners (Vanwesenbeeck, 2020). Based on social constructivism learning theory, effective learning involves social interaction, where learners actively participate in activities that are relevant to their daily lives, making learning more meaningful. Relevant and interesting learning can strengthen understanding and facilitate the application of knowledge in real life (Noorman et al., 2023).

In this study, respondents revealed that they appreciated that it was presented in an interactive way such as the use of pictures and videos, as well as examples relevant to daily life. This is in line with the research conducted by (Navarro-Prado et al., 2023), which showed that sexual education materials delivered visually and interactively can increase learners' interest and engagement, and help their understanding of reproductive health concepts.

The results of this study also found some respondents' statements expressing dissatisfaction related to excessive formality in the delivery of material and the obligation to memorise too much information. Excess formality in the delivery of material tends to reduce students' enthusiasm and motivation to learn. Some respondents felt that this approach made the material less interesting and difficult to understand, so they were more likely to be passive in attending lessons. In addition, the overly rigid delivery is also considered to limit interaction and discussion between students and teachers, which could have improved understanding and active engagement in the learning process.

This statement is in line with the findings of (Castleton et al., 2024), which show that an overly rigid approach in sexual education can limit students' active participation, causing them to feel bored and less engaged in the learning process. This inflexible approach has the potential to hinder students' understanding of the material and reduce the effectiveness of sexual education programs. Therefore, it is important to apply more dynamic and interactive methods so that students can be more involved and understand the material well, so that the objectives of the sexual education program can be achieved optimally.

3. Access and Engagement

Accessibility and engagement in sexual education programmes are strongly influenced by various factors, including the availability of information sources and support

from social environments, such as family and school (Chavula et al., 2022). The development of individuals, including adolescents, is influenced by their interactions with various environments that surround them, ranging from microsystems (family, friends, school) to macrosystems (social and cultural policies). In the context of sexual education, access to information is not only determined by schools as formal educational institutions, but also by external environmental support such as family and additional sources of information such as the internet. (Yohanna et al., 2023).

Based on the results, the main access to sexual education programmes occurs within the school environment. This research shows that schools are the main source of sexual education for adolescents, especially in areas where access to the internet and other sources of information is limited. Some interviews revealed that demographic factors, such as residential location and limited internet access, were barriers to accessing further information outside the school environment. Lack of family support was also a barrier for some informants. Many teenagers feel embarrassed or reluctant to discuss reproductive health topics with their families.

Based on research conducted by (Noorman et al., 2023), although families can play an important role in supporting sexual education, many parents feel uncomfortable or do not have time to discuss the topic with their children, so the role of schools becomes more dominant in providing information. This limitation is often due to parents' lack of knowledge or self-confidence in explaining sensitive issues. In addition, some parents are also concerned about the impact of such discussions on their children's behaviour, so they tend to avoid open discussions. In this context, schools have a greater responsibility to ensure that students get accurate and comprehensive information on reproductive health. Therefore, sexual education programmes in schools should be designed thoroughly and effectively to fill the role vacancies that may be left by families, ensuring that adolescents continue to gain adequate knowledge to make wise decisions regarding their reproductive health.

4. Implementation and Curriculum

The sexual education curriculum has an important role in improving students' understanding of reproductive health. A related theory to sexual education is Albert Bandura's social cognitive theory which is further developed in the context of sexual education. Based on this theory, individual behaviour is influenced by the interaction between personal factors (understanding and beliefs), environmental factors (social support and media), and behaviour. This theory emphasises the importance of observation, interaction and direct experience in the learning process of reproductive health (Mbizvo et al., 2023).

Based on the results of the research, the informants stated that the curricula model of sexual education in adolescents helps to open students' understanding of reproductive health, especially because the topic can be integrated not only in biology subjects. But in physical education, religion and other subjects. There are several challenges in implementing this programme, namely when topics that are considered sensitive arise. Sexual education often encounters obstacles, especially in terms of cultural and social norms, which often consider discussions about reproductive health to be taboo. The

discussion of reproductive health also often creates discomfort among students and sometimes rejection from parents.

(Niland et al., 2024) research reveals that sexual education in various countries is often hampered by conservative views that make this topic difficult to be widely accepted, thus reducing the effectiveness of the programme. These conservative views often create barriers in designing a more open and comprehensive curriculum, as topics such as reproductive health, sexuality and interpersonal relationships are considered taboo to discuss in educational settings. As a result, sexual education programmes are often limited to basic information and lack depth, which is not enough to equip adolescents with the necessary knowledge and skills. Furthermore, social rejection of sexual education can affect student participation and support from parents and communities, further reducing the impact of such programmes in shaping healthy and responsible sexual behaviour..

