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Do women know about what to do with skipped pills: Evidence from rural Bangladesh

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Abstract

The present study examines knowledge about correct actions with skipped oral contraceptive pills in rural Bangladesh. Although the majority of the pill users knew about what to do with one skipped pill, about one in ten had the correct knowledge about actions with two or three skipped pills. Logistic regression analysis identified predictors of correct knowledge about actions with the skipped pills. The present study underscores the need for providing women with more comprehensive, reliable, and updated information about how to take pills correctly.

Keywords: knowledge, skipped pills, rural Bangladesh.

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Introduction

Bangladesh has achieved a considerable increase in contraceptive use over the past decades, resulting in a considerable decline in fertility. The contraceptive prevalence rate (CPR) has increased steadily from 8% in mid 1970s to 54% in 2000, while the total fertility rate (TFR) has declined from 6.3 children per woman to 3.3 children per woman during the same period (NIPORT, 2001). It is, however, observed that the pace of fertility decline has slowed in the most recent period compared to the rapid decline during late 1980s and early 1990s. One specific concern about the use of contraceptive methods has not been adequately explored; the ability of predominantly illiterate or poorly educated persons to practice those methods that require repeated or daily actions, such as the oral contraceptive pills.

Oral contraceptive pills are by far the most popular form of reversible contraceptives used in Bangladesh. Over the last two decades, there was a seven-fold increase in pill use in Bangladesh; about 23% of the women of reproductive age were currently using pills accounting for 53% of all modern method use and 43% of total contraceptive use in Bangladesh (NIPORT, 2001). It is well documented that contraceptive pills are highly effective in preventing conception, however, incorrect use is often cited as the major cause of their failure (Trussell and others, 1990). The efficacy of pill use is associated with women's pill use-related behaviors, especially the consistency with which they take pills (Binagiano, 1992). One study estimated the first-year pregnancy rates to be 3.8% for women who were more likely than average to use the pill correctly and consistently, and 8.7% for women who were less likely to do so (Harlap and others, 1991). Research also showed that women who did not have an established routine for pill-taking were 3.6 times more likely to miss two or more pills per cycle when compared with women who had a routine (Rosenberg and others, 1998). Another study based on 6,676 European women found that women who skipped one or more pills per cycle were three times as likely to experience an unintended pregnancy (Rosenberg and others, 1995). In addition, poor pill taking can pose adverse consequences on women's health, and as such could have long-term complications (Rosenberg and others, 1999).

Available evidence suggests that many women do not use the pill correctly and consistently; data on women's daily adherence to a pill regimen have shown that some women take the pills only when they are living with their husbands, or skip the pills when their husbands are away (Potter, 1991). This study has also documented that many pill users choose to skip pills when they experience side effects or other physical discomforts. Another study on adherence to oral pill regimens in four developing countries demonstrated that many women were not taking pills properly or adequately for full protection (Hubacher and Potter, 1993). Depending on country and particular type of pill-taking error, the prevalence of incorrect use among the current pill users ranged from 5% to 89%. In Bangladesh, a study conducted among 175 pill users in rural areas demonstrated a disturbing level of non-compliance with pill use (Seaton, 1985). This study found that on an average, the pill users had taken two to three pills too many or too few each week, with 87% having skipped at least one pill per cycle. A recent study among 801 pill users in rural Bangladesh revealed that about half of the pill users (49%) skipped one or more pill(s) during the six months before the survey (Khan et al., 2002). Available evidence suggests that failure to take correct actions with the skipped pill(s) is one of the important forms of oral pill non-compliance (Trottier et al., 1994; Hubacher and Potter, 1993). Given these circumstances, it seems that contraceptive pill's reliability may be compromised if the pill users fail to take correct actions with the skipped pills. At this stage, it is warranted to gain an understanding of women's knowledge about what to do if hormonally active pills were skipped. The importance of the present study is in the provision of information that policy makers and health care providers could use to formulate promoting strategies to improve the pill-taking behaviors of rural Bangladeshi women.

