Review Article

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The Role of Prevention Programs in Reducing Unsafe Abortions: A Narrative Review

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ABSTRACT

Unsafe abortion remains one of the major challenges facing health systems worldwide, and unintended pregnancy is a common precursor to unsafe abortion. One of the most important and serious consequences of unsafe abortion is the increased maternal morbidity and mortality. Evidence indicates that in developing countries, approximately 13% of maternal deaths are attributable annually to unsafe abortion, and in Iran, more than 5% of maternal deaths have been reported to be related to abortion and its complications. Given that one of the major goals of reproductive health is to prevent complications and promote women's health, it is essential to consider preventive interventions and programs at both individual and societal levels as important global strategies. Studies have shown that women's knowledge and awareness are important factors, alongside access to reproductive health services, contraception, counseling, and supportive social policies. In this regard, commonly reported interventions include: awareness programs (including counseling approaches such as cognitive behavioral therapy (CBT) and acceptance and commitment therapy (ACT)), I-Change Model-based program, school- and college-based educational programs, peer education, youth-friendly services, premarital education programs, preconception care program, male participation, greater couple responsibility regarding pregnancy, self-care program, social support, social networks and mass media, non-governmental organizations (NGOs), prenatal genetic counseling program, and interpersonal communication. Therefore, health policymakers should scale up these programs to effectively prevent unsafe abortions and enhance women's health at individual, societal, and global levels. Although prevention programs are effective in reducing unsafe abortions, their implementation remains limited and demands specialized expertise.

Introduction

Reproductive health represents a cornerstone of public health, profoundly influencing the quality of life for individuals, families and communities worldwide[1]. Over recent decades, substantial advancements in medical technology, alongside the development of innovative diagnostic and therapeutic modalities, have significantly enhanced women's sexual and reproductive health outcomes globally[2]. Despite these technological and clinical strides, substantial disparities persist; women's reproductive health remains heavily compromised by systemic human rights violations, socio-economic inequities, and ethical challenges, which continue to pose critical global concerns[3].

Prominent among these challenges is unsafe abortion, a major yet highly preventable driver of maternal morbidity and mortality worldwide, accounting for approximately 25 million cases annually[4,5]. Although global healthcare standards have generally improved, reproductive health indicators in many developing nations remain critically suboptimal[6]. Globally, unsafe abortions account for roughly 13% of all maternal deaths[7], while in Iran, this issue and its associated complications contribute to over 5% of maternal mortality[8,9].

Consequently, unsafe abortion remains one of the most formidable challenges to contemporary global health[7, 10]. Unintended pregnancy serves as the most common cause of unsafe abortion. This trajectory is frequently driven by compounding systemic factors, including restricted access to modern contraceptives, poor health literacy, sociocultural stigma, and highly restrictive legal frameworks[7,11]. Furthermore, a critical lack of awareness regarding the severe and often irreversible sequelae of unsafe abortion, ranging from hemorrhage, infection, sepsis, and reproductive tract trauma to permanent infertility and profound psychological distress, frequently leads women to resort to high-risk, clandestine procedures. Empirical evidence demonstrates that robust patient education, active participation in healthcare decision-making, and adherence to patient rights substantially improve clinical outcomes. In the context of induced abortion, sufficient knowledge for informed decision-making is essential[12].

These multifaceted challenges underscore an urgent need for comprehensive preventive interventions to bridge knowledge gaps, facilitate behavior change, and dismantle systemic barriers across diverse societal levels 7, 9-11, 13, 14. Concurrently, global healthcare frameworks advocate for reinforcement of reproductive health policies, educational campaigns, counseling services, and community engagement initiatives to minimize the incidence of unsafe abortion7, 8, 11, 15. To address these gaps, this study aimed to synthesize current evidence on preventive programs that have demonstrated efficacy in reducing unsafe abortion. Specifically, this study examined and categorized these interventions into seven key thematic areas: (1) awareness-raising and counseling programs, (2) self-care initiatives, (3) social support mechanisms, (4) the utilization of social networks and mass media, (5) non-governmental organization (NGO)-led interventions, (6) prenatal genetic counseling, and (7) interpersonal communication strategies (Figure1).