5. Training and Support

The training provided to educators on sexual education materials has a significant impact in improving their ability to deliver sensitive topics wisely and effectively. Based on the research results, teachers and facilitators felt the direct benefits of the training, especially in providing insights related to reproductive health issues that are often faced by students. Teachers who received the training tended to be more prepared to provide interactive and contextualised education, according to the needs of students. They also feel more confident in discussing sensitive topics, thus creating a more open and supportive learning environment. In addition, the training helps teachers develop more innovative teaching methods, enabling them to deliver materials in a way that is interesting and relevant to adolescents. As a result, students became more engaged in the learning process, improving their understanding of reproductive health and reducing the awkwardness or stigma that often accompanies discussions on this topic (Lehtonen et al., 2024).

However, apart from the training provided, support for the development of effective sexual education programmes in schools is also very important. Research by (Leung et al., 2019). Revealed that greater policy support from the government is essential to ensure the sustainability of the programme. Supportive policies not only include the allocation of adequate resources but also create a conducive environment for schools to implement comprehensive sexual education without social or political pressure. With government support, these programmes can be developed and adapted to local needs, and receive better oversight to ensure quality and effectiveness. In addition, strong policies also help protect schools from potential community resistance, allowing sexual education programmes to be implemented sustainably and consistently across all levels of education..

6. Feedback and Improvement

(Ayo Amen Ediae et al., 2024) User Response Theory emphasises that feedback from learners is a key element in evaluating the effectiveness of educational programmes. Such feedback is not only an indicator of programme success, but also serves as a guide to identify areas that require improvement in the future. By listening to and analysing learner responses, educators and programme developers can make more appropriate adjustments, so that educational programmes can continue to evolve and be more effective in achieving their goals.

The results showed that the sexual education programme in schools received positive feedback from students. Informants in the study felt that the programme was beneficial, especially in addressing topics that were previously considered taboo, such as reproductive health. They stated that the programme helped improve their understanding of important issues related to sexual and reproductive health, which were previously rarely discussed openly. In addition, students feel more comfortable and confident to ask questions and discuss problems they face, so the programme not only provides information, but also creates a safe space for adolescents to share experiences and get relevant solutions. Although students responded positively, some improvements in materials and techniques were identified to be improved from the results of this study. Students suggested increased interaction, for example through group discussions and more interactive activities, such as role plays or educational games.

Collaborative learning theory by (Ayo Amen Ediae et al., 2024) reveals that interactive methods involving collaboration can increase student understanding and engagement, making sensitive topics such as reproductive health easier to accept. With this approach, students are invited to work together, discuss and exchange views, which helps them understand the material more deeply and reduce awkwardness or taboo towards the topic. In addition, collaboration also encourages students to actively participate, increases the sense of responsibility in learning, and strengthens peer support in the learning process, which ultimately creates a more open and inclusive environment to discuss reproductive health.

Conclusion

The comprehensive sexual education programme significantly improved students' knowledge and understanding of reproductive health, with positive feedback from learners regarding the relevance of the material to their lives. Nonetheless, the programme still requires development, especially in terms of more engaging interactions and activities. Clear policy support, continuous training for teachers, and integration of materials with religious values are also expected to strengthen the implementation of this programme in the future

References

Ayo Amen Ediae, Chidinma Favour Chikwe, & Kevin Namiro Kuteesa. (2024). Empowering youth through sexuality and leadership education: Approaches and outcomes. *World Journal of Advanced Research and Reviews*, 22(1), 1250–1265. <https://doi.org/10.30574/wjarr.2024.22.1.1214>

Castleton, P., Meherali, S., Memon, Z., & Lassi, Z. S. (2024). Understanding the contents and gaps in sexual and reproductive health toolkits designed for adolescence and young adults: A scoping review. *Sexual Medicine Reviews*, 12(3), 387–400. <https://doi.org/10.1093/sxmrev/qeae032>

Chavula, M. P., Zulu, J. M., & Hurtig, A.-K. (2022). Factors influencing the integration of comprehensive sexuality education into educational systems in low- and middle-income countries: A systematic review. *Reproductive Health*, 19(1), 196. <https://doi.org/10.1186/s12978-022-01504-9>

