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The Utilization of Smartphone Applications in Enabling Community Health Volunteer to Prevent Child Marriage

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Abstract

Child marriage frequently occurs during adolescence, when individuals are not yet psychologically and socially prepared to form a family. Preventing child marriage necessitates the active involvement of community health volunteers as agents of change in society. The purpose of community service is to implement PEDE smartphone application for health promotion among community health volunteer. The activities are conducted comprehensively to build skills among community health volunteers in addressing the phenomenon of child marriage in society. The implementation of services is carried out through training and mentoring to enhance both soft and hard skills of community health volunteers in preventing child marriage. The activities are divided into three stages: (1) introducing the PEDE's application, (2) practical simulation of health education for adolescents, and (3) evaluation of the improvement of life skills among workers. Results: The utilization of PEDE's smartphones application facilitates active engagement and improve the understanding of community health volunteers. This activity enhances community health volunteers' attitudes toward child marriage and ultimately contribute to the prevention of this social issue.
Keywords: Child Marriage; Community Health Volunteers; Health Education; Smartphone Application.

Abstrak

Perkawinan anak sering terjadi selama masa remaja, ketika individu belum siap secara psikologis dan sosial untuk membentuk keluarga. Mencegah perkawinan anak memerlukan partisipasi aktif pekerja kesehatan masyarakat sebagai agen perubahan dalam masyarakat. Tujuan pengabdian Masyarakat ini adalah untuk menerapkan aplikasi smartphone PEDE untuk promosi kesehatan oleh kader kesehatan. Aktivitas dilakukan secara komprehensif untuk membangun keterampilan di kalangan kader dalam menghadapi fenomena perkawinan anak di masyarakat. Kegiatan pelatihan dan bimbingan ditujukan untuk meningkatkan keterampilan *hard skill* dan *soft skill* kader. Aktivitas dibagi menjadi tiga tahap: (1) memperkenalkan aplikasi PEDE (2) simulasi praktis pendidikan kesehatan bagi remaja, dan (3) evaluasi peningkatan keterampilan hidup di kalangan pekerja. Penggunaan aplikasi smartphone PEDE memfasilitasi partisipasi aktif dan meningkatkan pemahaman kader kesehatan terhadap pencegahan perkawinan anak. Aktivitas ini meningkatkan sikap kader terhadap perkawinan anak dan akhirnya berkontribusi pada pencegahan masalah sosial ini.
Kata Kunci: Perkawinan Anak; Kader; Pendidikan Kesehatan; Aplikasi Smartphone.

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INTRODUCTION

Child marriage remains a pervasive issue globally, particularly in low-income settings, where it often perpetuates cycles of poverty and limited educational opportunities (Ningsih, 2020). The role of community health volunteers in society is crucial in preventing child marriage. These workers need to be provided with information and education concerning child marriage, so they can become the frontline and role models for the community. Community health volunteers also serve as an extension of healthcare providers in empowering adolescents and families.

Considering the high-risk areas for child marriage, the solution to be developed is an integrated approach through the Holistic Skill Building Program based on the Internet of Things (IoT) and the implementation of the PEDE smartphone application for preventing child marriage in the working area of the Ciwaruga community health center. Through this program, it is expected that community health volunteers will have the appropriate soft skills and hard skills to prevent child marriage among adolescents.

The utilization of IoT in the field of healthcare in Indonesia, particularly in the Ciwaruga area, is still very limited, both in tertiary and primary services. Additionally, many communities, including those in Ciwaruga, still have limited technological literacy. The exposure to and use of technology in the healthcare sector, which has developed rapidly, are not yet fully understood, resulting in limited utilization, including in efforts to prevent child marriage.

The utilization of smartphone applications (MPAs) has emerged as a promising strategy to prevent child marriage by empowering community health volunteers (CHVs) with the necessary tools and information to effectively intervene. The integration of MPAs into community health programs has been shown to enhance the effectiveness of interventions aimed at improving health outcomes. For instance, the mobile Partnership for Maternal, Newborn and Child Health (mPAMANECH) application in Kenya has demonstrated how CHVs can use smartphones to identify and track mothers and children, reducing pregnancy-related complications and newborn deaths in urban slums (Bakibinga, 2017). Similarly, in Uganda, a mobile phone-enabled system within the Integrated Community Case Management (iCCM) program has improved access to medical advice and strengthened reporting of data on danger signs and symptoms for acutely ill children under five years of age.

The use of MPAs in health interventions offers several advantages, including improved access to information, enhanced decision-making capabilities, and increased efficiency in data collection and reporting (Tumusiime, 2014). However, it also presents challenges, such as the need for adequate training and the potential for technical difficulties, particularly among older and less educated CHVs (Bakibinga et al., 2020; Schuttner, 2014). Despite these challenges, the literature suggests that well-designed MPAs can significantly mitigate these issues and stimulate interest in both CHWs and clients, thereby enhancing the credibility of health messages and improving client behavior change (Birukila et al., 2017).

