JPRM
Journal of Preventive and Rehabilitative Medicine

ISSN: 2415-038X (Print)

2023; 5(2): 115-126
PublishedOnline:08/11/2023
(https://journals.unza.zm/index.php/medicine/about)
DOI: https://doi.org/10.21617/jprm20232.5214

ORIGINAL ARTICLE Open Access

Empowering Ideal Peer Educators: Insights from Adolescent Reproductive Health Programs in Zambia

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Abstract

To cite: Munalula-Nkandu E, Chiluba BC, Munalula MM., Kapp K. Empowering Ideal Peer Educators: Insights from Adolescent Reproductive Health Programs in Zambia. JPRM 2023, 5(2): 115-126. doi: https://doi.org/10.21617/jprm20232.5214

Background: Peer education is crucial for youth, employing relatable educators to drive behavioral change and disseminate information, particularly in adolescent reproductive health. These educators' approachability and credibility stand in contrast to intimidating adult counterparts. Beyond knowledge, peer education's effectiveness stems from ongoing social interactions and role modeling. In Zambia, standardized adolescent reproductive health education for peer educators faces challenges. Some programs lack comprehensive assessments, leaving their impact uncertain. Essential peer educator attributes remain undefined, hindering program optimization, especially in addressing health threats like HIV/AIDS. This article delves into peer educators' roles, traits, transformative training effects, and influencing factors.

Methods: This study aimed to develop a robust research methodology rooted in the interpretive paradigm, utilizing Focus Group Discussions (FGDs) to explore adolescent reproductive health education and peer educator training. Stakeholder workshops, data validation, and verbatim reporting were employed to ensure data credibility. The research process involved three phases, focusing on stakeholders, adolescents, and program development.

Results: FGDs with trained peer educators revealed defining characteristics of ideal peer educators, emphasizing knowledge, communication skills, ethical behavior, and role modeling. The training program positively impacted peer educators, enhancing self-esteem, knowledge, and empowerment. Key factors influencing peer educators included comprehensive training, family support, and adherence to Christian values. Negative factors encompassed a lack of incentives, limited resources, and insufficient recognition. Peer educators in different regions reported significant personal growth and a deep commitment to their roles.

Conclusion: This study underscores the importance of ideal peer educators possessing knowledge, effective communication skills, ethical behavior, and a commitment to promoting positive behaviors. Continuous training, support, and recognition are essential for peer educators to address evolving challenges effectively. Peer education programs should prioritize these elements to empower peer educators and enhance their ability to address the complexities of adolescent reproductive health.

Keywords: *Peer education; Youth; Behavior change; Adolescent reproductive health; Role modeling*

JPRM
Journal of Preventive and Rehabilitative Medicine

Received: *12 October 2023* ***Accepted:*** *2 November 2023* ***Published:*** *8 November 2023*

INTRODUCTION

Peer education programs have gained prominence as effective channels for disseminating crucial information and fostering behavior change among young individuals. A peer educator is defined as an individual who possesses specific characteristics, such as age and shared social identities, which make them relatable and credible to their peers [1,2,3]. These programs leverage the unique position of peer educators to serve as facilitators, counselors, information resources, support workers, or tutors.

The rationale for employing peer educators in various educational contexts, particularly in addressing sensitive topics such as adolescent reproductive health, rests on their perceived credibility, relatability, and effectiveness in reaching young audiences [4,5,6,7]. Young people often identify more readily with peer educators who share similar age, language, dress code, interests, and social affiliations. This identification tends to enhance the perceived credibility of peer educators as sources of information, even beyond the objective accuracy of the information they provide [8]. Moreover, young individuals may perceive peer educators as less intimidating than adult educators, fostering open communication and reducing embarrassment.

The impact of peer education can extend beyond knowledge dissemination, with evidence suggesting that it can have a longer-term and more widespread effect on target groups compared to other forms of education. This extended impact can be attributed to the ongoing social interactions that peer educators have with their target audience, allowing for continuous reinforcement of learning, additional opportunities for information dissemination, and the modeling of desired behaviors. Furthermore, peer education is often perceived as cost-effective due to lower remuneration requirements compared to adult educators, although addressing the motivational aspects of peer educators is essential [9].

Theoretical Models Applicable to Peer Education

Peer education, a vital tool in adolescent reproductive health initiatives, draws upon a rich foundation of psychological theories to elucidate its mechanisms and potential impact. While early iterations of peer education often relied on intuition and observation, contemporary approaches are firmly grounded in established theoretical principles [7].

