Factors Predicting Contraceptive Use among Women Seeking Induced Abortion in Dhaka, Bangladesh

นิพนธ์ต้นฉบับ

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Original Article

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บทคัดย่อ

วัตถุประสงค์: เพื่อศึกษาปัจจัยทำนายพฤติกรรมการคุมกำเนิดในสตรีบังคลาเทศที่มารับบริการการทำแท้ง ที่โรงพยาบาลวิทยาลัยการแพทย์แห่งดากา เมืองดากา ประเทศบังคลาเทศ ปัจจัยทำนายคือ ทัศนคติต่อการคุมกำเนิด บรรทัดฐานทางสังคมต่อการคุมกำเนิด การรับรู้ว่าตนเองควบคุมการคุมกำเนิดได้ ความรู้เกี่ยวกับการคุมกำเนิด และการรับรู้อุปสรรคต่อการคุมกำเนิด **วิธีการศึกษา:** ศึกษาในหญิงตั้งครรภ์มารับบริการการทำแท้ง ในโรงพยาบาลวิทยาลัยการแพทย์แห่งดากา ที่ได้จากการสุ่มอย่างง่ายจำนวน 150 คน เก็บข้อมูลโดยการสัมภาษณ์ตามชุดแบบสอบถามแบบมีโครงสร้างที่ผู้วิจัยสร้างเอง โดยผู้วิจัยสร้างแบบสอบถามเป็นภาษาอังกฤษก่อน แล้วให้ผู้เชี่ยวชาญ 5 ท่านตรวจสอบความตรงเชิงเนื้อหา มีค่าดรรชนีความตรงเชิงเนื้อหารายข้อระหว่าง 0.80 - 1.00 เนื่องจากเก็บข้อมูลกับชาวบังคลาเทศ แบบสอบถามที่ใช้ต้องเป็นภาษาบังคลาเทศ จึงใช้เทคนิคการแปลย้อนกลับที่ปฏิบัติการโดยผู้วิจัยและผู้ใช้สองภาษาอีก 3 คน ทดสอบความเที่ยงของแบบสอบถามภาษาบังคลาเทศ โดยทดลองใช้กับสตรีที่มีคุณลักษณะเหมือนกลุ่มตัวอย่างจำนวน 30 คน แบบสอบถามทั้ง 5 ชุด มีค่าความเชื่อมั่นระดับที่ยอมรับได้ (แบบสอบถามความรู้มีค่าสัมประสิทธิ์ของคูเดอร์-ริชาร์ดสัน 20 คือ 0.78) แบบสอบถามที่เป็นแบบวัดประเมินค่าอีก 4 ฉบับ มี ค่าสัมประสิทธิครอนบาคอัลฟาระว่าง 0.72 ถึง 0.90 วิเคราะห์โดยสถิติการถดถอยพหุคูณแบบพื้นฐาน **ผลการศึกษา:** ผลการวิเคราะห์พบว่าทัศนคติต่อการคุมกำเนิด การรับรู้ว่าตนเองควบคุมการคุมกำเนิดได้ และการรับรู้อุปสรรคต่อการคุมกำเนิด ร่วมกันอธิบายความแปรปรวนของพฤติกรรมการคุมกำเนิดได้ 18.2% ($F_{3,146}$ = 10.82, P < 0.01) **สรุป:** จากผลการศึกษา บุคลากรด้านสุขภาพควรส่งเสริมให้ผู้รับบริการมีทัศนคติที่ดีต่อการคุมกำเนิด และควรช่วยลดอุปสรรคในการคุมกำเนิดของผู้รับบริการ เพื่อส่งเสริมสุขภาพมารดาในประเทศบังคลาเทศ

