

Emergency Contraception and Prevention of Induced Abortion in Bangladesh

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Abstract

Introduction: Emergency contraception (EC) is a critical tool in preventing unintended pregnancies and reducing the need for induced abortions. Its timely use provides a last resort for women following unprotected intercourse or contraceptive failure. In Bangladesh, where socio-cultural factors, limited awareness, and access challenges influence reproductive health choices, understanding the role of EC in reducing abortion rates is essential. This review explores the current state of EC knowledge, accessibility, and its impact on abortion prevention within the country's unique healthcare landscape.

Methods: This study uses a narrative review to examine emergency contraception (EC) and its role in preventing induced abortion in Bangladesh. It synthesizes diverse peer-reviewed literature from 2000 to 2023, focusing on EC effectiveness, access barriers, and policy implications. A comprehensive search and selection process yielded nine relevant studies, analyzing EC use, abortion rates, and socio-cultural factors. Themes include EC effectiveness, barriers like stigma and education gaps, and policy recommendations for improved access and awareness.

Results: This review highlights that 66.7% of studies focused on knowledge gaps in emergency contraception (EC), 44.4% on its role in reducing abortion rates, and 33.3% on barriers to its use. Studies from Bangladesh, and other regions reveal that limited access to education and socio-economic disparities hinder EC utilization, while misconceptions among healthcare workers further restrict its effective dissemination.

Conclusion: The findings reveal that improving knowledge and addressing barriers are critical to optimizing the use of EC. With a majority of studies focusing on knowledge, a significant portion exploring abortion reduction, and a few discussing barriers and policy improvements, there is a clear need for integrated education and policy efforts to maximize the benefits of EC in reducing unintended pregnancies and abortions.

Keywords: Emergency Contraception, Induced Abortion, Accessibility, Knowledge of EC

I. INTRODUCTION

A novel form of contraception, emergency contraception (EC) can be used after sex to avoid unwanted pregnancy caused by unprotected sex, forced sex, contraceptive method failure (e.g., condom breaking during sex), or forgetting to take a birth-control pill. (Black, K. I., *et al*, 2016) (Li, H.W. R., *et al*, 2014) (Tessema, M. 2015) (World Health Organization, 2018). If EC is taken within 120 hours of unprotected or inadequately protected sexual activity, it can help prevent unintended pregnancy. (Croxatto, H. B., *et al*, 2001) The intrauterine device (IUD), also known as an EC, stops conception by altering the chemistry of sperm and egg before they come into contact, whereas ECP delays or stops ovulation. (Li, H.W. R., *et al*, 2014) (World Health Organization, 2018). Women can readily receive and use ECs on their own, except IUDs. (Dawson, A., *et al*, 2014) In underdeveloped nations, complications from unsafe abortions performed to end unwanted pregnancies and unwanted births have become quite prevalent. Approximately 85.5% of the 84.9 million unwanted pregnancies that take place worldwide take place in underdeveloped nations. Abortions and unwanted births occur in around 49% and 38% of unplanned pregnancies in underdeveloped countries, respectively. (Sedgh G., *et al*, 2014) Unsafe abortions account for around 45% of all abortions performed worldwide. Nearly all of these take place in underdeveloped nations. (Ganatra B, *et al.*, 2017) At least 8% of maternal deaths globally are attributable to unsafe abortions, with almost all of these deaths taking place in impoverished nations. An estimated 6.9 million women in underdeveloped nations experience complications from unsafe abortions annually, and 40% of those women never get treatment. (Guttmacher Institute, 2020) Using an emergency contraceptive pill could easily prevent many of these issues and unwanted pregnancies. If taken within five days of unprotected intercourse, the emergency contraceptive pill is a safe way to avoid getting pregnant. (Abate M., *et al*, 2014) The emergency contraceptive pill is listed as one of the 13 vital life-saving items for women and adolescents by the United Nations. (United Nations, 2022) The high rate of unwanted pregnancies, unwanted births, and problems from unsafe abortions and

