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Research Article

Causes of Unintended Abortion: Evidence from Bangladesh

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Abstract

Background: Unintended abortion remains a critical public health issue globally, necessitating a comprehensive understanding of its determinants, particularly in regions like Bangladesh with high prevalence rates.

Aim: The study aims to identify the key sociodemographic, economic, and healthcare-related factors associated with unintended abortion in Bangladesh and to assess the relationship between these factors and the utilization of family planning or birth control methods.

Methods: This study used quantitative methods with data from the Bangladesh Demographic and Health Survey 2014. Variables were measured quantitatively, and multiple regression analysis was employed. The sample included 17,300 households, with 3,830 married women who had terminated pregnancies. Sampling was two-staged, resulting in 18,000 households. Multiple linear regression identified factors influencing unintended abortion, detailed in the Results section.

Result: Findings show the highest rates among women under 18 (61.31%) and 19-29 (37.61%), declining with age (Table 1), and higher rates among women with secondary or no education (28.5% and 27.2%, respectively) compared to those with higher education (8.0%) (Table 2). Additionally, non-agricultural workers (24.84%) and construction workers (23.59%) experience higher termination rates (Table 3). A U-shaped association is observed between marriage to first birth interval and unintended abortion (Figure 1), while contraceptive users have lower termination rates (23.24%) compared to non-users (76.76%) (Table 4). Regression analysis identifies age ($t = -5.010$, $p < 0.001$), type of place ($t = 16.494$, $p < 0.001$), and marriage to first birth interval ($t = 2.341$, $p = 0.019$) as significant predictors of unintended abortion, with corresponding t-values and significance levels detailed in Table 5.

Conclusion: Our study identified key sociodemographic, economic, and healthcare factors associated with unintended abortion in Bangladesh. Younger age, lower education, demanding occupations, and specific birth intervals were associated with higher risk, while consistent contraceptive use was protective.

Keywords: Unintended; Abortion; Significance; Birth Interval; Determinants

Introduction

Unintended pregnancy, defined as a pregnancy not desired at the time of conception, remains a significant public health worry in many developing countries, including Bangladesh. It often leads to unintended abortion, which carries considerable risks for women's health and well-being [1]. Understanding the factors contributing to unintended abortion is crucial for developing effective interventions to reduce its prevalence and improve reproductive health outcomes.

According to estimates by the Guttmacher Institute, approximately half of all pregnancies in Bangladesh are unintended, and approximately 1.2 million abortions were performed in 2014 [2]. While abortion is legal in Bangladesh under certain circumstances, including the preservation of a woman's life, access to safe and legal services remains limited, particularly for marginalized populations [3]. This highlights the need to address the source causes of unintended abortion and promote its prevention through evidence-based strategies.

Numerous studies have explored the factors associated with unintended abortion in Bangladesh, identifying sociodemographic characteristics, economic factors, and healthcare access as key contributors [4]. However, a complete understanding of the complex interplay between these factors and their relative importance in different contexts is still needed. Additionally, limited research has investigated the specific ways in which various interventions, such as family planning programs, can effectively address these factors and reduce unintended abortion rates.

Unintended abortion, defined as the termination of a pregnancy that was not desired or intended, remains a significant public

health concern worldwide, mainly in developing countries like Bangladesh [5]. Despite efforts to improve reproductive health services and access to contraception, unintended pregnancies resulting in abortion continue to pose challenges to women's health and well-being [6].

In Bangladesh, where traditional norms and limited access to comprehensive reproductive healthcare persist, the prevalence of unintended abortion remains substantial [7]. Understanding the sociodemographic, economic, and healthcare-related factors influencing unintended abortion is crucial for informing targeted interventions and policy initiatives aimed at reducing its incidence [8]. This study aims to identify key factors associated with unintended abortion in Bangladesh and assess their relationship with the utilization of family planning or birth control methods [9]. Through an analysis of secondary data from the Bangladesh Demographic and Health Survey (BDHS) 2014, this study employs a quantitative approach to examine these factors and their implications for reproductive health outcomes [10].

Previous research has highlighted the role of various factors, such as age, educational attainment, occupation, and contraceptive use, in shaping the risk of unintended abortion [11]. For instance, younger age groups and lower levels of education have been related to higher rates of unintended pregnancy and abortion [12]. Additionally, women engaged in demanding or high-risk occupations may face increased challenges in accessing reproductive healthcare services, potentially contributing to higher rates of unintended abortion [13].

This study builds upon existing literature by providing updated insights into the determinants of unintended abortion in Bangladesh and their implications for family planning practices [14]. Many pregnancies are unintended, particularly in certain population groups [15]. Contemporary patterns of unintended pregnancy resolution in low- and middle-income countries exhibit diverse and dynamic trajectories [16]. It was projected that 35 abortions (90% uncertainty interval [UI] 33 to 44) occurred yearly per 1000 women aged 15–44 years worldwide in 2010–14 [17]. Adolescent pregnancy is a worldwide issue. The subject is getting attention even in developed, wealthy countries like the United States of America [18]. Study results reveal that there are substantial levels of both concordance and discordance in answers to household decision-making items [19]. Nationwide rates of unintended pregnancy and unmet need for contraception continue to be considerably high and warrant increased policy attention [20].