Social Learning Theory: Bandura's [11] Social Learning Theory posits that individuals acquire behaviors through observation of others within their social groups. The influence of peers, particularly during adolescence, takes precedence over that of adults. The theory underscores the importance of modeling and highlights that behavior is influenced by the model's characteristics and the perceived consequences (reward or punishment). Thus, peer-led education, facilitated by individuals closely aligned with their peers, is likely to exert more influence than adult-led education.

Social Identity Theory: Rooted in the concept of in-group and out-group dynamics, the Social Identity Theory explores how individuals are more profoundly influenced by those with whom they share a common social identity. It emphasizes factors like frequency of contact with group members and modeling of desirable attitudes and behaviors. In peer education, this implies that peer educators who closely resemble the target group in key social and personal characteristics are more likely to be perceived as in-group members, thus enhancing their effectiveness [7].

Diffusion of Innovation Theory: This theory examines the dissemination of innovations through social networks, relying on perceptions of relative advantage, compatibility, complexity, trialability, and observability of the innovation. It suggests that new information and behavior spread as more individuals within a group discuss and adopt the innovation. Forceful peer educators, characterized by their charisma and role modeling, can play a pivotal role in influencing their peers [7].

Social Comparison Theory: People form beliefs by comparing themselves with others who share relevant characteristics. Adolescents, in particular, identify strongly with their peers. Those who closely resemble the target group can positively influence group norms and motivate peers to adopt safer attitudes and behaviors [7].

These theoretical frameworks, explored in the earlier sections, serve as a foundation for understanding peer education's dynamics and outcomes. They informed the study's design, methodology, and interpretation of focus group discussions and group interviews, providing essential context for the development of the training program and insights into the peer educators' perspectives.

In Zambia, a critical gap has existed in the realm of adolescent reproductive health education. Specifically, there is scarcity of a well-structured, locally contextualized training program that can serve as a guiding framework for the diverse adolescent reproductive health projects. These projects often engage peer educators as catalysts for disseminating crucial information and fostering behavioral changes among their peers. However, the current landscape lacks a standardized training program tailored to the specific needs of these projects [12]. Compounding this issue, none of the existing training programs have undergone comprehensive assessments to gauge their impact on the trained adolescents' health-related behaviors.

The vital question of whether these educational initiatives translate into tangible improvements in the health beliefs and behavioral patterns of the trained peer educators remains unanswered [13]. Furthermore, while numerous adolescents have received training to become peer educators, there has been a dearth of research dedicated to identifying the essential attributes and qualifications that define an ideal adolescent reproductive health peer educator. This knowledge gap represents a significant impediment to maximizing the efficacy of peer education programs, particularly in the context of the prevailing challenges posed by HIV and AIDS. Empowering young individuals with the knowledge and skills necessary to make informed decisions about their health is of paramount importance in the face of these health threats (UNAIDS) [14].

This article delves into the characteristics and roles of peer educators in the context of adolescent reproductive health education, exploring the transformative impact of their training and the factors that influence their effectiveness. By shedding light on these dimensions, we aim to enhance our understanding of the vital role peer educators play in promoting reproductive health among adolescents and identify areas for further support and improvement in peer education programs.

MATERIALS AND METHODS

Study design

Motivated by the quest for truth and guided by Mouton's paradigmatic framework (1996), this study aimed to design a robust research methodology that could effectively navigate the intricate dimensions of the social world. In this pursuit, the study primarily adhered to the interpretive paradigm, a choice deeply rooted in the nature of the research and its intended outcomes.

This study adopted a methodological paradigm centered on Focus Group Discussions (FGDs), a well-suited approach for eliciting in-depth information from participants. Given the exploratory nature of the research questions, which typically do not necessitate the formulation of hypotheses, qualitative data offered a robust avenue for both comprehensive insights and building rapport with research participants. Qualitative data collection, through FGDs, allowed for a rich exploration of the subject matter, fostering a deeper understanding of the context and experiences of the stakeholders involved. However, it's essential to acknowledge the inherent limitations of this paradigm, as highlighted by Mouton (2001:148). These limitations encompass the challenge of generalizing results, the non-standardization of measurements, and the time-consuming nature of data collection and analysis. Nevertheless, the study strategically mitigated some of these limitations by selecting a sample that could be considered representative of major provinces in the country, as the participating stakeholders implemented similar programs across various regions.

The study inherently recognized the need to explore both epistemological and sociological dimensions within the social context. These dimensions became the pivotal facets through which the research objectives and questions were meticulously examined. The exploratory nature of the study aligned seamlessly with the interpretive paradigm. The study did not propose hypotheses, a standard practice in qualitative research, as it sought to delve into the intricacies of adolescent reproductive health education and peer educator training. The formulation of research questions rested with the researcher, signifying the qualitative orientation of the study. This approach enabled the study to delve deeply into the nuances of the subject matter.

