

Implementation of Health Promotion Methods for the Prevention of Mother-to-Child HIV Transmission among Pregnant Women: A Literature Review

Dhesi Ari Astuti^{1,2}, Mohammad Hakimi³, Yayi Suryo Prabandari⁴, Ida Safitri Laksanawati⁵, Atik Triratnawati⁶

¹Doctoral Program, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

²Department of Midwifery, Faculty of Health Sciences, Universitas Aisyiyah, Yogyakarta, Indonesia

³Department of Obstetrics and Gynecology, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

⁴Centre for Bioethics and Medical Humanities, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

⁵Department of Pediatric, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

⁶Department of Anthropology, Faculty of Cultural Sciences, Universitas Gadjah Mada, Yogyakarta, Indonesia

Corresponding Author: Dhesi Ari Astuti

Doctoral Program, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia, 55284

Email: dhesi@unisayogya.ac.id

ABSTRACT

This study has been conducted to identify health promotion methods in the Prevention of Mother-to-Child HIV Transmission (PMTCT) program among pregnant women and barriers to implementation. In this literature review study, we included published original articles which were published from 2010-2020 in Pubmed, ProQuest and Science Direct. The search was limited by the independent variable of health promotion methods and the dependent variable of the PMTCT program among pregnant women. Researchers have found 9 articles and 5 kinds of health promotion methods in the PMTCT program, namely community-based, home-based, short messaging service, partner-based, and integration between traditional birth attendants and primary health care. Lack of knowledge and collaboration on promotional methods that are appropriate for the conditions and situations of pregnant women can hinder the implementation of the PMTCT program. Therefore we need a health promotion method that suits the needs of pregnant women.

Keywords: Health Promotion; HIV; PMTCT; Pregnant Women

Correspondence:

Dhesi Ari Astuti

Doctoral Program, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia, 55284

Email: dhesi@unisayogya.ac.id

INTRODUCTION

HIV is one of the causes of significant morbidity and mortality in all children in the world through vertical transmission from mother to child [1]. One of the factors causing high HIV is the low retention of pregnant women who are HIV positive in the Prevention of Mother-to-Child HIV Transmission (PMTCT) program [2]. In addition, the absence of a counselor, poor counseling, lack of awareness and knowledge about HIV testing, lack of interest and psychological unpreparedness are reasons for not wanting to take an HIV test [3]. Therefore there needs to be an increase in the quality of client-oriented health services in line with the expansion of coverage and optimization of the PMTCT program [4].

Effective PMTCT is highly dependent on continuity of care from antenatal, postnatal to the end of the breastfeeding period. Retesting for HIV at the end of pregnancy reduces the rate of transmission by identifying women who had zero conversions after testing negative in early pregnancy. Therefore, additional promotional model interventions are needed [5]. A design implementation model with the main activities of providing health education, offering HIV testing, and implementing testing for pregnant women in the community to effectively increase access to PMTCT services [6], [7].

Health workers play an important role in the promotion of HIV care. Nurses and midwives have an important role to play in the development, implementation and evaluation of primary prevention programs for people with HIV [8]. Through information on health promotion

methods, it is hoped that health workers can carry out a combination of interventions such as home-based paired HIV testing for HIV prevention to reduce the incidence of mothers with HIV in areas with limited resources. This study has been conducted to identify health promotion methods in the PMTCT program in pregnant women and barriers to implementation.

MATERIALS AND METHODS

In this literature review study, we included published original articles which were published from 2010-2020 in Pubmed, ProQuest and Science Direct. The following keywords are used treating as title or abstract for the literature search: PubMed, has used the keywords (((Health promotion method) AND (Pregnancy)) OR (antenatal)) OR (prenatal)) AND (HIV testing)) OR (prevention of mother-to-child transmission of HIV from HIV-infected pregnant women); Proquest, has used the keywords (((Health promotion method) AND (Pregnancy)) OR (antenatal)) OR (prenatal)) AND (HIV testing)) OR (prevention of mother-to-child transmission of HIV from HIV-infected pregnant women); Science Direct, has used the keywords (((Health promotion method) AND (Pregnancy)) OR (antenatal)) OR (prenatal)) AND (HIV testing)) OR (prevention of mother-to-child transmission of HIV from HIV-infected pregnant women).