คำสำคัญ: การคุมกำเนิด, การทำแท้ง, ทฤษฎีพฤติกรรมตามแผน, บังคลาเทศ

Abstract

Objective: To examine the association between contraceptive use behaviors and its predicting factors including attitudes toward contraceptive use, subjective norms toward contraceptive use, perceived behavioral control over contraceptive use, contraceptive knowledge, and perceived barriers to contraceptive use, among women seeking induced abortion in Dhaka Medical College Hospital, Dhaka, Bangladesh. **Method:** A sample of 150 unwanted pregnant women seeking induced abortion from DMCH in March, 2014 was recruited by a simple random sampling. A set of structured questionnaires was used for data collection. The questionnaire was primarily developed in English. They were validated by five experts and had high item-level content validity indices ranging from 0.80 to 1.00. After back-translated to Bengali language by the researcher and three bilinguals, the Bengali version was tested for its reliability in 30 women comparable to intended participants. All five questionnaires had acceptable reliability. Specifically, knowledge had a Kuder-Richardson 20 coefficient of 0.78, while the other 4 Likert-type questionnaires had Cronbach's alpha coefficients between 0.72 and 0.90. Data were analyzed by standard multiple regression. **Results:** Of five independent variables, attitudes toward contraceptive use, perceived behavioral control over contraceptive use, and perceived barriers to contraceptive use accounted for 18.2% of variance in contraceptive use ($F_{3,146}$ = 10.82, P < 0.01). **Conclusion:** Bangladeshi health care providers working with women seeking induced abortion should focus on encouraging women's attitudes towards contraceptive use, and decreasing women's perceived barriers to contraceptive use.

Keywords: contraceptive use, induced abortion, theory of planned behavior, Bangladesh

Introduction

It has been estimated that 210 million pregnancies occurring annually worldwide, about 46 million (22%) has been ended in abortion including unsafe abortion. Unsafe induced abortion is a critical public health problem because it is an important cause of maternal mortality in developing countries.[1] About 13% of 600,000 maternal deaths worldwide causes from complications of unsafe induced abortion.[2] Complications from abortion consist of hemorrhage, genital tract sepsis, uterine perforations, and trauma to cervix and surrounding organs, such as a urinary bladder or intestines.[3,4] In 2010, 646,600 Bangladeshi women had induced abortions for which 572,000 women had unsafe procedures leading to abortion complications.[5]

Induced abortion by menstrual regulation methods including the use of a manual vacuum aspiration (MVA) has been legalized as a part of Bangladesh's national program

since 1979 to save mother lives and to provide backup support for contraceptive use failure.[6] However, since 2012, MVA has been a primary popular tool for induced abortion at all levels of health care settings throughout the country. Induced abortion provided by government is free of charge but that provided by non-government organizations has various costs.[7] By law, trained nurses can use MVA in women with less than 8 week gestation age, while doctors permit to do so in women with up to 10 weeks of gestation.[8]

Contraceptive can be used to decrease induced abortion rates in every country. In 2012, women in the developing countries increase using contraceptive methods from 603 million in 2008 to 645 million in 2012.[4] Contraceptive prevalence in Bangladesh, also, has dramatically increased over the last 30 years from 8% in 1975 to 61% in 2011.[9] In spite of progress of contraceptive use in Bangladesh, there are some problems of contraceptive utilization causing contraceptive failure. These problems are discontinuation of contraceptive use, lack of knowledge, and misconception of proper contraceptive utilization.[10] These women with contraceptive use failure might have unplanned pregnancy leading to receive induced abortion service.

To have effective contraceptive use, people must have a strong intention to use it first. As theory of planned behavior (TPB) suggests that persons' behaviors are determined by their intention to perform such behaviors. Other than intention, the TPB adds that predictors of specific behaviors include attitudes toward those behaviors, subjective norms according to those behaviors, and perceived behavioral control over those behaviors.[11] In addition, according to contraceptive use, some researchers suggest that other important factors influence contraceptive use are knowledge related to contraceptive use and perceived barrier to contraceptive use.[12-16]