Methods

This study employed a quantitative approach, primarily relying on secondary data from the Bangladesh Demographic and Health Survey (BDHS) 2014. All variables of interest were measured quantitatively. While the research design was primarily analytical, the use of multiple regression analysis to depict the effects of the independent variable allows for its classification as analytical research as well.

The sample included 17,300 households, with 5,930 from urban areas and 11,370 from rural areas. Among interviewed women aged 15-49, there were 6,167 from urban areas and 11,696 from rural areas. The study focused on a subset of 3,830 married women who had terminated pregnancies, with 1,462 from urban settings and 2,368 from rural environments.

A two-stage stratified sampling technique was used to select the sample. In the first stage, 600 enumeration areas (EAs) were chosen with probability proportional to size, with 207 in urban areas and 393 in rural areas. In the second stage, an average of 30 households were systematically selected per EA to ensure statistically reliable estimates for key demographic and health indicators at the national, urban/rural, and divisional levels. This design yielded a sample of 18,000 households, which was expected to result in completed interviews with approximately 18,000 ever-married women.

Multiple linear regression analysis was working to identify the factors manipulating unintended abortion. The specific statistical methods used will be presented in the Results section.

Results

This study sought to identify key factors associated with unintended abortion in Bangladesh and assess their relationship with family planning methods. Our findings reveal several crucial associations.

Age played a significant role, with the highest unintended abortion rates among women who delivered under 18 (61.31%) and 19-29 (37.61%) (Table 1). The rate then significantly declined with increasing age, reaching a minimum among women aged 40 and above (0.03%). Educational attainment had a strong negative association. The highest rates were observed among women with secondary education (28.5%) and no education (27.2%), while those with higher education had a significantly lower rate (8.0%) (Table 2).

Women in demanding occupations like non-agricultural work (24.84%) and construction (23.59%) experienced higher termination rates compared to those in less demanding jobs (Table 3).

An intriguing U-shaped association emerged between this interval and unintended abortion (Figure 1). The highest rate (25.88%) occurred for pregnancies within one year of marriage, followed by a decline reaching a minimum of around 4 years. Rates slightly increased again at longer intervals exceeding 15 years. A statistically significant negative association was experimental between

contraceptive use and unintended abortion (Table 4). Women currently using contraception had a considerably lower termination rate (23.24%) compared to non-users (76.76%). A regression analysis exploring the combined effects of various factors identified age of respondents, type of place (urban/rural), and marriage to first birth interval as significant predictors of unintended abortion (Table 5).

Age of respondent at first birth	Occurrence of terminated pregnancy		% of a terminated pregnancy	Total
	No	Yes		
≤ 18 Years	8164	2222	61.31	10386
19 to 29 years	4143	1363	37.61	5506
30 to 39 years	93	38	1.05	131
40 and above	1	1	0.03	2
Total	12401	3624	100	16025

Table 1: Association of the age of respondents with terminated pregnancy issue.

Education level	Percentage of terminated pregnancies
No education	27.20%
Incomplete primary	19.70%
Complete primary	11.20%
Incomplete Secondary	8.00%
Complete secondary	5.40%
Higher	28.50%

Table 2: Educational attainment with pregnancies.

Type Occupation	Terminated pregnancy issues in Percentages
Home-based manufacture (Handicrafts/food products)	11.88%
Domestic Servant	11.56%
Non-agricultural worker (Factory Worker)	24.84%
Carpenter, mason, bus/taxi driver, construction supervisor, seamstress/tailor, policeman, armed services, Dai, etc.	23.59%
Doctor, Lower, dentist, accountant, teacher, Nurse, family welfare visitor, mid and high-level services (Government)	11.88%
Other	16.25%
Total	100%

Table 3: Occupation vs. terminated pregnancy issue.

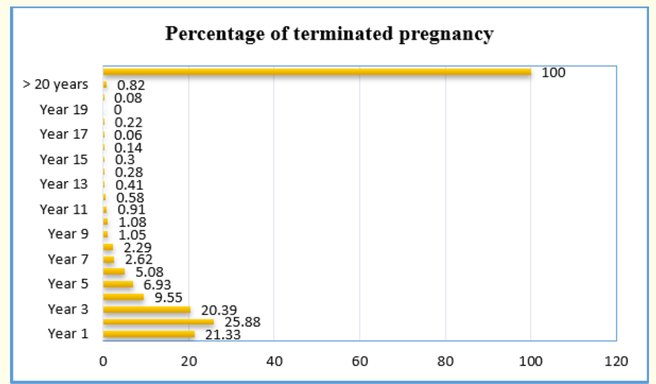

Figure 1: Marriage to first birth interval (year).

The contraceptive method currently used	Have you ever had a terminated pregnancy?		% of a terminated pregnancy	Total
	No	Yes		
No	10395	2940	76.76	13335
Yes	3617	890	23.24	4507
Total	14012	3830	100.00	17842

Table 4: Use of contraceptive method and percentages of terminated pregnancy.