This community services aims to contribute to the existing PEDE Smartphone Application in preventing child marriage by involving community health volunteers. By exploring the experiences of CHVs in various contexts, we aim to identify strategies that can enhance the effectiveness of community-based interventions. this community services will contribute to the development of more sustainable and impactful programs aimed at preventing child marriage through the strategic use of MPAs, ultimately improving the health and well-being of vulnerable populations.

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GENERAL DESCRIPTION OF THE COMMUNITY, PROBLEMS AND TARGET SOLUTIONS

General description

The community engagement activities were conducted in Ciwaruga Village, Parongpong District, West Bandung Regency, which is an area directly adjacent to the city of Bandung. This area is in a transitional phase between rural and urban development, and the district is strategically located with high accessibility and orbit. Ciwaruga is a suburban area of Bandung, and the socio-economic status of its residents is generally lower-middle class. The COVID-19 pandemic has led to an increase in child marriages in West Bandung Regency, including in the working area of the Ciwaruga Community Health Center. Ciwaruga is an area in West Bandung Regency with the highest number of child marriage cases, and the number of cases continues to increase each year. There were 197 cases of child marriage in West Bandung Regency in 2023. The livelihoods of the residents in this suburban area are not evenly distributed, with the majority engaged in farming and trading, and they have low levels of education and economic status. These factors contribute to the increasing rates of child marriage in the working area of the Ciwaruga Community Health Center, necessitating aggressive efforts to prevent child marriage among individuals under 19 years old in the area.

Problem

This community has 2 problems:

1. Low awareness of CHV's views child marriage as a social problem
2. There is no training for VHV's related to Child Marriage

Target Solution

This community services built soft and hard skills among community health volunteers in addressing the phenomenon of child marriage in society through utilization PEDE's Smartphone Applications.

METHODS

The activities are carried out in three stages. The first stage is related to the introduction of the PEDE application and the content on preventing child marriage. It focuses on enhancing the capacity of community health workers in terms of knowledge, attitudes, and behaviors towards the phenomenon of child marriage from various physical/biological, psychological, social, and cultural aspects.

The PEDE application is an Android-based application developed by researchers in 2022. It contains information on adolescent reproductive health, puberty, and health issues during adolescence. The application is protected by copyright with registration number 000378357. The application also features educational videos addressing issues related to adolescent sexual behavior and child marriage. An online chat room is also available as a means of ongoing communication for the program, where adolescents can consult with healthcare professionals.

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Figure 1. PEDE Mobile Applications

Table 1. Stages of Community Services

Stage	Description
Stage 1	Introduction to the PEDE application and its content focusing on preventing child marriage - The PEDE application features educational videos addressing issues related to adolescent sexual behavior and child marriage. - An online chat room is provided as a communication platform to ensure program continuity, allowing adolescents to consult with health professionals.
Stage 2	Implementation and simulation of health education practices for adolescents - Community health workers conduct active campaigns both directly and through social media to provide further understanding and reminders about the importance of avoiding risky behaviors. - Community health workers approach economically vulnerable families at risk of marrying off their children prematurely.
Stage 3	Evaluation of community health workers' life skills improvement related to preventing child marriage - Collaboration with local health centers (puskesmas) and government authorities to design sustainable programs through intensive guidance and monitoring. - Continuous updates on the latest information regarding child marriage prevention are provided to ensure program relevance.

Table 1. Stages of Community Services

The second stage involves the implementation and simulation of health education practices for adolescents by the CHV's. They actively campaign extensively, either directly or through social media, to provide additional understanding and remind individuals about the importance of avoiding risky behaviors. They also approach economically vulnerable families who are at risk of marrying off their children prematurely.

The third stage concludes with the evaluation of the community health workers' life skills improvement. This activity involves collaboration with the community health center and local government to design future program sustainability through intensive mentoring, monitoring,

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and the provision of up-to-date information on child marriage. Preventing child marriage also signifies preventing future health issues that may arise due to early pregnancy, sexually transmitted diseases, and the birth of stunted children.

RESULTS AND DISCUSSION

The first stage of the activity was successfully carried out in June, with a high level of enthusiasm from the 30 participating community health workers. The pre-test and post-test results showed a significant improvement in scores for 80% of the participants. Knowledge increased, with an average score of 60 improving to 80. Attitudes towards early marriage also improved, particularly regarding statements related to adolescent girls starting their menstrual cycle indicating readiness for marriage (Q1), young girls marrying to uphold the honor of their parents and family (Q2), the taboo of delaying marriage for girls (Q3), marrying young girls to help alleviate economic problems within the family (Q4), and parents strongly expecting their daughters to marry before the age of 18 (Q7).