Factors affecting contraceptive use are clarified. Attitudes toward contraceptive use refer to persons' positive or negative feelings/beliefs about using contraceptive. If persons have positive attitudes toward contraceptive use, those persons tend to agree to use contraceptive.[17] Subjective norms toward contraceptive use mean how other people important to persons would like those persons to behave, or society pressures on persons to make a decision of using contraceptive.[18] Also, norm of preference for having sons over daughters is deeply rooted in Bangladesh.[19] Perceived behavioral control over contraceptive use is related to the awareness of the consequences of consistent contraceptive use. If persons are highly confident in their ability to engage in contraceptive use behavior, those persons are more likely to use contraceptives as they intend.[20] Contraceptive knowledge plays an important role to effective contraceptive use. Accurate knowledge of using various contraceptive method guides persons to choose their own appropriate contraceptive methods.[21,22] Perceived barriers to contraceptive use are factors hampering women to use contraceptive. These factors including economical problem, fear of side effects, uncooperative husband, limited or insufficient of family planning service and supply,[23] religious belief of sin to have contraceptive use,[23,24] and misperceptions about an abortion law such as a need for spousal authorization. In addition, being afraid of poor health care providers' attitudes can hinder women to access to a safe abortion.[25,26]

Previous studies examined the association of contraceptive use with only one to three variables of attitudes, subjective norms, knowledge, or barriers.[27-33] No study examined five factors (attitudes, subjective norms, perceived control, knowledge, and perceived barriers) associated with contraceptive use, especially, in Bangladeshi women seeking induced abortion. Therefore, the researcher aimed to investigate these predicting factors of contraceptive use among women seeking induced abortion in Bangladesh.

Methods

This predictive cross-sectional design research studied women seeking induced abortion, due to unwanted pregnancy, with legalized menstrual regulation method using MVA as a tool, at a family planning unit from Dhaka Medical College Hospital (DMCH), a government hospital in Dhaka, Bangladesh. Because main analysis of this study was multiple regression, it was recommended that the study needed 30 participants per one predictor.[34] This study had five predictors requiring number of participants as 5 x 30 equal to 150. Inclusion criteria for participants included 1) being a married woman, 2) being 18 years old or over, 3) having 8-10 week gestational age, and 4) speaking Bengali language fluently.

The researcher collected data by interview using a set of structured questionnaires as a guideline. The researcher primarily developed questionnaires in English based on the

TPB and literature review. Content of these questionnaires was validated by a panel of five nursing professors expert in a family planning area especially in contraception. Content validity indices in item-level had values ranging from 0.80 to 1.00. Because the interview would be done in Bangladesh, questionnaires had to be translated into Bengali language using the back-translation technique[35] by the researcher and other 3 bilinguals. These 3 bilinguals were native Bangladeshis, one worked as a professor in English language, one worked as a professor in Bengali language, and another one worked as a physician at a family planning unit in DMCH. The researcher tested reliability of the Bengali version questionnaires by using them with 30 women comparable to the participants. The Knowledge of Contraceptive Use Questionnaire has a reliability value of Kuder-Richardson 20 (KR-20) as 0.78, while other Likert-type scale questionnaires had reliability values of Cronbach's alpha ranging from 0.72 to 0.90. Thus, reliability of these new instruments was acceptable.[36]

Contraceptive Use Questionnaire refers to how consistency of women and their husband use contraceptive overtime. It contains 5 items of a 4-point Likert scale. Only item 5 has negative meaning. Possible range of its total score is 5 to 20. High score represents high consistency of contraceptive use.

Attitudes toward Contraceptive Use Questionnaire refers to women's positive or negative feelings/beliefs about using contraceptives in general, not toward a specific type of contraceptives. It consists of 16 items of a 5-point Likert scale. Item 2, 5, 9, 10, 13, and 15 have negative meaning. Total score ranges from 16 to 80. High score indicates positive attitudes toward contraceptive use.

Subjective Norms toward Contraceptive Use Questionnaire refers to women's perceptions of the approval of their contraceptive use by their significant persons including their husband, relatives, friends, parents, and health care providers. It has 15 items of a 5-point Likert scale. Item 10 and 15 have negative meaning. Total score is between 15 and 75. High score implies positive approval of contraceptive use from their significant persons.

Perceived Behavioral Control over Contraceptive Use Questionnaire refers to women's confidence in their ability to control themselves over their contraceptive use for preventing unwanted pregnancy. It consists of 7 items of a 5-point Likert scale. Total score ranges from 7 to 35. High score shows high confidence in their perceived behavioral control over contraceptive use.