menstrual regulations—also known as induced abortions—define Bangladesh as one of the poor nations. (National Institute of Population Research and Training, 2016) In Bangladesh, about 25% of births and 33% of pregnancies are unplanned. (Ganatra B, *et al.*, 2017) (Hossain SMI, *et al.*, 2009) In Bangladesh, there are over 1.2 million abortions performed annually. (Guttmacher Institute, 2020) About 0.9 percent of Bangladeshi women who are of reproductive age experience difficulties from unsafe abortions, and about one-third of those who do not receive the appropriate care.(Guttmacher Institute, 2020) (United Nations, 2020) Increased use of emergency contraceptive pills can be crucial to Bangladesh's attainment of its sustainable development goals since the country's goals prioritize preventing unwanted pregnancies and reducing complications and maternal deaths brought on by unsafe abortions and menstrual regulations. Despite the introduction of emergency contraceptive pill services (information dissemination and free emergency contraceptive pill distribution) nationwide in 2004 by the Bangladesh National Family Planning Program, only a small percentage of married women in Bangladesh are aware of and utilize the method. (National Institute of Population Research and Training, 2016) (Khan ME, *et al.*, 2005) Just 18% of married women in Bangladesh who are of reproductive age have heard of emergency contraceptives, and only 11% of those who have heard of them have ever used them. (National Institute of Population Research and Training, 2016) (Hossain SMI, *et al.*, 2009) To determine the factors influencing the usage of emergency contraceptive pills, a structured investigation is necessary. Studies on the usage of emergency contraceptive pills have mostly been conducted in America, Europe, and Africa; there are very few studies that concentrate on other locations. According to a survey of the use of emergency contraceptives in Bangladesh, the following factors significantly influenced the usage of these pills: education, having children, wealth index, use of contemporary contraception, and employment position. (Alam MZ, *et al.*, 2020) Because of the limitations of the current research in Bangladesh and the low prevalence of emergency contraceptives in the nation, it is crucial to learn more about the traits of the actual candidates for using emergency contraceptives that motivate them to use them in a given socioeconomic context. The aim of the study was emergency contraception and prevention of induced abortion in Bangladesh.

II. METHODOLOGY

Study Design and Definitions

The study employs a systematic review methodology to explore the role of emergency contraception (EC) in preventing induced abortion in Bangladesh. This approach aims to provide a detailed and structured overview of the literature related to emergency contraception use, its effectiveness, accessibility, and its impact on reducing the need for induced abortion in the Bangladeshi context. The methodology includes analyzing peer-reviewed articles, clinical studies, and governmental reports that provide insight into the current status of emergency contraception in Bangladesh and its association with abortion rates (Kothari, 2004).

Narrative Review Approach

This study utilizes a narrative review methodology, which synthesizes and critically evaluates a wide range of sources. The narrative review provides flexibility in analyzing diverse literature, and integrating findings from clinical trials, surveys, qualitative research, and observational studies. This allows for a comprehensive understanding of the public health issue in the context of Bangladesh's unique socio-cultural and healthcare landscape.

Why Narrative Review? The narrative review is chosen because of its ability to:

1. **Synthesize Evidence from Diverse Studies:** This approach is well-suited for integrating varied research methods and findings, ranging from clinical studies on EC efficacy to social science studies on contraceptive knowledge.
2. **Address Complex Socio-Cultural Factors:** Bangladesh presents a complex interaction between healthcare, cultural beliefs, and reproductive rights that necessitate a more flexible, integrative review.
3. **Highlight Policy Implications:** By integrating evidence, this approach identifies gaps in EC access, usage, and policies, providing actionable insights for improvement. (Borella et al., 2016)

Inclusion and Exclusion Criteria

Criterion	Inclusion	Exclusion
Literature	Peer-reviewed studies, government reports, and official statistics on EC and abortion in Bangladesh.	Non-peer-reviewed articles, editorials, or opinion pieces.
Year of Publication	January 2000 – December 2023.	Before January 2000.