Data Collection

In pursuit of a robust research methodology, a three-day data collection workshop brought together stakeholders crucial to this study. These stakeholders were invited to showcase their training programs, fostering collaborative assessment and document sharing. The workshop's objectives were reiterated at its commencement, emphasizing the research's consent-based nature, as previously communicated in invitation letters. The study's objectives were presented, underlining confidentiality assurances and clarifying that individual contributions would remain confidential while the final document would be made accessible to all stakeholders. Each organization presented its training program, followed by an open discussion to encourage questions, contributions, and insights from participants. This collective dialogue facilitated a comprehensive evaluation of each program, identifying strengths and potential areas for improvement.

To maintain precision in recording discussions, two research assistants meticulously documented all interactions. This dual-approach served to validate information accuracy, ensuring consistency with the workshop program. While

initial planning anticipated access to all training program documents beforehand, this assumption was challenged, as many stakeholders provided these documents only during the workshop. In line with qualitative research practices recommended by experts, the researcher assumed the role of a facilitator during the data collection workshop. This approach aligned with the established norm that stakeholders play an active role in data collection, analysis, and generating recommendations based on interpretation. At the end of each day, a brief review session was conducted to validate the collected information, enhancing data reliability.

Upon completion of training program presentations, the researcher, in tandem with research assistants, synthesized a draft training program that integrated key components from all programs. Participants were then invited to review and assess this draft, determining its suitability for peer educator training needs. Participants were organized into groups, each with a designated chairperson, to discuss and present group outcomes. Subsequent presentations merged comments, modifications, and recommendations.

The initial phases of the workshop focused on program presentations and Question & Answer (Q&A) sessions, while later stages delved into group interviews with stakeholders. These efforts collectively culminated in the creation of a generic training program. A preliminary summary of the training program was presented on the second afternoon. Following additional group discussions, a final document was collaboratively developed and deemed satisfactory by all three groups.

All participating stakeholders, representing various organizations, were based in Lusaka, Zambia. These organizations included:

- Adolescent Reproductive Health Project/UNFPA/Ministry of Health
- CARE International
- World Vision International
- Young Women's Christian Association
- Young Men's Christian Association
- Kabwata Home-Based Care (A Catholic adolescent reproductive health project)
- Family Life Movement
- Family Health Trust
- United Nations High Commission for Refugees

in each. The gender distribution of the participants is shown in Table 1.

Data Analysis

In this study, a meticulous approach to data analysis was employed to comprehensively address the research questions and derive valuable insights from the participants. The data collection process during the FGDs was structured around specific questions and topics. During the initial phase of data analysis, the researchers actively noted the emergence of various themes and factors as articulated by the participants during the FGDs. This method allowed for the systematic and spontaneous capture of information, ensuring that all pertinent aspects of the research questions were thoroughly explored. A contextual analysis approach was adopted. This involved a close examination of the words, topics, and phrases that participants expressed a desire to either include or exclude from the program. This meticulous scrutiny of participant input aimed to refine the training program and tailor it to the specific needs and preferences of the stakeholders. By employing a rigorous data analysis methodology, this study ensured that the resulting training program was not only grounded in the insights and preferences of the participants but also aligned with the overarching research objectives.

RESULTS

In the second phase of our program development, we conducted FGDs with trained adolescent reproductive health peer educators. These discussions were held at various locations in Zambia, involving peer educators from different organizations. FGDs were conducted in English, with one exception where an interpreter was used. A total of four FGDs took place, with ten peer educators participating

Table 1: Gender Distribution of Participants in FGDs

FGD No.	STAKEHOLDER	MALE	FEMALE	TOTAL
LUSAKA	YWCA	2	3	5
	YMCA	2	-	2
	KABWATA HOME-BASED CARE	2	2	4
	FAMILY HEALTH TRUST	2	2	4
	FAMILY LIFE MOVEMENT	2	-	2
	PPAZ	5	5	10
LIVINGSTONE	LIBUYU SKILLS' CENTRE	4	2	6
KAFUE	KAFUE DHMT	6	4	10
MAHEBA	MAHEBA REFUGEE CAMP	5	5	10

Characteristics of an Ideal Peer Educator

Peer educators expressed a range of characteristics that, collectively, define an ideal peer educator. These characteristics were identified across various regions and FGDs:

Recommended Outward Traits

Ideal peer educators were described as knowledgeable, assertive, proficient in English and other languages, intelligent, practicing Christians, smartly dressed, non-drinkers, non-smokers, drug-free, and well-informed beyond HIV/AIDS. They were also expected to be role models, approachable, friendly, and capable of providing reliable information.