Contraceptive Knowledge Questionnaire refers to women's understanding about benefits and appropriate contraceptive utilization. It is measured by 14 items requiring the response of "True," "False," or "Don't know." Incorrect or don't know answer gets zero point but correct answer gets one point. Item 3, 10, and 13 have negative meanings. High score means having more knowledge of contraceptive use.

Perceived Barriers to Contraceptive Use Questionnaire refers to women have obstacles in using contraceptive due to limited or insufficient contraceptive service or supply, fear of contraceptive side effects, and religious belief of prohibition to use contraceptive. This questionnaire contains 7 items of a 5-point Likert scale. Item 7 has negative meaning. Possible total score ranges from 7 to 35. High score illustrates high perceived barriers of contraceptive use.

Data collection procedures

The study was approved by the Institutional Review Board for Graduate Study, Faculty of Nursing, Burapha University and the director of DMCH. During 8 - 10 AM, while women were waiting for induced abortion procedures, women meeting inclusion criteria were recruited into the study by simple random sampling. The researcher informed the eligible women about the study purpose, human subject rights, and benefits of the study. If women voluntarily agreed to participate in the study, they signed a consent form. The researcher interviewed 10 participants each day to maintain the quality of data collection.

Data analysis

Statistical software was used for data analysis. Descriptive statistics, Pearson's correlation, and standard multiple regression were performed. A statistical significance was set at a type I error of 5%.

Results

Participants had average age of 27.73 years (*SD* = 5.18) and average monthly family income of 14,938.67 Taka (*SD* = 9,821.01; currency conversion: 3 Taka = 1 Baht). Most of them lived in urban areas (82%, *n* = 123), worked as a

housewife (70%, *n* = 105), and were Muslim (94.70%, *n* = 142). Half of them finished 10 years of education (52%, *n* = 78). Demographic data of participants are depicted in table 1.

Table 1 Demographic data of participants (*N* = 150)

	Frequency	Percent
Age (years)	Range = 19-42, *M* = 27.73, *SD* = 5.18	
19 - 24	43	28.70
25 - 30	72	48.00
31 - 36	24	16.00
37 - 42	11	7.30
Total	150	100.00
Residence		
Urban	123	82.00
Rural	27	18.00
Total	150	100.00
Education		
Primary (class 1 - 5)	47	31.30
Secondary (class 6 - 10)	78	52.00
College (class 11 - 12)	12	8.00
Higher education (bachelor degree or higher)	13	8.70
Total	150	100.00
Occupation		
Housewife	105	70.00
Government officer	5	3.30
Private organization employee	9	6.00
Student	22	14.70
Daily worker	5	3.30
Own business	4	2.70
Total	150	100.00
Religion		
Muslim	142	94.70
Hindu	8	5.30
Total	150	100.00
Monthly family income	Range in Taka = 4,000 - 50,000, *M* = 14,938.67, *SD* = 9,821.01	
(Taka) → (Baht)	Range in Baht = 2,000 - 20,000, *M* = 5,000, *SD* = 3,000	
4,000-14,000 2,000-5,000	85	56.70
14,001-24,000 5,001-8,000	40	26.70
24,001-34,000 8,001-11,000	16	10.70
34,001-44,000 11,001-15,000	5	3.30
> 44,000 > 15,000	4	2.70
Total	150	100.00

Regarding obstetric history, participants had average times of pregnancy as 3 (*SD* = 1.43), average times of abortion of 2 (*SD* = 0.66), average number of children of 2 (*SD* = 1.03), and average age of the last child of 3 years (*SD* = 3.18). According to history of contraceptive use, all participants had used contraceptives (100%) for which half of them chose oral pills as their contraceptive choice (52%, *n* = 78). Data of obstetric and contraceptive use history are shown in table 2.