Criterion	Inclusion	Exclusion
Population	Women in Bangladesh, healthcare providers, and public health experts.	Studies not conducted in Bangladesh or involving populations outside of Bangladesh.
Interventions	Studies on emergency contraception (oral pills, IUDs, etc.) and their role in abortion prevention.	Studies on non-contraceptive interventions or surgeries unrelated to EC or abortion.
Language	Articles published in English and Bengali.	Articles published in languages other than English or Bengali.

Literature Search Strategy and Key Terms

A comprehensive search was conducted in electronic databases such as PubMed, Google Scholar, and ScienceDirect, and regional sources like the Bangladesh Medical Research Council (BMRC) database. The search was focused on articles from 2000 to 2023, and the following key terms and Boolean operators were used:

Keywords	Relevant Synonyms
Emergency Contraception (EC)	Post-coital contraception, morning-after pill
Induced Abortion	Abortion, unsafe abortion, illegal abortion
Bangladesh	Dhaka, rural/urban Bangladesh, reproductive health in Bangladesh
Family Planning	Contraception, birth control, reproductive health
Unplanned Pregnancy	Unexpected pregnancy, unintended pregnancy

Selection and Retrieval Process

1. **Initial Screening:** Titles and abstracts of 120 articles were screened for relevance.
2. **Full-Text Review:** After initial screening, 85 articles underwent full-text review.
3. **Eligibility Assessment:** Studies were evaluated based on inclusion and exclusion criteria, leading to the selection of 9 articles for the final review.

Data Collected for Review

The review focuses on:

- Author, year of publication, study title.
- Research design, sample size, and methodology.
- Types of emergency contraception used (e.g., emergency contraceptive pills, copper IUD).
- Prevalence of induced abortion, its relationship with EC use.
- Impact of EC on abortion rates, societal perceptions, and policy effectiveness.

Data Analysis

Data from the selected studies were organized into themes and summarized in tables. These themes include:

- **Effectiveness of Emergency Contraception:** Rate of success in preventing unplanned pregnancies and abortions.
- **Barriers to EC Access:** Challenges such as cultural stigma, lack of education, and access to healthcare.
- **Public Health and Policy Recommendations:** Insights into improving EC availability and awareness to reduce abortion rates (Lisy and Porritt, 2016).

ETHICS

Ethical Considerations in Review Articles

As this is a systematic narrative review of published articles, it does not involve direct data collection from human subjects, so ethical approval is not required. All studies reviewed were publicly available and complied with ethical research standards. (Gajjar, 2013)

Informed Consent

Since no primary data collection is involved, informed consent was not necessary for this review.

Data Sharing and Transparency

The review ensures transparency by providing a clear breakdown of data extraction and analysis. The summary tables and findings are presented in an open, accessible manner for ease of understanding.

Search Biases

To minimize biases such as publication bias, a clear and systematic search methodology was employed. A broad range of sources, including regional and international databases, was used to capture a comprehensive view of the topic. This study followed ethical guidelines, emphasizing informed consent, transparency, and reducing biases, ensuring a robust and ethically sound review.

Emergency Contraception and Prevention of Induced Abortion in Bangladesh:

Author	Article	Study Design	Sample and Participants	Area Explored	Outcome/Measures	Key Findings	Conclusion
Rahman et al (2023)	<i>Role of community-level emergency contraceptive pills awareness and possibilities of long-acting reversible or permanent methods in reducing unwanted births in Bangladesh: evidence from a nationwide cross-sectional survey</i>	Cross-sectional Study	20,127 women ever-married women of reproductive age.	Emergency contraception impact on abortion rates	Considering women were nested within clusters, a mixed-effect multiple logistic regression was implemented to investigate the association between community-level ECP awareness and UWB by controlling for the effects of contextual, individual, and household characteristics.	About 2.1% of women who resided in communities of low ECP awareness had HighUWB, while UWB was only 0.5% (Low) among women residing in high ECP awareness communities.	This study highlights the significant positive role of ECP awareness in reducing UWB in Bangladesh.
Mahfuzur, Alam, and Billah (2022)	Determinants of emergency contraceptive pill use in Bangladesh: An analysis of national survey data	Cross-sectional Study	906 reproductive-age women who were potential candidates for using the emergency contraceptive pill	the determinants of emergency contraceptive pill use in Bangladesh.	Nationally representative data of the 2017-2018 Bangladesh Demographic and Health Survey (BDHS) conducted under the Demographic and Health Survey (DHS) program	family planning program has a great opportunity to play an important role in increasing emergency contraceptive pill use in Bangladesh by increasing the knowledge and awareness of women about emergency contraceptive pill	Provides important insights into the influence of different factors on emergency contraceptive pill use among Bangladeshi women, which can be very helpful in designing new interventions and selecting target audiences for new and existing interventions.
Ara et al. (2024)	Emergency contraceptive pill awareness in Bangladesh: missed opportunities in antenatal care and family welfare assistant visits	Cross-sectional Study	5012 reproductive-aged women who gave live birth in the last 3 years	the missed opportunities in generating ECP awareness through ANC and FWA visit programs and assess the missed opportunities and sociodemographic discrimination in receiving family planning (FP) counseling during ANC.	Nationwide Bangladesh Demographic and Health Survey 2017-18	the substantial missed opportunity to generate ECP awareness through ANC and FWA programs might contribute to reducing induced abortion	Policy improvements are needed to enhance access, especially in rural areas

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Royer et al. (2016)	Choice of Emergency Contraceptive and Decision-Making Regarding Subsequent Unintended Pregnancy	prospective observational trial	Of 548 enrolled women, 218 chose the Cu IUD and 330 the oral LNG for EC	To prospectively compare the willingness to use emergency contraception pill (ECP) to avoid unwanted pregnancy.	Interviews and surveys on EC use	50% of ECP groups were consented to use ECP to avoid abortions	Promoting EC can be an effective strategy to reduce abortions
Shaikh et al. (2016)	Perception about Emergency Contraception in Married Females of Childbearing (15-49) years in Dadu, Sindh	descriptive cross-sectional study	216 married females of childbearing (15-49) years	Perceptions about EC	Questions were asked regarding the perception of emergency contraception through a structured questionnaire.	Education, residence, guardian's income, and unplanned pregnancies are major variables that determine the understanding of emergency contraception.	Educated females were more aware of emergency contraception.
Ahmed, and Yunus, (2021)	Factors associated with knowledge and use of the emergency contraceptive pill among ever-married women of reproductive age in Bangladesh: findings from a nationwide cross-sectional survey	nationwide cross-sectional survey	17,592 women aged 15-49 years	knowledge and use of the emergency contraceptive pill (ECP) among ever-married women in Bangladesh	secondary dataset of the 2014 Bangladesh Demographic and Health Survey	Administrative region and type of residence (urban or rural), household wealth index, educational level (of both the woman and her spouse), spouse's occupation, number of living children, weight, current use of contraception and a history of pregnancy termination were positively associated with knowledge and use of the ECP	Nationwide reproductive health education programmes may improve the lack of knowledge and use of the ECP.
Khan et al 2004	Introduction of emergency contraception in Bangladesh: Using operations research for policy decisions	multi-factorial, control group, postintervention survey design	A total of 53 FGDs were conducted and 54 married women were also interviewed in-depth. Moreover, 290 service providers in the study area, using a structured interview schedule was carried out.	the study was to assess the need for and acceptability of ECP by women	Focus Group Discussions (FGDs) and in-depth interviews.	96 percent (96.6% in prophylactic and 94.3% in on-demand areas) of the women were able to prevent pregnancy after the use of ECP. Among those who used ECP correctly, the success rate for preventing pregnancy was almost 99 percent as against those who did not follow the full instructions	The use of emergency contraceptive pills (ECP) is highly effective in preventing pregnancy, with success rates reaching nearly 99% when used correctly, compared to 90% for incorrect use.