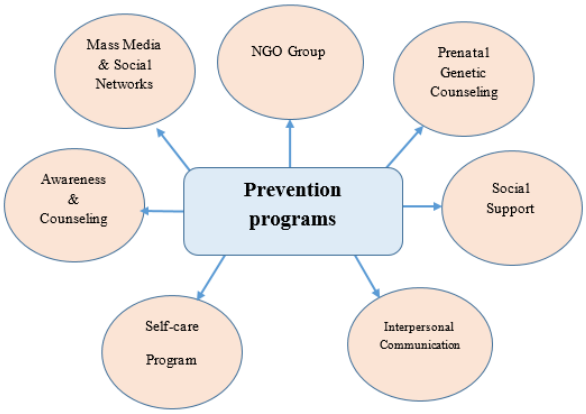

Figure 1. Prevention programs affecting unsafe abortions

Materials and Methods

This study employed a narrative review methodology to synthesize existing evidence on the effectiveness of preventive programs for unsafe abortion.

Inclusion Criteria:

Studies were deemed eligible for inclusion if they met the following criteria:

- Original research, including clinical trials, qualitative, and mixed-methods studies that evaluated prevention programs and their impact on reducing unsafe or induced abortion.
- Publications available in either Persian or English.
- Studies published within the past 15 years (from 2010 to 2025).

Exclusion Criteria:

Studies were excluded if they met any of the following criteria:

•Research focused exclusively on adolescent pregnancy and induced abortion in contexts outside the scope of this review.

- Studies focused solely on the clinical management or treatment of complications resulting from induced abortion.
- Research limited strictly to the medical/surgical procedures of abortion, without addressing preventive measures.
- Studies concerning extramarital sexual relationships or illicit reproductive activities.

Search study:

A comprehensive literature search was conducted across several databases, including PubMed, Scopus, Web of Science, the Cochrane Library, MagIran, SID, IranDoc, and Google Scholar. The search strategy utilized the following keywords and their combinations: induced abortion, counseling, unintended pregnancy, and program. Eligible articles published from 2010 to 2025 that met the inclusion criteria were reviewed. From 121 relevant articles, 30 articles were selected after review (Figure 2).

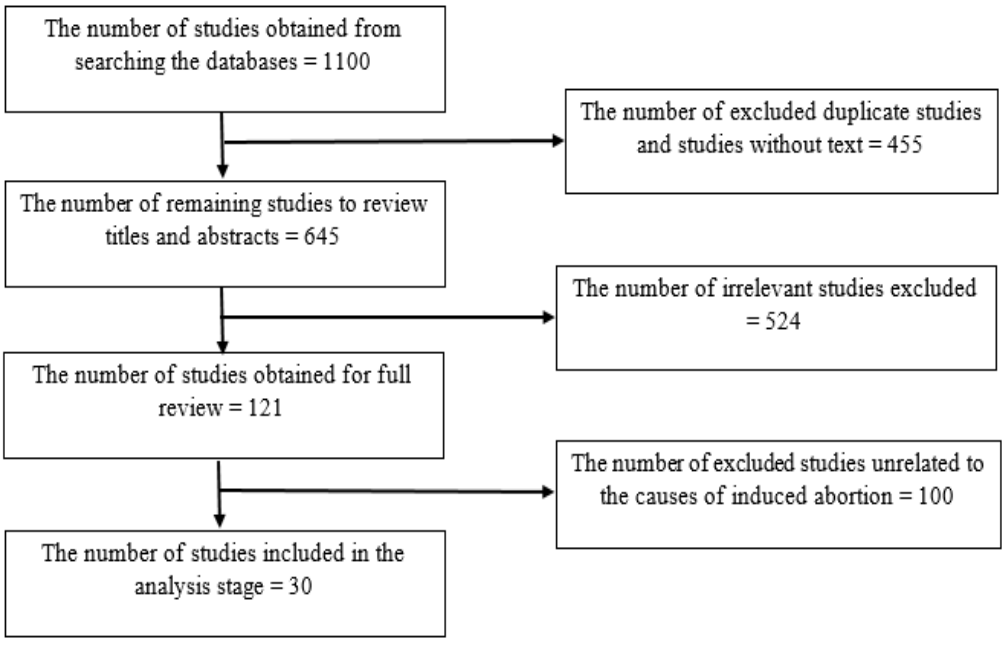

Figure 2. The process of searching databases and finding studies

Results

1. Awareness and counseling programs

Awareness-based interventions constitute a central pillar of strategies aimed at preventing unsafe abortion. Limited knowledge of reproductive health, together with inadequate awareness of the risks and complications associated with unsafe abortion, may contribute

to uninformed or high-risk decision-making among women[8,13,14] (Figure 3 & Table 1).