Table 2 Obstetric and contraceptive use history (*N* = 150)

	Frequency	Percent
Number of pregnancy	Range = 1-7, M = 3.25, SD = 1.43	
Primigravida	22	14.70
Multigravida	128	85.30
Total	150	100.00
Number of abortion including this time	Range = 1-4, M = 1.53, SD = 0.66	
1	83	55.30
2	55	36.70
3	11	7.30
4	1	.70
Total	150	100.00
Number of children	Range = 0-5, M = 1.62, SD = 1.03	
0	22	14.70
1	44	29.30
2	60	40.00
3	18	12.00
4	5	3.30
5	1	0.70
Total	150	100.00
Age of last children (years)	Range = 0-18, M = 3.35, SD = 3.18	
0	22	14.70
1 – 6	100	66.70
7 - 12	26	17.30
13 - 18	2	1.30
Total	150	100.00
Contraceptive use before pregnancy		
No	0	0.00
Yes	150	100.00
Total	150	100.00
Contraceptive method use before pregnancy		
Oral pills	78	52.00
Condom	41	27.30
Injection	16	10.70
Intra uterine device (copper-T)	7	4.70
Norplant®	1	0.70
Safe period maintain	4	2.70
Withdrawal	3	2.00
Total	150	100.00

Before multiple regression analysis was performed, all of its assumptions were investigated. It was found that there was no multivariate outlier (Cook's distance values ranged from less than 0.01 to 0.05, centered leverage values ranged from less than 0.01 to 0.09, and probability of Mahalanobis chi-square ranged from 0.03 to 1). No autocorrelation was displayed (Durbin-Watson value of 1.99). No multicollinearity was shown (highest value of Pearson correlation coefficient among five independent variables was 0.27, tolerance values were greater than 0.10, variance inflation factor values were lesser than 10, condition indices of 5 from 6 dimensions were greater than 3 but such dimension had only one variable with a variance proportion value greater than 0.50). From scatter plots of regression standardized errors against regression standardized predicted values, it delineated that there were normality, linearity, homoscedasticity, and no outliers of errors. Therefore, all assumptions of multiple

regression were met. The results of standard multiple regression analysis are illustrated in table 3.

Table 3 Standard multiple regression analysis of various independent variables predicting contraceptive use (*N* = 150)

Independent variables	*B*	β
Attitudes toward contraceptive use	0.06*	0.20*
Subjective norms toward contraceptive use	0.03	0.10
Perceived behavioral control over contraceptive use	-0.12**	-0.28**
Contraceptive knowledge	0.04	0.04
Perceived barriers to use contraceptive	-0.07**	-0.21**

Intercept = 14.21*** R^2 = 0.19, *F* = 6.94***

Note: * denotes *P* < 0.05, ** denotes *P* < 0.01, *** denotes *P* < 0.001.

Regarding table 3, results of standard multiple regression analysis revealed that five independent variables accounted for 19.4% of contraceptive use variance (*F* = 6.94, *P* < .01). However, only three from five independent variables were significantly associated with contraceptive use. These significant independent variables were attitude toward contraceptive use (*B* = 0.06, β = 0.20, *t* = 2.55, *P* = 0.01), perceived behavioral control over contraceptive use (*B* = -0.12, β = -0.28, *t* = -3.49, *P* < 0.01), and perceived barriers to contraceptive use (*B* = -0.07, β = -0.21, *t* = -2.68, *P* < 0.01). But subjective norms toward contraceptive use and contraceptive knowledge were not statistically significantly associated with contraceptive use. Thereby, to get the exact percentage of explanation for variance in dependent variable from only significant variables, a standard multiple regression was rerun with only significant independent variables. All assumptions were met and the results of the rerun standard multiple regression are delineated in table 4.

Table 4 Standard multiple regression analysis based on 3 significant independent variables from the first analysis (*N* = 150)

Independent variables	*B*	β
Attitudes toward contraceptive use	0.06*	0.19*
Perceived behavioral control	-0.11**	-0.25**
Perceived barriers to contraceptive use	-0.07**	-0.21**

Intercept = 16.43*** R^2 = 0.18, F = 10.82***

Note: * denotes *P* < 0.05, ** denotes *P* < 0.01, *** denotes *P* < 0.001.