Online searching was performed in data collection. The gathered data was limited by the articles written in English. The article type was limited to original article.

The publication date of the articles was limited from January 2010 to December 2020. The research subject was limited to humans only. Conceivably significant title unique articles were inspected, while the insignificant articles were prohibited. Those possibly significant unique articles will be evaluated in full-content structure, while then the unessential articles were excluded. The sample inclusion criterias were researched on health promotion methods in PMTCT program in pregnant women. The exclusion criterias were (a) the inclusion

criterias were unsatisfyingly fulfilled, (b) the articles were unavailable in full-text form.

RESULTS

The procedure of this research was started by collecting data through published original articles identification on health promotion methods in PMTCT program among pregnant women on PubMed, ProQuest and Science Direct databases (Figure 1).

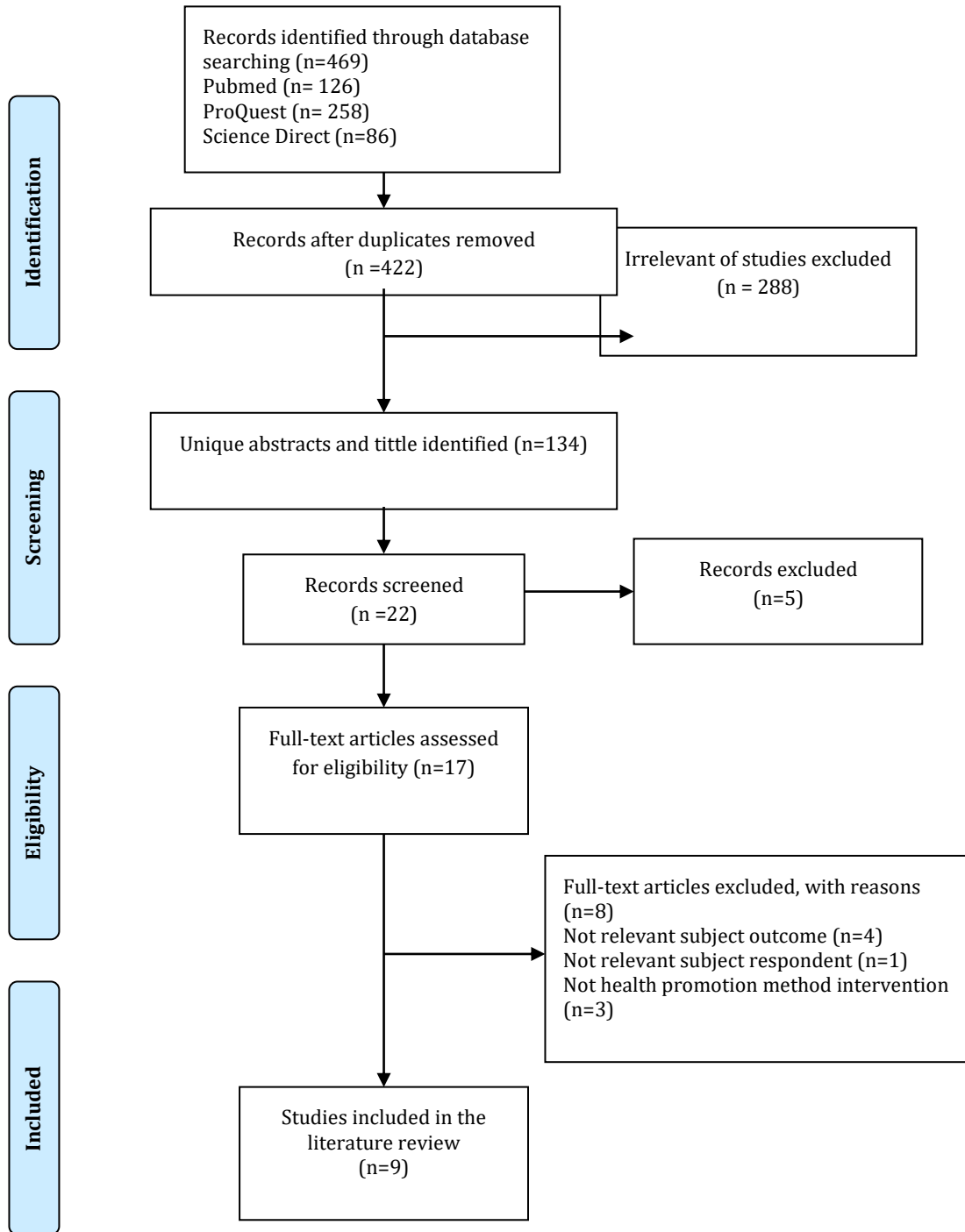


Figure 1. Research procedure

Figure 1 found 469 articles were identified by examining the article titles, abstract and full-text. Based on reviewing process was held to select 9 studies related to

health promotion methods in PMTCT program among pregnant women.

Literature review related to health promotion methods in PMTCT program among pregnant women (Table 1).

Table 1: Literature review related to health promotion methods in PMTCT program among pregnant women

Author (Year)	Country	Study type	No. of subjects and age of subjects	Health promotion methods	Result
Wanga (2019) [9]	Kenya	Qualitative	Number of female participants 20. Age of participants 24,7±4,8 years, did not complete elementary school (55.0%), monogamous marriage (80.0%), housewife (45.0%)	Community-based mentor mothers	The results of study suggest high receivability of community-based mentor mothers among female participants and health workers. Subjects described a community-based mentor mothers as someone implementing as a role model and confidant, and who was > 30 years old.
