

Microfinance participation and contraceptive use: does control over resources matter?

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ABSTRACT

Background The purpose of the present study was to assess the association between microfinance and contraceptive use. A secondary purpose of the study was to assess the role of control over resources between microfinance participation and contraceptive use.

Method Using secondary data from Bangladesh Demographic and Health Survey 2011 the present study conducted logistic regression analysis to estimate the interaction effect of microfinance participation and control over resources on reported contraceptive use.

Results Findings indicate that microfinance participants are 1.69 times more likely to use contraceptive ($P < 0.001$), and women with control over resources are 4.28 times more likely to use contraceptive ($P < 0.001$). However, the interaction effect of microfinance participation and control over resources suggest that microfinance participants with control over resources are less likely to use contraceptive, but that finding is not significant.

Conclusion While control over resources matter the most in terms of women's use of contraceptive, this does not hold true for microfinance participants with control over resources.

Keywords Bangladesh, contraceptive use, control over resources, microfinance, micro-entrepreneurship

Introduction

Bangladesh has made tremendous progress in improving national rates of maternal health and mortality to meet the Millennium Development Goal of reducing the maternal mortality rate by three-quarters between 1990 and 2015, indicating that contraceptives have been successfully used to achieve its public health directive of enhancing family planning initiatives and delaying child birth.¹

Approximately 61% of women of child bearing age use contraceptives in Bangladesh according to the General Economics Division of the Bangladesh Planning Commission.² In a Muslim majority country where contraceptives were given deceptively and used as a repressive tool during the period of British colonization it is important to understand how prioritizing maternal health fits into the overall public health agenda, in terms of planning and timing of births, in contrast to any political agenda of reducing population growth.³ An important consideration is the high prevalence of microfinance programs that

allow women to become microentrepreneurs by accessing a micro loan, which is touted to have positive ramifications for women in terms of their ability to be assertive and have control over their sexual and reproductive health.⁴ But few recent studies use national samples to document whether microfinance participation is associated with specific aspects of reproductive health, such as contraceptive use, and there are no studies to our knowledge that examine how control over resources may be associated with contraceptive use in Bangladesh.

Extant literature identifies several pathways via which microfinance participation may be linked to contraceptive use. One body of literature suggests that children are considered 'productive labor' in developing countries, which influences a reduction in contraceptive use in order to have more children to make use of that labor.⁵ Another, contradictory, body of literature suggests that women's economic

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participation increases the demand for contraceptives as women in the labor force tend to prefer smaller family sizes.⁶ Additionally, having access to finances via microfinance makes contraceptives accessible, financially, while also giving women the 'power' to assert themselves, particularly when it pertains to their own health.⁶ Microfinance also increases the social networks of women, thus providing them with help-seeking social networks in multiple domains, including in reproductive health.⁷ Other studies suggest that it is not access to finances, but whether women have control over their finances, that allow women to be assertive and take control over their own reproductive lives via use of contraceptives.⁸

Other factors that are known to affect contraceptive use are the presence of young children, whether the last pregnancy was unintended, desire for more children, HIV literacy and demographic factors, including age, wealth and urban residence.^{9–12}

Hypotheses

Research on economic interventions like microfinance and reproductive health outcomes in Bangladesh are primarily from the 1990s. Research indicates that microfinance participants are more likely to use contraceptives given there is increase in awareness about reproductive health as well as freedom and mobility that allow women to access reproductive health services.¹³ Other studies indicate a significant interaction effect between contraceptive use and economic freedom on women's participation in microfinance, introducing the idea of reverse causality.¹⁴

As such, the purpose of the present study was to assess the association between microfinance and contraceptive use. A secondary purpose of the study was to assess the role of control over resources between microfinance participation and contraceptive use, controlling for factors that are known to affect contraceptive use, as identified above.

To our knowledge, this is the first study to do this. The associated hypotheses are as follows:

H1 Women participating in microfinance are more likely to use contraceptives than nonparticipants.

H2 Women with more control over resources are more likely to use contraceptives than women without control over their own resources.

H3 Microfinance participants with control over their resources are more likely to use contraceptives than microfinance participants without control over their resources.