Figure 2. Stage 1

In the second stage, the implementation and simulation of health education practices for adolescents are conducted by the community health workers. The CHV's actively campaign extensively, either directly or through social media, to provide additional understanding and remind individuals about the importance of avoiding risky behaviors. They also approach economically vulnerable families who are at risk of marrying off their children prematurely.



Figure 3. Health Promotion Simulation

The third stage concludes with an evaluation of the improvement in life skills of the community health workers. This activity collaborate with the local community health center and the local government to design future program sustainability through intensive mentoring, monitoring, including upgrading the latest information on child marriage. Preventing child marriage also means preventing future health problems that may arise from underage pregnancy, sexually transmitted diseases, and giving birth to children with stunting.

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Figure 4. Monitoring and Evaluation of Program

The importance of empowering CHV's in preventing child marriage becomes evident when we understand the vital role they play in addressing this serious issue. CHV's, who are an integral part of the community, possess deep knowledge of the values, culture, and local issues that influence the dynamics of child marriage. They are agents of change with access to the local community and the ability to communicate with them in their language. With proper education, CHV's can provide a deep understanding of the negative impact of child marriage on children's health and development (Darmawati, 2020). Additionally, they can help identify families and children at risk and provide the necessary support and guidance. CHV's also play a crucial role in uniting the community in prevention efforts, bridging relationships with relevant stakeholders, and facilitating more effective collaboration. Thus, empowering CHV's is a highly important strategy to ensure the successful and sustainable prevention of child marriage, bringing positive benefits to children and the community as a system.

Preventing child marriage is a very important issue in protecting children's rights and promoting healthy development (Greuel, 2023; Mahmood, 2020). Empowering CHV's is a crucial effort in preventing child marriage. Empowered CHV's can play an effective role as agents of change in their communities by disseminating accurate information and raising awareness about the negative consequences of child marriage. Through empowerment activities, CHV's can learn to recognize the signs of child marriage and why this practice should be stopped. They can provide information about the negative consequences of child marriage on education, health, and children's emotional development. Moreover, CHV's can promote children's rights and the importance of formal education and gender equality.

Empowering CHV's also plays a vital role in mobilizing the community to make decisions. They can organize social campaigns, workshops, and community meetings to educate the community about the harmful effects of child marriage. CHV's can also collaborate with government agencies, NGOs, and other community organizations to strengthen child marriage prevention efforts. Furthermore, empowering CHV's helps strengthen support and reporting systems. They can help identify cases of child marriage in their communities and report them to the authorities. CHV's can also provide support to families and at-risk children by connecting them with necessary health, education, and social services.

Overall, empowering CHV's is crucial in child marriage prevention. With the knowledge, awareness, and support they provide, CHV's can play a critical role in changing the attitudes and behaviors of the community regarding child marriage. Through collaborative efforts between CHV's, the government, NGOs, and the community, we can create a safe environment that protects children's rights and provides a better future for them.

In this CHV's empowerment, they are taught to train refusal skills in adolescents. Refusal skills are a person's ability to use effective communication strategies to say "no" when faced with

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pressure or unsafe situations that go against their own desires (Balakrishnan, 2022). Refusal skills also involve effective communication strategies to assert one's thoughts firmly but with the right communication style and a positive approach (Ningsih, 2020).

Refusal skills role-play is an educational method aimed at enhancing adolescents' skills in refusing pressure from various forms of negative behavior. Refusal skills role-play involves role-playing simulations where adolescents learn how to handle real-life situations involving pressure to engage in risky behaviors (Ningsih, 2020). Using this method provides adolescents with an opportunity to practice expressing their opinions, negotiating personal boundaries, and improving ideal communication skills.

Refusal skills are essential skills for adolescents to master in order to avoid negative pressure and risky behaviors without damaging their relationships with others. Refusal skills involve clear and assertive communication, an understanding of the consequences of the offered actions, and the ability to make wise and responsible decisions, allowing adolescents to overcome feelings of helplessness or fear of self-expression (Roue, 2021).

CONCLUSION

Empowering CHV's has a significant impact on efforts to prevent child marriage. Through training, education, and concrete actions, CHV's can become effective agents of change within the community. There is an improvement in the knowledge and attitudes of CHV's that can support efforts to prevent child marriage in the community. Through collaboration between CHV's, the government, NGOs, and the community, we can create a safe environment that protects children's rights and provides better opportunities for their future. Thus, CHV's empowerment is a crucial step in addressing child marriage and creating a world where all children can grow and develop to their full potential.

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