Grant, J. S., Chico, R. M., Lee, A. C., Low, N., Medina-Marino, A., Molina, R. L., Morroni, C., Ramogola-Masire, D., Stafylis, C., Tang, W., Vallely, A. J., Wynn, A., Yeganeh, N., & Klausner, J. D. (2020). Sexually Transmitted Infections in Pregnancy: A

Narrative Review of the Global Research Gaps, Challenges, and Opportunities. *Sexually Transmitted Diseases*, 47(12), 779–789. <https://doi.org/10.1097/OLQ.0000000000001258>

Janighorban, M., Boroumandfar, Z., Pourkazemi, R., & Mostafavi, F. (2022). Barriers to vulnerable adolescent girls' access to sexual and reproductive health. *BMC Public Health*, 22(1), 2212. <https://doi.org/10.1186/s12889-022-14687-4>

Lehtonen, J., Puutio, E., Pihkala, S., & Huuki, T. (2024). Navigating with pre-teenage children for sexuality education. *Sex Education*, 24(5), 602–616. <https://doi.org/10.1080/14681811.2023.2237428>

Leung, H., Shek, D. T. L., Leung, E., & Shek, E. Y. W. (2019). Development of Contextually-relevant Sexuality Education: Lessons from a Comprehensive Review of Adolescent Sexuality Education Across Cultures. *International Journal of Environmental Research and Public Health*, 16(4), 621. <https://doi.org/10.3390/ijerph16040621>

Mbizvo, M. T., Kasonda, K., Muntalima, N.-C., Rosen, J. G., Inambwae, S., Namukonda, E. S., Mungoni, R., Okpara, N., Phiri, C., Chelwa, N., & Kangale, C. (2023). Comprehensive sexuality education linked to sexual and reproductive health services reduces early and unintended pregnancies among in-school adolescent girls in Zambia. *BMC Public Health*, 23(1), 348. <https://doi.org/10.1186/s12889-023-15023-0>

Navarro-Prado, S., Tovar-Gálvez, M. I., Sánchez-Ojeda, M. A., Luque-Vara, T., Fernández-Gómez, E., Martín-Salvador, A., & Marín-Jiménez, A. E. (2023). Type of Sex Education in Childhood and Adolescence: Influence on Young People's Sexual Experimentation, Risk and Satisfaction: The Necessity of Establishing School Nursing as a Pillar. *Healthcare*, 11(12), 1668. <https://doi.org/10.3390/healthcare11121668>

Niland, R., Flinn, C., & Nearchou, F. (2024). Assessing the role of school-based sex education in sexual health behaviours: A systematic review. *Cogent Psychology*, 11(1), 2309752. <https://doi.org/10.1080/23311908.2024.2309752>

Noorman, M. A. J., Den Daas, C., & De Wit, J. B. F. (2023). How Parents' Ideals are Offset by Uncertainty and Fears: A Systematic Review of the Experiences of European Parents regarding the Sexual Education of Their Children. *The Journal of Sex Research*, 60(7), 1034–1044. <https://doi.org/10.1080/00224499.2022.2064414>

Purba, N. S. P., & Sukhita, Y. A. (2023). Penyuluhan Pendidikan Seksualitas dan Gaya Berpacaran Sehat pada Remaja. *Jurnal Pengabdian Dan Kewirausahaan*, 7(2). <https://doi.org/10.30813/jpk.v7i2.4773>

Vanwesenbeeck, I. (2020). Comprehensive Sexuality Education. In I. Vanwesenbeeck, *Oxford Research Encyclopedia of Global Public Health*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190632366.013.205>

Villalobos, A., Estrada, F., Hubert, C., Torres-Ibarra, L., Rodríguez, A., Romero, I., Schiavon, R., & Campero, L. (2023). Sexual and reproductive health among adolescents in vulnerable contexts in Mexico: Needs, knowledge, and rights. *PLOS Global Public Health*, 3(11), e0002396. <https://doi.org/10.1371/journal.pgph.0002396>

Yohanna, W., Agbaje, O. S., Ene, O. C., Ofili, P. C., & Umoke, P. I. C. (2023). Effects of a sexuality education programme on young people’s STI/HIV knowledge, attitudes and risk behaviour in Northeast Nigeria. *Health Education Journal*, 82(1), 54–67. <https://doi.org/10.1177/00178969221139815>