Sarna (2019) [10]	Kenya	Randomized controlled trial	Number of respondents 404. Mean age of intervention group 24.0 years and control group 25.0 years, elementary school level of education (64.3%), married (81.6%), not worked (87.9%), naive of anti retroviral treatment (ART) (57.0%) and knows the HIV status of partner (53.1%).	Education sent via mobile phone	The one-on-one tailored advising sent via mobile phone was associate in retaining mothers with infection of HIV in service and educating uptake of infant HIV testing, antenatal and postnatal care. Mobile educating gives a practical method to achieve and retain pregnant women with HIV infection and postpartum mothers in care
Ronen (2018) [11]	Kenya	Randomized controlled trial	Number of respondents 87. Median age was 26 years, elementary school education (73.6%).	Short message service	The results of the study found that there was an increase in respondents' interest after receiving information related to HIV via SMS.
Chizoba (2017) [12]	Nigeria	A Quasi-experimental	Number of respondents in intervention group 20 and control group 20	Engaging Traditional Birth Attendants (TBAs) with HIV counselling and testing (HCT)	The study compared two groups of primary health care, namely intervention and control. The interventions carried out were able to increase the target group's participation in conducting HIV testing compared to the control group
Ezeanolue (2015) [13]	Nigeria	Randomized controlled trial	Number of respondent in intervention group 1,670 and control group 1,377. Age group of 25-34.9 years (61.37%) in intervention group and control group (59.31%). Secondary educational level in intervention group (54.97%) and control group (58.18%).	Congregation-based intervention	The results of the study found that there was an increase in HIV testing in the intervention group (91.9%) vs the control group (54.6%) with p <0.001.
Osofi (2015) [14]	Kenya	Cross-sectional study	Both pregnant women and male partners (n=488). Primary educational level in women group (67.3%)	Home-based HIV testing	The increase in partner participation was higher using home based interventions than going to the clinic. This is evidenced by the majority of