- **Cognitive-Behavioral Therapy (CBT) and Acceptance and Commitment Therapy (ACT)**: Psychological counseling interventions have shown considerable promise in supporting women with unintended pregnancies. Rabiee et al. (2023) reported that counseling based on Acceptance and Commitment Therapy (ACT) improved coping self-efficacy among mothers experiencing unintended pregnancies, suggesting that structured psychological support may reduce emotional distress and potentially decrease the likelihood of seeking unsafe abortion[16]. Similarly, midwifery counseling grounded in cognitive-behavioral therapy (CBT) was found to enhance maternal-fetal attachment and reduce anxiety[17].

- **I-Change model–based programs**

The "I-Change" model provides an integrated framework for understanding and promoting health behavior change. This model emphasizes behavior change as a sequential process involving awareness, motivation, and action. One of its major strengths lies in its adaptability across different cultural and social contexts[18]. Evidence suggests that intentional abortion decision-making is influenced by a range of interpersonal, social, and organizational determinants, many of which are addressed within the I-Change framework. In particular, the model highlights the role of awareness, cognition, attitude, self-efficacy, and behavioral intention in shaping health-related choices. In addition, the presence, behavior, and attitude of the spouse also play an effective role in promoting sexual health and fertility of couples[9].

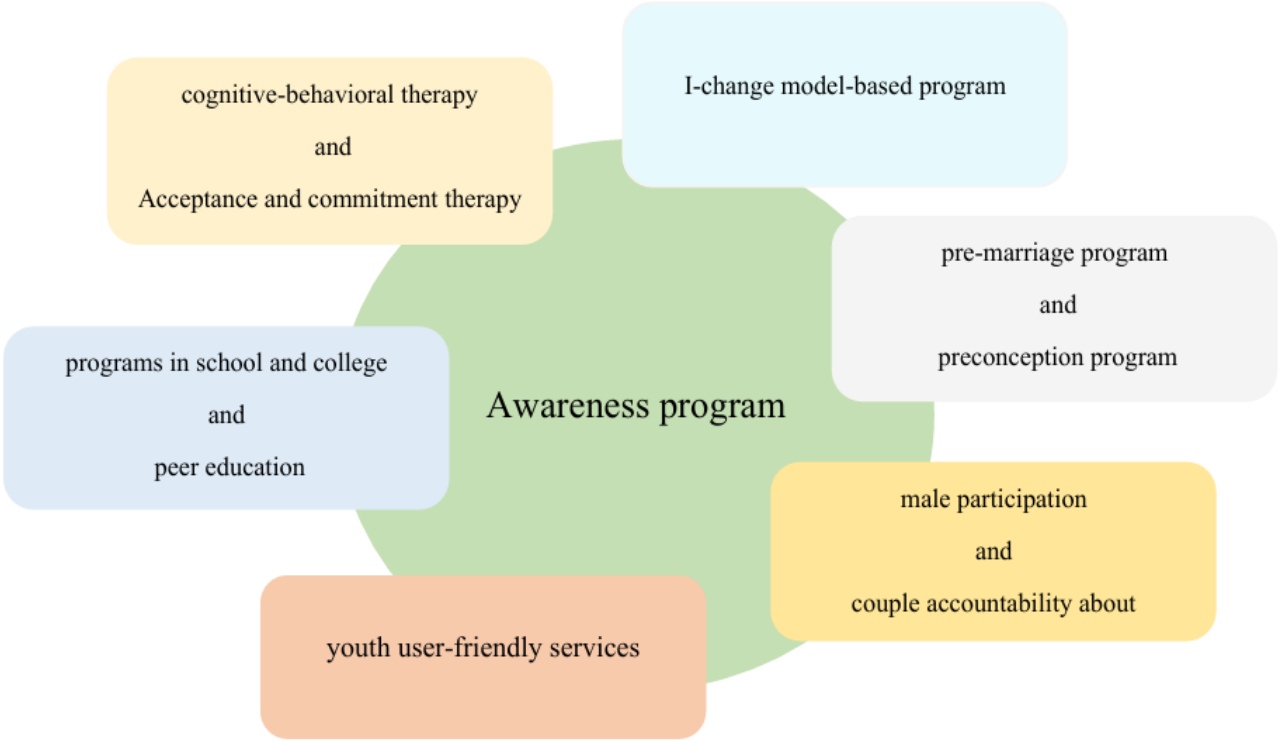

Figure 3. Awareness programs affected on unsafe abortions

Table 1. Summary of Key Preventive Programs for Unsafe Abortion

Program Type	Author	Study Design / Setting	Population	Main Outcome
Awareness & Counseling	Ekrami et al. (2020)	Randomized controlled trial, Iran	Women with unplanned pregnancy	Improved maternal-fetal attachment
	Abozari et al. (2023)	Randomized controlled trial, Iran	Women with unwanted pregnancy and their spouses	Reduced perceived stress, improved coping and self-efficacy
	Rabiee et al. (2024)	Controlled clinical trial, Iran	Mothers with unplanned pregnancy	Improved coping self-efficacy
	Bakhtari-Aghdam et al. (2023)	Quasi-experimental study, Iran	Women with unplanned pregnancy	Improved adaptation and coping with pregnancy
	Dolatabadi et al. (2024)	Mixed-method study protocol, Iran	Couples of reproductive age	Development of a comprehensive abortion prevention program
	Dolatabadi et al. (2024)	Mixed-method study protocol	Couples of reproductive age	Addressed motivational and behavioral factors related to abortion prevention
Mass Media & Social Networks	Ahinkorah et al. (2020)	Cross-sectional analysis of national survey, Ghana	Adolescent girls and young women	Increased self-efficacy in abortion-related decision-making
NGO-Led Programs	Rashid et al. (2017)	Multi-country implementation evaluation	Women of reproductive age and policymakers	Strengthened reproductive health programs addressing unintended pregnancy
	Marston et al. (2013)	Systematic review	Communities and women using maternal health services	Improved healthcare utilization through community participation