Methods

Data

The current study uses the nationally representative Bangladesh Demographic and Health Survey 2011¹³ with a probability sample of 17 842 women to estimate the effect of microfinance participation on contraceptive use and the interaction effect of microfinance participation and control over resources on contraceptive use. The study sample, however, after accounting for missing data consists of 7325 women.

Variables

'Contraceptive use' was measured as a dichotomous variable where women who responded yes to the question about whether they currently used traditional methods of contraception or modern methods of contraception were identified as contraceptive users. 'Microfinance participation' was measured as a dichotomous variable through questions that asked respondents to select if they were part of the following microfinance organizations: Grameen, Brac, ASA, Proshika, Mother's Club, BRDB or other. Respondents who selected any one of the above organizations were deemed a participant of microfinance. 'Control over resources' was measured based on the question 'Who makes decisions about respondent's earning?' Respondents who reported that they had full or joint control over their earnings were deemed to have control over their financial resources.

Variables that were found to be associated with contraceptive use in the literature were included as 'control variables': women's physical mobility, household decision-making power, children under the age of 5 years, last pregnancy was unintended, desire for more children, HIV literacy and demographic factors, such as age, wealth and urban residence. Physical mobility was measured by questions regarding whether women can go out at all and whether they do go out alone to seek health services. HIV literacy was based on correct responses to four HIV related statements: (i) a normal looking person can have HIV; (ii) HIV can be transmitted by sharing food; (iii) HIV can be transmitted through pregnancy and (iv) HIV can be transmitted during delivery of children. Household decision-making power was measured based on whether women had a role in decision-making regarding any of the following questions: who makes decisions regarding large purchases? Who makes decisions regarding small purchases? Who makes decisions about visiting friends and family? The

Table 1 Sample characteristics

	Sample size	Population distribution
All	7325	100.0
<i>Key dependent variable</i>		
Contraceptive use		
Yes	4882	65.9
<i>Independent variables</i>		
Microfinance participation		
Yes	2559	34.8
Control over resources		
Yes	684	9.03
Physical mobility		
Yes	5805	78.4
Household decision-making power		
Yes	5122	69.4
Last pregnancy unplanned/unwanted		
Yes	6336	86.1
Desire for more children		
Yes	2716	37.2
Children under 5 years of age		
Yes	6668	90.8
HIV literacy		
Yes	5158	69.7
Media exposure		
Yes	4803	64.8
Respondent age		
15–24	3565	49.5
25–34	3061	41.4
35–44	652	8.5
45+	36	0.5
Respondent education		
No education	1332	19.2
Primary	2193	13.2
Secondary	3174	43.1
Higher	626	7.5
Current employment		
Yes	766	10.2
Urban		
Yes	2328	23.4
Wealth assets		
Yes	4399	58.0

control variables including the demographic variables were used in their dichotomous forms (1 = yes, 0 = no).

Analytic plan

Univariate descriptive statistics of the key independent variables, microfinance participation and control over resources, and dependent variable, contraceptive use and the control

variables were generated to describe the study population (see Table 1).

Bivariate associations between the independent variables and domestic violence were calculated using Chi Square tests (see Table 2).

A logistic regression was run to model contraceptive use (see Table 3). One fully adjusted model was created to analyze the appropriate binary value for contraceptive use. All covariates were simultaneously inserted into the regression model. Odds ratios were estimated to assess the associations. In bivariate and multivariate analyses, survey techniques in Stata Version 13.1 (StataCorp LP, College Station, TX) were used to account for the complex survey design of BDHS while calculating the standard errors. The significance level was set at $P < 0.05$ (two-tailed) in all the analyses. Multicollinearity was assessed using the standard errors of the regression coefficients. The standard errors of all independent variables were below one, which is known to indicate the absence of multicollinearity.^{14–16}

Results

Sample characteristics

As Table 1 shows, ~66% of the study population reported to use contraceptives while ~35% participated in microfinance, while only 9% reported to have control over their resources. On the other hand, 78.4% reported to have physical mobility, while 69.4% reported to have independent or shared household decision-making power. On the other hand, 78.4% reported to have physical mobility, while 69.4% reported to have independent or shared household decision-making power. Fourteen percent of the study population reported that their last pregnancy was unplanned or unwanted while 37.2% reported that they desired more children and 90% of the study participants had children under the age of 5 years. Of the case, ~65% had exposure to media (TV, radio, newspapers), 23.4% resided in urban areas and 58% of the study participants reported to own wealth assets. A majority of the study participants had some education—30.2% had primary education and 43.1% had secondary education—and most of the study participants were between 15 and 24 years of age (49.5%). Of the case, ~10% were employed at the time of the interview.