Data and Methods

A nationally representative cross-sectional survey was conducted among the oral pill users in rural Bangladesh between April 1995 and June 1996 to investigate the level of knowledge, attitudes, and practices (KAP) concerning specific issues of oral contraceptive compliance (PDEU, 1997). A three-stage sampling procedure was employed to select the pill users for the survey. At the first stage, proportional allocation was used to select the number of *unions*, the smallest administrative units of the country, from the five administrative divisions of the country. In the second stage, one work area, called *unit*, covered by a family planning (FP) fieldworker was drawn randomly from each of the selected unions. The list of pill users in the selected units, obtained from Family Welfare Assistant (FWA) registrars, was then used as a frame for drawing the sample for the survey. The FWA registrars, maintained by FP fieldworkers, contained information on contraceptive use of all currently married couples who were living in the catchment area of the fieldworkers. These registrars were updated after every two months through home visits by the FP fieldworkers. The ultimate sampling units, the pill users were then drawn randomly from the selected units. The present study was based on 1600 pill users, current or past, who were served by field-workers, predominantly from non-government organizations (NGOs). All the study participants were using 28-day pill pack with 21 hormonally active pills and seven iron pills or placebos.

To evaluate the knowledge about correct actions with skipped pills, all the study participants were asked about what should be done if hormonally active pills were skipped? In addition to measure the frequencies related to skipped pills, an attempt was made to identify factors that were associated with correct knowledge about what to do with skipped pills. Knowledge about correct actions with skipped pills was considered as the outcome variable for this analysis. Three logistic regression models were constructed based on knowledge about correct actions with one, two, and three skipped pills.

Initially, using chi-square or t-tests we identified variables with potential contributions to the outcome variables. This list of identified variables included: woman's age, woman's education, husband's education, husband's occupation, religion, administrative division, land ownership, access to television or radio, number of living children, home visits by field workers, source of knowledge, source of supply, pill use as first method of contraception, husband's encouragement in pill use, duration of pill use, and experience of side effects. It was observed that husband's education was significantly associated with his occupation and his wife's education, and therefore was decided not to include in the initial multivariate models. While conducting the logistic regression analyses, backward elimination was used to choose the best-predicted models. Variables having significant association with the correct knowledge about skipped pills are presented in Tables 1 to 3. For each model, the variables that could not attain a statistical significance but were in the initial multivariate model are listed at the bottom of each table. In this paper, pill refers to hormonally active oral contraceptive pill, and correct knowledge refers to knowledge about correct actions with skipped pills.

Results

All women studied were currently married, living in rural areas of Bangladesh, and were predominantly Muslim (91.4%). The mean age of the respondents was 29.3 years (SD 7.58 years) with an average of 3.0 children (SD 1.87). The respondents were current or past pill users with average pill use duration of 2.3 years (SD 2.27 years). More than half of the women (54%) interviewed had no formal education, however, their spouses were slightly more educated (44% no schooling). About half of the women (47%) reported of not having had any land for cultivation, while more than one-third of them (38%) reported agriculture as their husbands' main occupation. [data not shown].

Knowledge about action with one skipped pill

In response to a question "What should be done with a hormonally active skipped pill?", only 3% of the pill users reported that they did not know anything about action with a skipped pill (51 of 1600), and the rest had some information, correct or incorrect (n=1549).

With skipping of an active pill, the universally recommended action is to take the skipped pill as soon as remembered, no matter what time it is, and then take the next pill at the regular time, even if it means taking two pills in one day (Hatcher and others, 1998). The majority of the pill users (88%) reported that they had correct knowledge about what to do with a skipped pill (1369 of 1549). Logistic regression analysis revealed that husband's encouragement was the strongest predictor of knowledge about correct actions with a skipped pill (Table 1). Women whose husbands had encouraging role in their pill use had double the chance of having had knowledge about correct actions with one skipped pill compared to their counterparts without any such support (OR=2.0; 95% CI: 1.4-2.7). As expected, women's education was positively associated with correct knowledge; women with some education had 50% more chance of having had correct knowledge compared to their uneducated counterparts (OR=1.5; 95% CI: 1.1-2.0). Although there was no trend of correct knowledge with the number of living children, women with five or more children had two-thirds the chance of having had correct knowledge about a skipped pill than were women with two children or less (OR=0.7; 95% CI: 0.5-0.99).