Role Model

Participants emphasized the importance of peer educators serving as role models within their communities. They believed that peer educators should exemplify positive behaviors, fostering behavioral change among their peers.

Knowledgeable

Peer educators were expected to possess extensive knowledge, particularly beyond HIV/AIDS, and have undergone rigorous training to provide accurate and valuable information to their communities.

Training and Managerial Skills

In addition to their reproductive health knowledge, peer educators were encouraged to be good timekeepers, trainers of others, and equipped with managerial skills.

Communication Skills

Effective communication was a key trait, encompassing fluency in English and other languages, enabling peer educators to connect with diverse audiences.

Lifestyle Behavior

Peer educators were anticipated to maintain healthy lifestyle behaviors and refrain from judgment. They were expected to exhibit trustworthiness, respect, and ethical conduct.

Ethical Behavior

Confidentiality, honesty, and integrity were highlighted as crucial ethical behaviors that peer educators should uphold.

Impact of Peer Education on Trained Peer Educators

The training program for peer educators had a notable positive impact on their lives:

It improved their self-esteem, self-image, and lifestyle choices.

Peer educators felt better equipped to educate others about HIV/AIDS and reproductive health.

Peer educators, however, voiced the need for further empowerment, support, and recognition for their invaluable work.

Factors Contributing Positively and Negatively

Several factors were identified that contributed either positively or negatively to the development of an ideal peer educator:

Positive Factors

Positive factors included appropriate training, Christian beliefs, and support from family.

Negative Factors

Negative factors encompassed the absence of incentives, certificates, resources, transportation, and limited opportunities for leadership roles within the peer education program.

Table 2: Factors that have a negative impact on the development of an ideal peer educator

Factor Type	Specific Factors
LEADERSHIP AND MANAGEMENT	• Lack of incentives
	• Lack of identifiers as peer educators
	• Lack of networking with other peer educators
	• Lack of preparation of peer educators for the future
	• Lack of adequate support
	• Lack of communication facilities
	• Lack of encouragement from management
	• Peer educators not given enough time to practice what they have learned
	• Lack of transport
	• Lack of resources
TRAINING PROGRAMME	• Training period too short and content not sufficient
	• Not given enough time to practice new skills
	• No certificates
	• Inadequate knowledge
	• No resource center
ROLE AS PEER EDUCATORS	• Training and counseling persons who are much older or much younger
	• Peer educators not given opportunity to take on leadership roles
COMMUNITY	• Lack of teaching materials to use in community
	• Need to learn more approaches to use in community

Impact of Peer Education

Peer educators in Livingstone reported significant transformations in their lives as a result of their training. One participant mentioned transitioning from a commercial sex worker to a peer educator, highlighting the profound impact of the program on her lifestyle.

Peer educators emphasized that they now possess comprehensive knowledge about HIV/AIDS and are actively engaged in educating others in their communities about the disease. They have become the to-go-to resources for HIV/AIDS-related inquiries. The training equipped peer educators with essential knowledge about sexually transmitted infections (STIs), empowering them to take measures to protect their own health and extend this knowledge to others. Peer educators expressed increased awareness of the potential dangers associated with risky behaviors, underscoring the training's effectiveness in promoting informed decision-making. The peer educators found value in the training as it taught them not only about sexual health but also about maintaining a healthy lifestyle. They emphasized the importance of abstinence and, for those unable to afford condoms, safe sex practices.

Maheba and Kafue peer educators reported improved assertiveness, self-esteem, and self-image as a direct result of their training. Peer educators recognized the need for continuous training and empowerment to address the evolving challenges in their communities.

Factors Contributing Positively:

Appropriate training, including workshops, was considered a key factor in developing ideal peer educators. Participants noted that coming from a supportive family and having a Christian background were additional factors contributing positively to the development of ideal peer educators.

Factors with Negative Impact:

Leadership and management-related factors posed significant challenges to peer educators. These included the lack of incentives, financial support, identification as peer educators, networking opportunities, future preparation, support, communication facilities, and encouragement from management. Peer educators also faced difficulties related to transportation, resources, and time constraints. Lack of certificates to validate their training and lack of recognition were noted as demotivating factors. The participants expressed a desire for more opportunities to take on leadership roles. Peer educators reported challenges in accessing teaching materials for community outreach. Some peer educators experienced teasing and criticism from communities for their volunteer work without pay.