Bivariate associations

Table 2 shows the results from the Chi Square tests that revealed bivariate associations between all independent variables and dependent variable, contraceptive use. Results indicate that contraceptive use was significantly more likely

Table 2 Bivariate associations between the dependent and independent variable^a

	Contraceptive use (N = 7325)
<i>Independent variables</i>	
Microfinance participation	
No	62.0***
Yes	73.1
Control over resources	
No	64.5***
Yes	80.3
Physical mobility	
No	60.1***
Yes	67.5
Household decision-making power	
No	57.3***
Yes	69.7
Last pregnancy unplanned/unwanted	
No	71.6***
Yes	65.0
Desire for more children	
No	66.0
Yes	65.7
Children under 5 years of age	
No	50.8***
Yes	67.2
HIV literacy	
No	61.6***
Yes	67.7
Media exposure	
No	63.0**
Yes	67.4
Respondent age	
15–24	62.4***
25–34	68.4
35–44	75.2
45+	51.1
Respondent Education	
No education	63.1***
Primary	66.8
Secondary	64.8
Higher	75.5
Current employment	
No	65.0***
Yes	73.7
Urban	
No	63.5***
Yes	73.7
Wealth assets	
No	65.6
Yes	66.1

** $P < 0.01$, *** $P < 0.001$.^aBased on population estimates.**Table 3** Logistic regression: associations between contraceptive use and independent variables

<i>Logistic regression</i>	Contraceptive use N = 5284 Design df = 580 F (17, 564) = 11.27 Prob > F = 0.000	
	OR	95% CI
Microfinance participation (MP)	1.69***	1.43, 1.91
Control over resources (CR)	4.78***	2.3, 7.90
MP × CR	0.94	0.54, 1.64
Physical mobility	1.03	0.87, 1.22
Household decision-making power	1.33***	1.14, 1.55
Last pregnancy unplanned/unwanted	0.88	0.67, 1.14
Desire for more children	1.34***	1.14, 1.57
Children under 5 years of age	1.97***	1.58, 2.49
HIV literacy	1.10	0.97, 1.25
Media exposure	1.09	0.91, 1.33
Respondent age		
15–24 (Ref.)		
25–34	1.29***	1.10, 1.53
35–44	2.17***	1.56, 3.00
45+	0.52	0.12, 2.20
Respondent education		
No education (Ref.)		
Primary	1.08	0.84, 1.41
Secondary	1.00	0.77, 1.30
Higher	1.36	0.97, 1.90
Current employment	0.43***	0.26, 0.71
Urban	1.57***	1.03, 1.86
Wealth assets	0.75***	0.61, 0.89

*** $P < 0.001$.

among microfinance participants, individuals with control over their resources, physical mobility and household decision-making power, individuals who reported their last pregnancy to be unplanned, individuals who reported to have higher education, were older, were employed, had children under 5 years of age, had media exposure, lived in urban areas and were HIV literate. No significant association was found between contraceptive use and wealth assets and desire for more children. However, they were still retained in the multivariate model given its relevance as indicated in the literature.

Multivariate analysis

Logistic regression results indicated that the adjusted odds of contraceptive use was significantly higher among microfinance participants compared to individuals who did not participate in microfinance (OR = 1.69; CI = 1.43, 1.91) as well

as individuals who had control over resources compared to those who did not (OR = 4.78; CI = 2.3, 7.90) but the interaction effect of microfinance participation and control over resources on contraceptive use was not significant.

Additionally, respondents who reported to have household decision-making power were more likely to use contraceptives (OR = 1.33; CI = 1.14, 1.55), but respondents who reported to have physical mobility were equally likely to use contraceptives as those who reported to not have physical mobility.