Table 1: Logistic regression estimates of odds ratios (ORs) and confidence intervals (CIs) for association between knowledge about correct actions with ***one skipped pill*** and the socio-demographic characteristics of the pill users, rural Bangladesh, 1995-96

Characteristics	Adjusted-OR	95% CI
Woman's Education		
None	1.00§	
Some	1.46*	1.05 – 2.02
Number of living children		
0 – 2	1.00§	
3 – 4	1.11	0.77 – 1.62
5 +	0.67*	0.45 – 0.99
Husband's encouragement in his wife's pill use		
No	1.00§	
Yes	1.97****	1.43 – 2.71
Hosmer-Lemeshow goodness of fit: χ^2=4.64; df=8; p=0.79		

* Wald p <0.05; **** Wald p <0.0001
§ reference category

Note: Variables not entering in the model are not shown in the table, these include: *husband's occupation, access to television/radio, and field worker's visit.*

Knowledge about actions with two skipped pills

About a quarter of the pill users did not have any idea about what should be done with two skipped pills (383 of 1600), while the rest had some understanding about actions with skipped pills, correct or incorrect (n=1217).

If someone skipped two active pills, it is recommended to take two pills as soon as remembered, and takes two pills in the next day, and then continue to take the rest of the pills at the regular time. In addition, use of a back-up contraceptive method is also recommended for the rest of that cycle (Hatcher and others, 1998). The findings of the present study revealed that only 11% of the pill users had correct knowledge about what to do with two skipped pills (138 of 1217). Multivariate analysis identified two predictors of correct knowledge about two skipped pills: field-worker's visit and administrative division (Table 2). Women who were visited by the field-workers were 2.6 times more likely to know correct actions with two skipped pills than were women who did not have any such visits (OR=2.6; 95% CI: 1.5-4.4). The analysis also revealed that correct knowledge varied across different parts of the country; for example, women of Dhaka and Rajshahi divisions had almost half the chance of having had correct knowledge with two skipped pills than were women of Chittagong division (Table 2).

Table 2: Logistic regression estimates of odds ratios (ORs) and confidence intervals (CIs) for association between knowledge about correct actions with ***two skipped pills*** and the socio-demographic characteristics of the pill users, rural Bangladesh, 1995-96

Characteristics	Adjusted-OR	95% CI
Division		
Chittagong	1.0§	
Dhaka	0.51*	0.30 – 0.87
Rajshahi	0.48**	0.29 – 0.79
Khulna/Barishal	0.78	0.46 – 1.33
Field worker's visit		
No	1.0§	
Yes	2.57***	1.49 – 4.43
Hosmer-Lemeshow goodness of fit: χ^2=0.30; df=4; p=0.99		

* Wald p <0.05; ** Wald p <0.01; *** Wald p <0.001
§ reference category

Note: Variables not entering in the model are not shown in the table, these include: *education, husband's occupation, religion, land ownership, duration of pill use, access to television/radio, experience of side effects, source of knowledge and supply.*

Knowledge about actions with three skipped pills

While examining what should be done with three skipped pills, somewhat surprisingly more than one-third of the pill users did not know what to do if three active pills were skipped (579 of 1600), however, the rest had some information, correct or incorrect, about actions with three skipped pills (n=1021).