Training Program-Related Factors:

Peer educators had mixed feelings about the sufficiency of their training. While some found the knowledge adequate, others believed there was room for improvement. Concerns were raised about the short duration of training, insufficient content coverage, and lack of practice time. The absence of certificates and inadequate knowledge were identified as shortcomings of the training program. Participants emphasized the need for separate training sessions for different age groups to address cultural beliefs and taboos effectively. Peer educators called for greater transparency and clarity in the training curriculum. Overall, peer educators advocated for continuous training and development opportunities. Figure 1 shows the knowledge versus skills in sexuality education and the value system.

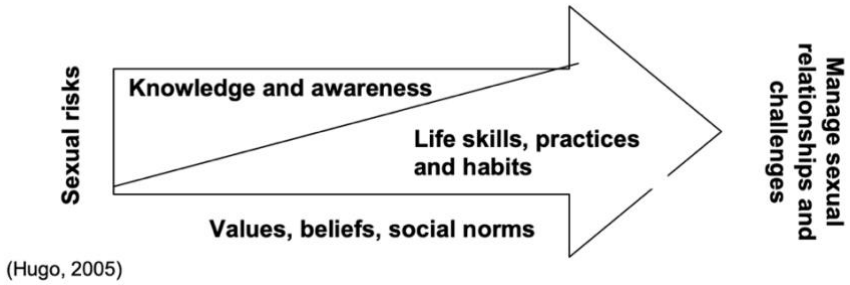

Figure 1: Knowledge versus skills in sexuality education

Role-Related Factors:

Peer educators across all study sites expressed dissatisfaction with the lack of support from management and the scarcity of teaching materials for use in their respective communities. In some study sites, peer educators lamented the apparent lack of understanding from management regarding their roles and contributions. They noted that donations meant for them, such as computers, were diverted elsewhere, limiting their access to vital resources. Furthermore, they highlighted a significant deficiency in information sources and networking opportunities, hindering their ability to stay updated and collaborate with peer educators from other regions. Participants unanimously recognized the need for a continuous flow of information, particularly as HIV-related knowledge constantly evolves. The challenge of counseling individuals who were significantly older than the peer educators themselves was raised, underscoring the necessity for comprehensive training. Peer educators also expressed a desire for more time to practice their skills before embarking on community outreach activities.

Community-Related Factors:

Peer educators faced numerous challenges at the community level, which could potentially impact their self-esteem and self-worth. In Lusaka and Maheba, peer educators reported instances of ridicule and mockery from community members who questioned their commitment to voluntary work. However, these challenges did not deter their dedication to their roles as peer educators. They remained passionate about their mission and the positive impact of their training. When asked about their plans for community development, peer educators expressed a desire for resources to organize workshops and engage with youth effectively. They emphasized the importance of engaging parents in discussions about HIV/AIDS. Overall, despite the hurdles faced, the peer educators displayed unwavering commitment to their roles as educators, driven by their belief in the importance of peer education.

DISCUSSION

In the second phase of our program development, we conducted FGDs with trained adolescent reproductive health peer educators. These discussions provided valuable insights into the characteristics of an ideal peer educator, the impact of peer education on trained peer educators, and the factors contributing positively and negatively to their development.

Peer educators from diverse regions and organizations converged on a set of defining characteristics that collectively delineate an ideal peer educator. These attributes encompassed both outward traits and inner qualities. Ideal peer educators were recommended to possess a comprehensive knowledge base, proficiency in communication, fluency in English and other languages, and intelligence. Additionally, they were expected to uphold Christian values, maintain a smart appearance, refrain from harmful behaviors such as drinking, smoking, and drug use, and possess in-depth knowledge beyond HIV/AIDS.

These findings align with previous studies highlighting the importance of knowledge and communication skills for effective peer education [15,16]. The emphasis on ethical behavior is consistent with research that underscores the significance of trust and integrity in peer-led interventions [17].

Role modeling emerged as a critical aspect of an ideal peer educator's role. These individuals were envisioned as living examples of positive behavior, serving as inspirations for behavioral change within their communities. Peer educators were expected to lead by example, exhibiting behaviors that promote reproductive health and overall well-being. Research by Adams and Turner (2016) supports the notion that peer educators who model positive behaviors have a greater impact on their peers. These role models often serve as catalysts for behavior change [18].

Knowledge was deemed a cornerstone trait, with peer educators expected to be well-versed in reproductive health topics, equipped with accurate information, and capable of answering inquiries effectively. Rigorous training was seen as essential to equip peer educators with the requisite knowledge and skills to educate their peers adequately. Previous studies have emphasized the importance of comprehensive training in peer education programs (Jansen et al., 2018; Brown & Smith, 2020). Training is recognized as a vital component in ensuring that peer educators are well-prepared to disseminate accurate information [19].