Prenatal Genetic Counseling	Gentile et al. (2025)	Observational study	Prenatal genetic counselors	Improved counseling self-efficacy and abortion-related education
Interpersonal Communication	Underwood et al. (2020)	Mixed qualitative-quantitative study, Nepal	Married couples	Improved communication and shared decision-making regarding family planning

- **School, college-based reproductive health programs and youth-friendly services**: Studies show that integrating reproductive health education into school and university curricula can substantially improve awareness and understanding of reproductive health issues among adolescents and young adults[19]. In addition, well-designed peer education programs in educational settings can facilitate effective knowledge exchange and strengthen learning through social interaction[20].
- **Pre-marital and preconception counseling:** Premarital and preconception counseling programs emphasize the importance of male involvement, shared responsibility, and informed participation in reproductive decision-making[9]. In addition, couples-based counseling interventions that incorporate spousal support have been associated with reduced psychological stress and improved marital communication in the setting of unintended pregnancy[10].

2. Self-care programs

Self-care represents a key component of reproductive health. The World Health Organization defines self-care as the ability of individuals, families, and communities to promote health, prevent disease, maintain well-being, and manage illness with or without the support of healthcare providers[21,22]. In the context of unsafe abortion, self-care encompasses fertility awareness, use of contraception, and informed reproductive decision-making. Available evidence suggests that self-care interventions may reduce unintended pregnancies by empowering women's autonomy, confidence, and capacity to manage their reproductive health. In this regard, self-care is not intended to replace formal healthcare services; rather, it complements health systems by supporting continuity of care and helping to reduce the

burden on healthcare systems[23].

3. Social support mechanisms

Social support from partners, family members, and the wider community plays a central role in reproductive decision-making. Conversely, social isolation and stigma are recognized as major risk factors that may increase women's vulnerability to seeking unsafe abortion[14, 23]. Studies have shown that counseling focused on coping strategies can improve psychological adjustment, social adaptation, and resilience among women experiencing unintended or unwanted pregnancies[24].

4. Role of social networks and mass media

Mass media and social networks are among the most influential tools for shaping public health beliefs, attitudes, and behaviors. Access to various media, including television, radio, billboards, magazines, telephone, and the Internet, can facilitate the widespread dissemination of accurate and accessible reproductive health information. In addition, studies have shown that exposure to mass media is associated with improved self-efficacy in making correct decisions[5] (Table1).