			and men group (58.0%).		men (81%) have done HIV testing than women (65%).
Kalembo (2013) [15]	Malawi	A retrospective cohort study	Number of respondents 476. Primary educational level in male involvement group (49.2%) and no male involvement (55.0%).	Male partner involvement	The involvement of male partners in the PMTCT program that has been carried out (13.7%). The involvement of male partners that has been seen is contributing to the PMTCT program (OR = 25.9) and condom use (OR = 5.6)
Shroufi (2013) [16]	Zimbabwe	Qualitative	The number of informants were 14 companion mothers, 10 family members, 30 recipients of the M2M program	Mother to mother (M2M) peer support	The implementation of M2M has had an effect on empowering target groups affected by HIV to have positive behavior and preventing negative attitudes and actions towards efforts to prevent mother-to-child transmission of HIV.
Jennings (2013) [17]	Kenya	Qualitative	Informants who have been involved are HIV-positive women, male partners and community health workers	Short message service	The use of SMS has been useful in educating mothers and their partners to participate in HIV testing. Information via SMS can be of specific and general types, messages sent can contain advice and counseling that is useful in changing the behavior of the target group.

Table 1 shown that there are 9 articles related to the implementation health promotion methods for the prevention of mother-to-child HIV transmission. The research locations as a whole were in Africa, namely 5 studies in Kenya, 2 studies in Nigeria, 1 study each in Malawi and Zimbabwe. Based on the study design, it is known that 3 studies with qualitative study, 4 studies with RCT design and 1 study each with cross sectional and a retrospective cohort study.

DISCUSSION

Promotion methods that have been used in the PMTCT program among pregnant women are community-based mentor mothers, home based intervention, short message service sent via mobile phone, male partner involvement, and integration of TBAs and Primary Health Care.

Community based intervention

This health promotion method works in collaboration with organizations or communities such as Religious-based communities in Nigeria which have social networks and are already involved in overcoming HIV-AIDS. In Nigeria, religious communities have one center of worship even if health facilities are not available there. Churches and hospitals play an important role in prenatal care and childbirth. Health promotion like this can be adapted to screen pregnant women who are in areas with limited resources. Unfortunately, this promotion method cannot follow up on HIV positive test results because no identity information such as social security or similar information is released by the government [13].

Previous research stated that community-based methods were considered acceptable and feasible to support HIV service compliance in pregnant and postpartum women. A home based community mentor approach to mothers may be a useful and acceptable strategy for promoting

ART adherence and retention in PMTCT services [9]. Empowerment of communities such as HIV-positive mothers can accelerate behavior change by increasing retention in PMTCT programs [16]. In addition, community based interventions can reduce the incidence of HIV mothers in areas with limited resources [5]. The limitations to community based intervention programs such as different cultural practices in each community [16]. In addition, accidental disclosure of HIV infection status is also very vulnerable. The advantages of community-based mentors of mothers are to help reduce stigma in a community, feel empowered even with HIV positive status, and reduce the workload of health workers [9].

Home based intervention

Previous study have found that 54% of pregnant women prefer home HIV testing to clinics. The reasons are related to comfort, privacy and ease of access. In addition, this method reduces HIV-related stigma and increases partner support in PMTCT [14]. Home-based HIV testing in rural South Africa has been shown to be more effective at a lower cost of 37% [18].

Further on the advantages of this promotion method is also reaching out to male partners to take HIV testing. Other studies have shown that the incorporation of community-based interventions such as community mentors to mother and home based has been shown to improve PMTCT care, adherence and retention [19]. Homebased partner intervention also had a significant effect on the use of HIV prevention behaviors by both HIV positive and HIV negative partners [20]. In India, home-based PMTCT interventions have significant results in the short term so there is no evidence of significant long-term application. This is not only required for personnel but

also more time for the implementers, especially health workers [21].