Respondents between the age of 25 and 34 years (OR = 1.29, CI = 1.10, 1.53) and 35 and 44 years (OR = 2.17; CI = 1.56, 3.00) were more likely to use contraceptives as compared to respondents between 15 and 24 years. Respondents who desired more children were more likely to use contraceptive compared to those who did not desire more children (OR = 1.34, CI = 1.14, 1.47); respondents who had children under 5 years of age were more likely to use contraceptives as compared to women who did not (OR = 1.97; CI = 1.58, 2.49) and women in urban areas were more likely to use contraceptive than women in rural areas (OR = 1.59; CI = 1.34, 1.88).

On the other hand, employed women and women with wealth assets were less likely to use contraceptives than women who were not employed (OR = 0.43; CI = 0.26, 0.71) or owned wealth assets (OR = 0.75; CI = 0.61, 0.89).

Goodness of fit was tested using *svylogitgof*, which estimated the *F*-adjusted mean. The *F*-adjusted test statistic was $F(9, 572) = 7.24, P < 0.001$.

Discussion

Main findings

The results of this study confirm an association between microfinance participation and contraceptive use in Bangladesh, which suggests that microfinance may be a beneficial path to achieving the Millennium Development Goal of decreasing maternal mortality, given that effective use of contraception decreases maternal mortality rates, through mechanisms such as improving pregnancy intervals.^{17,18} Contraceptive use was also significantly higher in women who reported having control of resources, which suggests that decision making related to family resources may often translate into more control over reproductive healthcare. This parallels findings from another study suggesting that autonomy over resources positively influenced use of maternal healthcare.¹⁹ Women who are older and women who wish to have more children were more likely to use contraception, which, on one hand, is consistent with results suggesting that regular contraceptive use tends to increase as women in developing nations age,²⁰ yet is contradictory to studies suggesting that women in India, Malaysia, Thailand and the Philippines

are less likely to use contraception when more children are desired.²¹ Results from the current study also suggest that women with children age 5 and younger were more likely to use contraception, which may indicate that women who already have young children value the ability to control the spacing and timing of subsequent births. In addition, women living in rural areas were less likely than their urban counterparts to use contraception, which may be evidence of problems with reproductive health access in rural areas in developing nations. Such results are consistent with those comparing contraceptive use in rural and urban Ethiopian women.²² Interestingly, women who were employed were less likely to use contraception, which contradicts a study suggesting that women empowered through education and employment were more likely to use contraception in Oman.²³

What is already known

Research on economic interventions like microfinance and reproductive health outcomes in Bangladesh are primarily from the 1990s. Research indicates that microfinance participants are more likely to use contraceptives given there is increase in awareness about reproductive health as well as freedom and mobility that allow women to access reproductive health services.⁶ Additionally, women's participation in microfinance increases the demand for contraceptives as working women tend to prefer smaller family size.⁶ Microfinance participation, at the same time, gives women financial power to access contraceptives and other health services.⁶ As such, microfinance may increase opportunities for improved reproductive health.⁷ However, women's control over their finances is most likely to inform the choices they have regarding their own health.⁸

What this study adds

The current study uses the most recent available data to assess the role of microfinance on contraceptive use, and provide an understanding of the role of control over resources on contraceptive use. To our knowledge, this is the first study to do so. The non-significant finding regarding the interaction effect between microfinance participation and control over resources is unique and may suggest an unmet need for contraception in Bangladesh, even for women with the resources to access contraception. It may also suggest that working women with resources desire more children because they would have increased financial ability to care for them.

Limitations of the study

The study is limited in its ability to establish causality given cross-sectional nature of data. However, the generalizability of

the findings increases the external validity of the study. The study is also prone to social desirability bias from self-reports. Future studies, given funding and resources, could circumvent such issues by using panel data and observational data.

Conclusion

In conclusion, while the results of the current study do not suggest an interaction effect of microfinance and control over resources on contraceptive use, they do suggest an important association between microfinance and contraceptive use. While additional research is needed to determine more about the nature of this relationship, this association provides evidence of the potential positive impact that microfinance may have on maternal health, in addition to the economic impact, which was the original intension of microfinance programs.

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