5. Role of non-governmental organizations (NGOs)

Evidence from the review of studies suggests that community-based interventions, particularly those centered on social participation, education, and empowerment, can improve women's utilization of healthcare services[25]. These findings indicate the value of community-based approaches in strengthening informed health-related decision-making among women and families. In this regard, non-governmental organizations (NGOs) play an important role in improving access to reproductive health services, especially in underserved areas with limited infrastructure. These organizations often play an effective role in promoting reproductive health by integrating community participation, advocacy, and health service delivery[15](Table 1).

6. Prenatal genetic counseling programs

Prenatal genetic counseling serves as a preventive strategy, particularly in settings where genetic conditions increase the risk of miscarriage. Genetic counseling helps couples achieve a healthy pregnancy by providing parents with accurate information about the health of their fetus. Implementing genetic counseling in prenatal care programs also allows couples to explore treatment options earlier, thereby reducing the risk of unsafe abortion[26, 27](Table 1).

7. Interpersonal communication approaches

Interpersonal communication interventions include direct interactions between couples as well as structured community dialogue sessions. Access to accurate reproductive health information through these channels facilitates informed decision-making for both couples and women of reproductive age regarding contraceptive methods. Consequently, such interventions play a vital role in reducing unintended pregnancies and minimizing risk factors associated with unsafe abortion[28, 29](Table 1).

Discussion

Evidence suggests that preventing unsafe abortion requires comprehensive, multilevel approaches that address the determinants of unintended pregnancy and improve reproductive health[15]. The findings of this study suggest that educational and counseling interventions can improve psychosocial outcomes among women experiencing unplanned pregnancies. Couples-based counseling may reduce perceived stress and help couples make informed decisions. In addition, evidence shows that counseling interventions can improve maternal-fetal attachment in pregnancies classified as unintended[10, 30]. Self-care interventions represent another effective program for promoting reproductive health. By empowering women and enhancing their engagement in health-related decision-making, such interventions improve reproductive health literacy and facilitate access to healthcare services[23]. In addition, community-based approaches implemented through non-governmental organizations (NGOs) can

improve access to reproductive health information, family planning services, and community education programs, particularly in underserved populations[15]. Mass media and interpersonal communication interventions may further support reproductive health by increasing awareness and improving self-efficacy[5]. Moreover, prenatal genetic counseling and theory-based interventions such as the I-Change Model may strengthen reproductive planning by addressing cognitive, motivational, and behavioral factors associated with reproductive health decisions and promoting greater partner involvement [9, 27]. Nevertheless, most of the reviewed studies assessed indirect outcomes associated with unsafe abortion, such as maternal attachment to the fetus, perceived stress, self-efficacy, empowerment, and reproductive health. Therefore, although these interventions may contribute to reducing risk factors associated with unsafe abortion, particularly unplanned pregnancy and inadequate reproductive health awareness, direct evidence regarding their effect on unsafe abortion outcomes remains limited.

Conclusion

Unsafe abortion remains a significant global public health concern and is closely associated with unintended pregnancy as well as limited access to reproductive healthcare services. The findings of this narrative review suggest that a range of interventions, including awareness and counseling programs, self-care interventions, social support strategies, mass media and community-based approaches, NGO-led programs, prenatal genetic counseling, and interpersonal communication programs, may contribute to reducing risk factors associated with unsafe abortion. These interventions appear to promote reproductive health knowledge, informed decision-making, social support, and access to reproductive healthcare services. Given that unsafe abortion is influenced by individual, interpersonal, social, and healthcare-related factors, comprehensive and multidisciplinary prevention strategies are required. Strengthening and expanding such programs may support efforts to improve women's reproductive health and reduce the burden of unsafe abortion. Further high-quality studies are needed to directly evaluate the impact of these interventions on unsafe abortion outcomes.

Conflict of Interest

The authors declared that they have no conflict of interest.

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Ethical Considerations

This article did not contain any studies with human participants or animals performed by any of the authors.

AI Disclosure

The authors declare that no artificial intelligence tools were used in the preparation of this manuscript.

Author's Contribution

Conceiving and designing the study: Z. R. and T. F.; Drafting the manuscript: Z. R.; Revising the manuscript critically for important intellectual content: T. F. All authors approved the final version of the manuscript for submission and agree to be accountable for all aspects of the work.

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