Beyond reproductive health knowledge, peer educators were encouraged to develop training and managerial skills. These skills would enable them to conduct workshops efficiently, manage their time effectively, and serve as trainers for others in their communities.

Effective communication was identified as a pivotal trait, transcending linguistic fluency to encompass the ability to convey information clearly, engage diverse audiences, and foster open dialogue. Peer educators were expected to bridge language barriers and connect with individuals

from various backgrounds, making them approachable and relatable sources of information. Research by Reichow and Volkmar [20] underscores the importance of effective communication skills in peer-led interventions. Peer educators who can engage their peers in meaningful conversations are more likely to facilitate behavior change.

Lifestyle behaviors played a significant role in the definition of an ideal peer educator. These individuals were anticipated to maintain healthy lifestyles; abstain from harmful habits, and prioritize their own well-being. Trustworthiness, respect, and ethical conduct were emphasized as essential traits, ensuring that peer educators upheld the highest standards of behavior and integrity. Confidentiality, honesty, and integrity were identified as fundamental ethical behaviors that peer educators should consistently uphold. These qualities were seen as paramount in building trust within their communities.

The training program for peer educators had a profound and positive impact on their lives. It served as a transformative experience, leading to improvements in self-esteem, self-image, and lifestyle choices. Peer educators expressed heightened confidence and an enhanced sense of self-worth as a direct consequence of their training. The program not only equipped them with knowledge but also instilled a newfound sense of purpose and responsibility. These findings align with previous research highlighting the positive impact of peer education on peer educators themselves [21,22]. Peer educators often experience personal growth and enhanced self-efficacy as a result of their training and educational efforts.

Peer educators emerged from their training with a comprehensive understanding of HIV/AIDS and reproductive health, empowering them to serve as valuable resources within their communities. They became the to-go-to individuals for HIV/AIDS-related inquiries, offering accurate information and guidance to their peers. The training also expanded their awareness of the potential dangers associated with risky behaviors, arming them with the knowledge needed to make informed decisions regarding their health and well-being. Peer educators became advocates for safe practices, emphasizing abstinence and the importance of safe sex.

However, peer educators expressed a desire for further empowerment, support, and recognition for their invaluable work. While their training had equipped them with the knowledge and skills needed to educate others, they emphasized the need for ongoing training to address the evolving challenges in their communities. Empowerment would enable them to extend their impact and create lasting change.

These findings corroborate the idea that continuous support and professional development are essential for peer educators to maintain their effectiveness [23, 24].

Several factors were identified that contributed either positively or negatively to the development of an ideal peer educator. Positive factors included appropriate training, Christian beliefs, and support from family. The significance of comprehensive training was underscored, as it provided peer educators with the knowledge and skills necessary for effective outreach and education. Peer educators who came from supportive families and held Christian beliefs found themselves better equipped to navigate the challenges of their roles. Research by Lucksted and others [25, 26] highlights the importance of family support in sustaining peer educators' commitment to their roles. Christian values can also serve as a foundation for ethical behavior and moral guidance.

Conversely, negative factors posed significant challenges to peer educators. These encompassed the absence of incentives, certificates, resources, transportation, and limited opportunities for leadership roles within the peer education program. Peer educators grappled with a lack of recognition and financial support, often shouldering the burden of transportation costs and resource limitations. The absence of certificates to validate their training left them feeling undervalued. Leadership and management-related factors emerged as key hurdles, including insufficient preparation, communication facilities, and support from program managers. Peer educators were frustrated by the dearth of encouragement and opportunities for leadership roles within the program.

These challenges resonate with findings from previous studies that highlight the need for adequate support, resources, and recognition for peer educators [17,22]. Access to teaching materials for community outreach remained a persistent challenge, hindering their effectiveness as educators. Some peer educators faced teasing and criticism from communities for their voluntary work without pay, adding to their sense of disillusionment.

Peer educators in Livingstone reported profound transformations in their lives as a result of their training. For one participant, the training marked a pivotal shift from a life as a commercial sex worker to that of a peer educator, highlighting the program's remarkable impact on her lifestyle and choices. Peer educators emerged from their training well-equipped to educate others about HIV/AIDS and reproductive health, and becoming trusted sources of information within their communities. Their knowledge extended beyond HIV/AIDS, enabling them to address broader reproductive health topics.

The training also empowered peer educators with the skills and confidence needed to provide guidance on sexually transmitted infections (STIs) and the importance of safe practices. Peer educators acknowledged the value of the training, emphasizing the importance of abstinence and safe sex, which they promoted among their peers as a fundamental aspect of preventing STIs and maintaining overall reproductive health. Their ability to communicate this critical information effectively played a pivotal role in raising awareness and fostering healthier behaviors within their communities.