Independent variables	Dependent Variable: Unintended abortion (UAI)		Value of t	Sig.
	Unstandardized Coefficients	Std. Error		
(Constant)	.115	.029	3.946	.000
age of respondents	-.125***	.025	-5.010	.000
Educational Attainment	.031*	.022	1.417	.107
Occupation	.025	.023	1.090	.276
Religion	-.014	.022	-.625	.532
employed frequency	.022	.019	1.204	.229
wealth index	-.026*	.018	-1.463	.104
Type of place (urban or rural)	.265***	.016	16.494	.000
marriage to 1st birth interval	.061***	.026	2.341	.019
Method currently used	-.005	.021	-.238	.812
Contraceptive method use	-.035**	.019	-1.905	.057

Table 5: Effects of determinants on unintended abortion.

N = 2683; df= 2682, F = 30.416 (Significance Level = 0.000)

Note: *** represents significance at a 1% level of significance, ** represents significance at a 5% level of significance, and *represents significance at a 10% level of significance.

Discussion

This study aimed to identify key issues associated with unintended abortion in Bangladesh and assess their relationship with family planning methods. Our findings align with previous research and illuminate crucial areas for intervention to decrease unintended abortion rates in this context.

Our finding of higher unintended abortion rates among younger women coincides with global trends [1,6]. This underscores the necessity of targeted interventions promoting comprehensive sexuality education, delaying childbearing, and ensuring equitable access to family planning services for young people [8]. The negative association between educational attainment and unintended abortion mirrors prior studies in Bangladesh [4,10]. Education empowers women with knowledge about reproductive health and contraceptive options, enabling them to make informed choices about their fertility [8]. Investing in girls' education and addressing gender disparities in access to education are crucial strategies.

Higher termination rates among women in demanding occupations align with research in other contexts [13] and suggest limited control over work schedules and difficulty accessing healthcare, potentially hindering contraceptive use. Policies promoting flexible work arrangements and employer-supported healthcare access could be beneficial.

The intriguing U-shaped association between the marriage to first birth interval and unintended abortion has not been previously reported in Bangladesh. Early childbearing and longer intervals (exceeding 15 years) might be associated with challenges accessing or adhering to contraception due to various social and cultural factors. Further research is needed to explore this complex relationship.

The significant negative association between contraceptive use and unintended abortion confirms the effectiveness of family planning in preventing unwanted pregnancies [5, 6]. Expanding access to a wider range of safe and effective methods, coupled with comprehensive counseling and information, is crucial [8].

Our study utilized secondary data, limiting our ability to explore the underlying mechanisms behind the pragmatic associations. Additionally, self-reported data on abortion might be subject to underreporting. Future research employing qualitative methods and larger, nationally representative samples could provide deeper insights and inform more nuanced interventions.

Our findings call for a multi-pronged approach to address unintended abortion in Bangladesh, including Investing in girls' education and promoting gender equality; Expanding access to comprehensive sexuality education and family planning services for young people; Developing policies that support working women, such as flexible work arrangements and employer-supported healthcare access; Further research on the U-shaped association between marriage to first birth interval and unintended abortion to inform targeted interventions; Increasing contact to a wider range of safe and effective contraceptive methods alongside comprehensive counseling and information; By addressing these key areas, Bangladesh can make significant progress towards reducing unintended abortion rates and improving reproductive health outcomes for its citizens, contributing to attaining Sustainable Development Goal 3 (good health and well-being) [14].

Our findings are usually consistent with previous research on unintended abortion in Bangladesh and other developing countries, highlighting the importance of similar interventions across diverse contexts.

Limitation of the Study

- While the Bangladesh Demographic and Health Survey (BDHS) 2014 provides a rich dataset, the vast amount of information makes it challenging to isolate and analyze the specific factors contributing to unintended abortion.
- The study covered seven administrative divisions, but the sample size of women with terminated pregnancies varied across them. This might affect the generalizability of the findings and limit meaningful comparisons between divisions.
- The study's reliance on quantitative data restricts the ability to delve deeper into the qualitative aspects of unintended abortion, potentially hindering a comprehensive understanding of the underlying causes.

Recommendation

- Gain deeper insights through interviews and focus groups alongside statistical analysis.
- Ensure proportional representation across divisions for accurate comparisons.
- Include open-ended questions or interviews to understand individual experiences.
- Track individual changes in reproductive choices and behaviors over time.
- Analyze how social norms, religion, and healthcare access influence unintended abortion.
- Design and evaluate interventions based on identified key factors and specific demographics/regions.

Conclusion

In conclusion, our study identifies significant sociodemographic, economic, and healthcare-related factors associated with unintended abortion in Bangladesh, emphasizing the importance of targeted interventions to address these determinants and promote reproductive health. By accepting the complex interplay of these factors, policymakers and healthcare providers can develop comprehensive strategies to decrease the incidence of unintended

pregnancies and abortions, ultimately improving maternal and child health outcomes in Bangladesh.

Conflict of Interest

The author confirms no conflict of interest.

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