Short message service

In the current era, many people have owned and easily accessed mobile technology. Previous studies have described the experience of mobile access such as receiving and sending SMS and several things related to health but the main thing is voice calls rather than text. The benefits of using cell phones for PMTCT include connecting with health workers, protecting confidentiality, and receiving information and reminders. Men and women perceive gender-adjusted SMS as a catalyst to increase male engagement and partner communication for PMTCT. However, an informative message that is conveyed safely to the recipient is very important. Health workers should continue to provide face-to-face counseling rather than being replaced by telephones. Neutral integrated SMS by the postnatal antenatal care service is the most preferred, although not all topics or text formats are equally acceptable. The PMTCT mobile communication platform has considerable potential [17].

Previous study revealed that promotional methods using SMS can be an effective tool in high-risk populations during a pandemic. In addition, this method increases the uptake of ARVs and HIV testing in infants with a very low risk of transmission. The use of SMS supports the disclosure of a person's HIV status and increases knowledge of treatment and motivation [11]. On the other hand, they are concerned about disclosing their HIV status. In addition, it is also possible to influence attitudes of acceptance or ignorance because it is considered an ordinary message or spam.

Male partner involvement

Male partner involvement increases PMTCT in HIV-positive women. A culture-adapted public health care model is needed to increase the level of involvement of male partners in programs [15]. This strategy is supported by previous research which states that increasing men's involvement in PMTCT with a home-based method because it provides comfort for male partners [14]. Men tended to choose a home based test [Odds ratio (OR) 3.47, 95% CI 1.53-7.89]. Counseling and HIV testing with partners is an opportunity for couples to know their HIV status together [3].

The involvement of male partners in PMTCT implies that, if women test HIV positive, it will be difficult for them to get full support and encouragement from their partners. Culturally, in Malawi, women are not allowed to communicate HIV status and initiate condom use with their partners because this is associated with unfaithful women [15]. Couples involved in ANC participate also play a role in the PMTCT program and prevention of pregnancy complications so that health promotion needs to involve partners [22]. A study of disclosing HIV status to partners had reactions of confusion, resentment, or threats of marriage separation. However there were no reports of domestic violence or divorce [2].

Integration of TBAs and Primary Health Care

Integration of TBAs and primary health care increased HIV counseling and testing almost three times as much without the integration of a TBAs. The TAP-In model has been shown to be effective at increasing HCT among pregnant women. TBAs are an important resource, especially in rural areas, in dealing with the high number of children infected with HIV in Nigeria. PMTCT training has an important role in HIV counseling and testing. A

study has shown that the use of traditional birth attendants for HCT can immediately identify and refer HIV positive women to primary health care through the PMTCT program [12].

However, this method can increase the workload, especially in primary health care with limited staff. Challenges faced by participating primary health care are improving documentation of HCT provided by traditional birth attendants, visiting traditional birth attendants for quality assessment, mentoring, and follow-up.

The results of the literature review that have been conducted show that there are many health promotion methods that can be used in the PMTCT program. Especially during a pandemic, besides protecting contracting the corona virus, it must also ensure the continuity of efforts to identify and treat HIV cases [23], [24]. Lack of knowledge and collaboration on promotional methods that are appropriate to the conditions and situations of pregnant women can hinder PMTCT programs. Therefore, we need a health promotion method that suits the needs of pregnant women.

CONCLUSION

Lack of knowledge and collaboration on promotional methods that are appropriate for the conditions and situations of pregnant women can hinder the implementation of the PMTCT program. Therefore we need a health promotion method that suits the needs of pregnant women.

AUTHOR'S CONTRIBUTION

DAS, MH, ISL and YSP conceived and designed the study. DAS, MH and AT collected the data and performed analysis and interpretation. DAS wrote the first draft with critical feedback from all authors. All authors read, reviewed and edited the draft and approved the final version of the manuscript.

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CONFLICTS OF INTEREST

The author reports no conflicts of interest in this study.

ABBREVIATIONS

HCT: HIV counselling and testing

HIV: Human immunodeficiency virus

M2M: Mother to mother

PMTCT: Prevention of mother-to-child HIV transmission

RCT: Randomized controlled trial

SMS: Short message service

TBAs: Traditional birth attendants

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