LIMITATIONS

The study primarily focused on peer educators and stakeholders based in specific regions of Zambia. The findings may be a bit dated given the rapid changes among the youth and further may not be entirely representative of the diverse cultural, geographic, and sociodemographic contexts within the country. A more extensive and geographically diverse sample could have enhanced the study's generalizability. This research relied solely on qualitative data gathered through FGDs and stakeholder workshops. While qualitative methods offer in-depth insights, they do not provide quantitative data for statistical analysis. A mixed-methods approach could have added depth to the study by incorporating quantitative surveys or assessments. Participants in FGDs and workshops may have been influenced by social desirability bias, potentially leading them to provide responses that align with societal expectations or perceived norms. Despite efforts to maintain confidentiality, this bias could affect the accuracy of the data. The study predominantly included peer educators from Christian backgrounds, potentially neglecting the perspectives and experiences of individuals from other religious or cultural backgrounds. This limitation could impact the comprehensiveness of the findings, particularly regarding the influence of religious beliefs. Findings from this study may not be readily transferable to different cultural or national contexts. The effectiveness of peer education programs can vary significantly depending on the cultural, social, and economic factors of a given region.

The study's qualitative nature implies that data interpretation may have been influenced by the researchers' subjectivity and personal perspectives. Efforts were made to maintain neutrality, but some degree of researcher bias may still exist. Due to resource and time limitations, the study's scope was restricted to specific regions and a particular number of participants. A more extensive and comprehensive study involving a broader range of participants and regions could have provided a more comprehensive understanding of the subject. The study relied on participants' recall of their training experiences and perceptions. This recall bias could affect the accuracy of their accounts and may not fully represent the entirety of their training experiences. In light of these limitations, the findings of this study should be considered within the context of the specific regions and participants involved. Future research endeavors should aim to address these limitations by employing larger and more diverse samples, incorporating quantitative methods, and exploring a broader range of contexts to provide a more holistic understanding of peer education in adolescent reproductive health.

CONCLUSION

This study delved into the characteristics and roles of peer educators in the context of adolescent reproductive health education, explored the transformative impact of their training, and identified factors influencing their effectiveness. Ideal peer educators were found to possess comprehensive knowledge, effective communication skills, ethical behavior, and a commitment to promoting positive behaviors. They serve as role models, bridge language barriers, and maintain healthy lifestyles. The training program for peer educators had a profound and positive impact, improving self-esteem, self-image, and lifestyle choices. Peer educators emerged with comprehensive knowledge about HIV/AIDS and reproductive health, becoming trusted resources within their communities. However, challenges such as the lack of incentives, financial support, and resources, as well as limited opportunities for leadership roles, negatively affected peer educators. Addressing these challenges and providing ongoing training and support is crucial to empower peer educators and enhance their

ability to address the complexities of adolescent reproductive health effectively. This study highlights the pivotal role of peer educators in promoting reproductive health among adolescents. By understanding their characteristics, experiences, and the challenges they face, we can better support and improve peer education programs, ultimately contributing to positive behavioral changes and improved reproductive health outcomes among youths.

DECLARATION

Author contribution EMN conceived and designed the study. MMM collected data. EMN, MMM and BCC analysed and interpreted the results. KK supervised this work. All authors except KK drafted, had input in the manuscript and read and approved the final manuscript.

Competing interests There were no competing interests from all authors in this study.