Author	Article	Study Design	Sample and Participants	Area Explored	Outcome/Measures	Key Findings	Conclusion
						correctly at 90 percent.	
Alam et al, 2020	Knowledge and Practice of Emergency Contraception among Currently-Married Women in Bangladesh: Evidence from a National Cross-Sectional Survey	Cross-Sectional Survey	The sample size of ever-married women was 17,863	the prevalence and the determinants of knowledge, and use of, emergency contraception (EC) among currently-married women aged 15-49 years	Data from the 'Bangladesh Demographic and Health Survey 2014' (National Institute of Population Research and Training (NIPORT)	the age of the respondent, parity, region, residence, educational level, household wealth index, access to any media, and visits by FP workers appeared to be significant determinants of knowledge of EC in Bangladesh	The high incidence of unsafe abortions in Bangladesh due to unintended pregnancies underscores the need for effective family planning initiatives, highlighting the importance of recognizing and utilizing emergency contraception.

Knowledge and Awareness of Emergency Contraception

The majority of the reviewed articles, six out of nine (66.7%), focused on the knowledge and awareness of emergency contraception (EC). Rahman et al. (2023) revealed that community-level awareness significantly influenced the reduction of unwanted births, underlining the positive role of awareness in fostering EC utilization. Ara et al. (2024) pointed out substantial missed opportunities in generating EC awareness during antenatal care visits and family welfare assistant programs, particularly in rural Bangladesh, where access to information was limited. Similarly, Ahmed and Yunus (2021) identified administrative regions, residence types, educational levels, and interactions with family planning workers as major determinants of EC knowledge among ever-married women in Bangladesh. Mahfuzur et al. (2022) emphasized the critical role of family planning programs in increasing awareness and promoting the use of EC. Shaikh et al. (2016) found that education, socio-economic factors, such as income and unplanned pregnancies, were key determinants of EC understanding among married women in Sindh, Pakistan. These findings collectively highlight the pressing need for enhanced public education and targeted outreach to bridge the knowledge gap and improve EC awareness, particularly in underserved and rural areas.

Impact of Emergency Contraception on Reducing Abortion Rates

Four studies (44.4%) investigated the impact of EC on reducing abortion rates, underscoring its potential as an essential tool for preventing unintended pregnancies. Rahman et al. (2023) demonstrated a strong link between high community-level EC awareness and significantly lower rates of unwanted births in Bangladesh. Royer et al. (2016) highlighted that 50% of women who used EC to avoid pregnancies expressed willingness to use it again, indicating its effectiveness in preventing abortions. Khan et al. (2004) showed that the correct use of EC resulted in a 99% success rate in preventing pregnancies, compared to a 90% success rate when instructions were not followed correctly. These findings emphasize the critical importance of correct EC use in reducing unintended pregnancies and, by extension, abortion rates. Alam et al. (2020) further highlighted the role of EC as an essential intervention to address the high incidence of unsafe abortions in Bangladesh, advocating for broader awareness and access to family planning resources.

Barriers to the Use of Emergency Contraception

Three articles (33.3%) explored barriers hindering EC use. Ara et al. (2024) emphasized missed opportunities in antenatal care programs, particularly in rural Bangladesh, where lack of infrastructure and trained personnel limited effective EC education. Mir and Malik (2005) highlighted misconceptions and knowledge gaps among community health workers, who are pivotal in educating communities about EC, noting that these gaps hindered their ability to promote EC effectively. Shaikh et al. (2016) pointed to socio-economic disparities, such as lower education levels and income disparities, as significant factors limiting EC awareness and access, particularly in

rural and underserved regions. These findings call for the removal of structural, educational, and socio-economic barriers to ensure equitable access to EC.

Policy and Program-Level Recommendations

Two studies (22.2%) focused on policy and programmatic improvements to enhance EC awareness and access. Ara et al. (2024) advocated for the integration of EC awareness campaigns into antenatal care visits and family welfare assistant programs, particularly in rural Bangladesh, as a strategy to reduce induced abortions and unintended pregnancies. Ahmed and Yunus (2021) suggested that nationwide reproductive health education programs could address the lack of knowledge and improve EC utilization rates. Mir and Malik (2005) emphasized the need for targeted training programs to address misconceptions and equip health workers with accurate information about EC, enabling them to provide effective counseling and education to women in their communities. Together, these studies underscore the importance of embedding EC education into existing healthcare systems and ensuring policy-level support for widespread implementation and accessibility of EC resources.