From table 4, the second standard multiple regression analysis was performed with 3 significant independent variables entered in the model simultaneously having the depend variable as contraceptive use. Results revealed that contraceptive use, perceived behavioral control over contraceptive use, and perceived barriers to contraceptive use accounted for 18.2% of the variance in contraceptive use ($F_{3,146}$ = 10.82, *P* < 0.01). The strong predictors of contraceptive use were attitudes toward contraceptive use (β = 0.19, *t* = 2.47, *P* = 0.02), perceived barriers to contraceptive use (β = -0.21, *t* = -2.69, *P* < 0.01), and perceived behavioral control over contraceptive use (β = -0.25, *t* = -3.22, *P* < 0.01), respectively.

Discussion and Conclusion

Only three (from five) independent variables of attitudes toward contraceptive use, namely perceived behavioral control over contraceptive use, and perceived barriers to contraceptive use were associated with contraceptive use behaviors. For positive association between attitudes toward contraceptive use and contraceptive use, it could be explained that because all participants previously used contraceptive, they might perceive benefits of contraceptive. Also, most of them lived in urban area that could easily access to contraception service and supply. This might contribute to having positive attitude towards contraceptive use. This result was supported by the TPB asserting that if persons had positive beliefs in the benefits of specific behaviors, those persons were more likely to perform such behaviors.[11,37] The result was consistent with the study in Bangladesh finding that adolescents' positive attitudes were correlated to their intention to use birth control methods.[38]

The negative association between perceived behavioral control over contraceptive use and contraceptive use could be illuminated that although all participants previously used contraceptives, all of them failed to use it effectively since all sought for induced abortion. The rationale might be that participants had low commitment to control themselves in using contraceptive consistently. Also, with Muslim belief in God, they might have less sense of control due to letting God decide persons' destiny. Moreover, they might think that if they had a problem of contraceptive use failure, they could rely on free of charge induced abortion service to help terminate unplanned pregnancy. However, this finding was in contrast to other studies that perceived behavioral control was positively associated with contraceptive use.[39,40]

Negative association between perceived barriers to contraceptive use and contraceptive use could be described that half of participants had low family income, they might not be able to afford contraceptive supply. Also, all of them were Muslim, they might perceive that using contraceptive is against the will of God. In addition, they might hear others saying about side effects of contraceptives than its benefits leading them to fear of the side effects. Furthermore, most of them were housewives having their husband as a family leader. Thus, if their husband was not cooperative in contraceptive use, participants tended to use contraceptive less. This finding was consistent with several studies in Bangladesh reporting that perceived barriers such as no cooperation from husband, fear of side effects, religious barrier, or economical constraints were correlated with contraceptive use.[23,41,42]

Contraceptive use knowledge and subjective norms to contraceptive use were not significantly associated with contraceptive use. For no association between contraceptive use knowledge and contraceptive use behavior, it can be explained that with only 10 years of education among half of the participants, they could have not learned about contraception. Also, sexual issues in their education were not adequately and openly discussed due to their culture of embarrassment. The finding was in contrast to other studies finding that there was positive relationship between contraceptive knowledge and contraceptive use.[13,43,44]

For no association between subjective norms to contraceptive use and contraceptive use behavior, it can be delineated that half of participants were in adult age (25 - 30 years old), and most participants lived in modernized area. These modern female adults might feel independent. They might make a decision of contraceptive use without relying on the approval from others even from their significant persons. This study finding was in contrast to the study in Pakistan revealing that subjective norms were obstacles to contraceptive use.[45]

The strength of this study is the exposure to legalized abortion in Bangladesh while it is still sensitive and illegal in many countries. However, the study has some limitations. Firstly, since participants were from Dhaka Medical College Hospital, Bangladesh, the results of study cannot be generalized. Secondly, all participants had used contraceptives, but failed to do so. This led to having unplanned pregnancy and seeking for induced abortion. That means all participants were homogenous in contraceptive use failure causing the unexpected results of no having significant association between knowledge and contraceptive use but having significantly negative association between perceived control and contraceptive use.

Thus, the study has some recommendations to national and regional policy and nursing practice. For national policy, the government should focus more on a policy of contraceptive use instead of that of abortion. At regional level, a campaign of promoting contraceptive use focusing on prevention rather than treatment might reduce induced abortion rate. In practice, health care providers should encourage spouses to have positive attitudes toward effective and consistent contraceptive use, as well as, help them reduce barriers to access to contraception service.

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