REFERENCES

1. Gonzalez GM. Effects of a Theory-Based, Peer-Focused Drug Education Course. J Couns Dev. 1990;68(4):446-449.
2. Prendergast N, Miller S. Reducing the risk: The Juvenile Justice Peer-Oriented Approach. In: Conference Proceedings: Re-Shaping the Future: Drugs and Young People. Australian Drug Foundation; 1996:277-286.
3. Coggans N. What have we learned from drug education? In: Proceedings of the 8th International Conference on the Reduction of Drug Related Harm, Paris; 1997.
4. DiClemente RJ. Confronting the challenge of AIDS among adolescents: Directions for future research. J Adolesc Res. 1993;8:156-166.
5. Norman JAK. Peer Education: Promoting Healthy Behaviors. Peer Facilitator Quarterly. 1998;15(2):18-20.
6. Mason H. Peer Education: Promoting Healthy Behaviors. The Facts. Advocates for Youth; 2003.
7. McDonald J, Ashenden R, Grove J, Bodein H, Cormack S, Allsop S. Youth for youth: A project to develop skills and resources for peer education: Final Report. National Centre for Education and Training on Addiction (NCETA); 2000.
8. Harrison C. Wimmera Regional Alcohol Schools Peer Education Program Evaluation Report. Palm Lodge Centre; 1996.
9. Turner G, Shepherd J. A Method in Search of a Theory: Peer Education and Health Promotion. Health Educ Res. 1999;14(2):235-247.
10. Bond NW, McConkey KM. Psychological Science: An Introduction. McGraw Hill Book Company; 2001.
11. Bandura A. Social Learning Theory. Prince Hall; 1977.
12. Zulu JM, Blystad A, Haaland MES, Michelo C, Haukanes H, Moland KM. Why teach sexuality education in school? teacher discretion in implementing comprehensive sexuality education in rural Zambia. Int J Equity Health. 2019;18(1). doi:10.1186/s12939-019-1023-1.
13. Mulubwa C, Hurtig A, Zulu JM, Michelo C, Sand√∏y IF, Goicolea I. Can sexual health interventions make community-based health systems more responsive to adolescents? a realist informed study in rural Zambia. Reprod Health. 2020;17(1). doi:10.1186/s12978-019-0847-x.
14. Ergene T, √áok F, Tv⁰mer A, √únal S. A controlled-study of preventive effects of peer education and single-session lectures on HIV/AIDS knowledge and attitudes among university students in Turkey. AIDS Educ Prev. 2005;17(3):268-278. doi:10.1521/aeap.17.4.268.66533.
15. Dobbie F, Purves R, McKell J, Dougall N, Campbell R, White J, Bauld L. Implementation of a peer-led school-based smoking prevention programme: a mixed methods process evaluation. BMC Public Health. 2019;19(1). doi:10.1186/s12889-019-7112-7.
16. Morar N, Naidoo S, Goolam A, Ramjee G. Research participants' skills development as HIV prevention peer educators in their communities. J Health Psychol. 2016;23(10):1343-1349. doi:10.1177/1359105316655470.
17. Young V, Cole AN, Lecky DM, Fettis D, Pritchard B, Verlander NQ, McNulty C. A mixed-method evaluation of peer-education workshops for school-aged children to teach about antibiotics, microbes and hygiene. J Antimicrob Chemother. 2017;72(7):2119-2126. doi:10.1093/jac/dkx083.
18. He J, Wang Y, Du Z, Liao J, He N, Hao Y. Peer education for HIV prevention among high-risk groups: a systematic review and meta-analysis. BMC Infect Dis. 2020;20(1). doi:10.1186/s12879-020-05003-9.
19. Chandra-Mouli V, Lane C, Wong S. What does not work in adolescent sexual and reproductive health: a review of evidence on interventions commonly accepted as best practices. Global Health: Sci Pract. 2015;3(3):333-340. doi:10.9745/ghsp-d-15-00126.
20. Reichow B, Volkmar FR. Social skills interventions for individuals with autism: evaluation for evidence-based practices within a best evidence synthesis framework. J Autism Dev Disord. 2009;40(2):149-166. doi:10.1007/s10803-009-0842-0.
21. Webel AR, Okonsky J, Trompeta JA, Holzemer WL. A systematic review of the effectiveness of peer-based interventions on health-related behaviors in adults. Am J Public Health. 2010;100(2):247-253. doi:10.2105/ajph.2008.149419.
22. Ito K, Madeni F, Shimpuku Y. Secondary school students' and peer educators' perceptions of adolescent education in rural Tanzania: a qualitative study. Reprod Health. 2022;19(1). doi:10.1186/s12978-022-01418-6.
23. Bagnall A, South J, Hulme C, Woodall J, Vinall-Collier K, Raine G, Wright N. A systematic review of the effectiveness and cost-effectiveness of peer

education and peer support in prisons. BMC Public Health. 2015;15(1). doi:10.1186/s12889-015-1584-x.

24. Dubovi AS, Sheu H. Testing the effectiveness of an SCT-based training program in enhancing health self-efficacy and outcome expectations among college peer educators. J Couns Psychol. 2022;69(3):361-373. doi:10.1037/cou0000592.
25. Lucksted A, McFarlane WR, Downing D, Dixon LB. Recent developments in family psychoeducation as an evidence-based practice. J Marital Fam Ther. 2011;38(1):101-121. doi:10.1111/j.1752-0606.2011.00256.x.
26. Ndolo P, Kivuti L, Mwai K, Chiluba B, Lukama R, Campbell E, Bloomer FK. Legislative and Policy Analysis, Practice Guidelines and Related Publications within the Kenyan Context; Radical Abortion Care in a Pandemic, Briefing Report 2, May 2021. Ulster University. 2021.