III. DISCUSSION

The review emphasizes the critical role of emergency contraception (EC) in preventing unintended pregnancies and reducing abortion rates. The findings highlight substantial regional disparities in awareness and knowledge of EC, as well as structural and informational barriers that hinder its use. Several studies reveal substantial gaps in EC knowledge, particularly in low-resource settings. Ara et al. (2024) pointed to missed opportunities for promoting EC awareness during antenatal care and family welfare assistant visits in rural Bangladesh, emphasizing the underutilization of these healthcare touchpoints. In Pakistan, Mir and Malik (2005) found that community health workers often lacked correct knowledge about EC, highlighting the need for targeted educational programs. Socio-economic factors also play a pivotal role in shaping EC awareness. Shaikh et al. (2016) identified education level, income, and unplanned pregnancies as key determinants of EC knowledge, a finding supported by studies in Sub-Saharan Africa and Southeast Asia where socio-economic inequities are similarly linked to reproductive health outcomes (Gbagbo & Amo-Adjei, 2021; Kabagenyi et al., 2014). Conversely, in Sweden, despite widespread general awareness, Aneblom et al. (2002) reported that misconceptions about pregnancy risk limited EC use. These patterns highlight the need for culturally tailored education to address both awareness and misinformation. Evidence strongly supports EC's effectiveness in preventing abortions. Rahman et al. (2023) showed a clear association between high community-level awareness and reduced unwanted births in Bangladesh. Similarly, Durrance (2013) reported that teenage girls using EC had a 25% lower abortion rate compared to non-users. Royer et al. (2016) found that many women were willing to use EC to avoid unplanned pregnancies when adequately informed, aligning with global findings linking increased EC availability to reduced abortion rates (Trussell & Raymond, 2019). Aneblom et al. (2002) further argued that improving EC accessibility could significantly decrease the demand for induced abortions by enhancing its role as a reliable backup method. The review identifies critical barriers to EC access and use. Mir and Malik (2005) highlighted misconceptions among health workers, impeding effective EC advocacy. Socio-economic challenges, identified by Shaikh et al. (2016), disproportionately affect rural and lower-income women. Global studies echo these findings, with factors such as stigma, cost, and limited pharmacy access being common barriers (Atkins, K et al., 2022; Bongaarts & Hardee, 2019). Addressing these structural and informational challenges is essential for equitable EC access. Policy changes are necessary to integrate EC education into broader reproductive health programs. Ara et al. (2024) advocated embedding EC awareness within antenatal and family planning services to leverage existing health infrastructure in rural areas. Mir and Malik (2005) called for improved training for health workers to dispel misconceptions. Studies in other regions reinforce the benefits of such integrated strategies (Swan, L.E et al., 2021; Cameron, S.T, 2020), demonstrating that national family planning policies incorporating EC education can reduce unintended pregnancies and improve reproductive autonomy. The study by Ahmed and Yunus (2021) highlights key factors influencing knowledge and use of emergency contraceptive pills (ECP) among ever-married Bangladeshi women. Higher educational attainment of both women and their spouses, urban residence, greater household wealth, current contraceptive use, and a history of pregnancy termination were positively associated with better awareness and utilization of ECP. These findings align with the study by Rana et al (2024), which also identified education, urban residence, and socioeconomic status as predictors of contraceptive awareness in South Asia. However, while Rana et al. focused broadly on various contraceptive methods, Ahmed and Yunus (2021) provide a more focused analysis of ECP, highlighting additional associations, such as spouse's occupation and number of children.

IV. SUMMARY:

The findings reveal that improving knowledge and addressing barriers are critical to optimizing the use of EC. With a majority of studies focusing on knowledge, a significant portion exploring abortion reduction, and a few discussing barriers and policy improvements, there is a clear need for integrated education and policy efforts to maximize the benefits of EC in reducing unintended pregnancies and abortions.

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