For three skipped pills, it is recommended to use a backup contraceptive method until the start of a new pill pack (Hatcher and others, 1998). Of great concern is that only one in ten pill users had the correct knowledge about what actions to be taken if three active pills were skipped (105 of 1021). Multivariate analysis revealed that women's education was the strongest predictor of having had correct knowledge about what to do if three active pills were skipped (Table 3). Women with some education were 2.3 times more likely to have the correct knowledge than were women who did not have any formal education (OR=2.3; 95% CI: 1.4-3.7). Correct knowledge decreased with the increase of number of living children; for example, women with five or more children had one-third the chance of knowing correct actions with three skipped pills compared to women with two children or less (OR=0.3; 95% CI: 0.2-0.7). Women who had access to television or radio, or had some land for cultivation were more likely to be well informed about correct actions with three skipped pills than their respective counterparts. The analysis also showed that compared to first time contraceptive method users, women who had used other method before pill had double the chance of having had the correct knowledge about what to do if three pills were skipped (OR=2.1; 95% CI: 1.35-3.30).

Table 3: Logistic regression estimates of odds ratios (ORs) and confidence intervals (CIs) for association between knowledge about correct actions with ***three skipped pills*** and the socio-demographic characteristics of the pill users, rural Bangladesh, 1995-96

Characteristics	Adjusted-OR	95% CI
Education		
None	1.0§	
Some	2.29***	1.43 – 3.66
Number of living children		
0 – 2	1.0§	
3 – 4	0.56*	0.35 – 0.91
5 +	0.32**	0.15 – 0.70
Land ownership		
No	1.0§	
Yes	1.66*	1.05 – 2.60
Access to television/radio		
No	1.0§	
Yes	1.87*	1.13 – 3.10
Used other contraceptive before pill		
No	1.0§	
Yes	2.11***	1.35 – 3.30
Hosmer-Lemeshow goodness of fit: χ^2=2.63; df=8; p=0.96		

* Wald p <0.05; ** Wald p <0.01; *** Wald p <0.001
§ reference category

NB: Variables not entering in the model are not shown in the table, these include: age, husband's occupation and encouragement in pill use, source of knowledge, and source of supply.

Discussion

While the oral pill is universally known method of contraception among currently married women in Bangladesh, the results of the present study revealed that a sizeable proportion of pill users did not have any information about what to do if two or three active pills were skipped (24% and 36%, respectively). Among the pill users who had some information, only one in ten exactly knew about what to do with two or three skipped pills. This situation gets worse if the women with no information about actions with skipped pills are assumed to have incorrect information. In that case, for example, only 7% of the pill users had correct knowledge about actions with three skipped pills. This poor knowledge about skipped pills is of great concern for the country's family planning program because interrupted use through skipping pills is fairly common in Bangladesh (Khan and others, 2002). In addition, the contraceptive protection is expected to decrease when two or more consecutive active pills are skipped (Hatcher and others, 1998).

Multivariate analysis revealed that women's education was positively contributing to the knowledge about correct actions with skipped pills. This may be perhaps because education is the pathway of communicating any message; women with some education can read the pill use instructions on their own, and could enjoy more access to information of correct pill use. This finding resembles the idea demonstrated in another study that women with no education were more likely to take an incorrect action after missing one pill (Hubacher and Potter, 1993).

Women who were encouraged by their husbands in their pill use were well informed about action with one skipped pill. This finding is supported by a similar study conducted in Egypt that women were more likely to take their pills correctly when their partners were involved (Trottier et al., 1994). In addition, husband's lack of support was also found as a significant predictor of discontinuation of pill use in rural Bangladesh (Khan, 2001). There is also evidence to suggest that husbands could play an important role in helping their wives use contraceptive methods correctly, especially when social restrictions limit women's mobility (Tefere and Larson, 1993). This could perhaps be truer in a traditional society like Bangladesh where an imbalance of power between men and women exists. The opinions of men are often dominant in the decision making process in order to delay or avoid bearing more children. Reaching men regarding reproductive health issues received considerable global attention after the 1994 International Conference on Population and Development (ICPD). Following ICPD, the Government of Bangladesh (GoB) has recognized the importance of men's involvement in reproductive health; however, specific initiatives to motivate or to involve men in the country's family planning (FP) program are yet to be taken.

Contact with service providers was found to be positively associated with correct knowledge about actions with skipped pills. Earlier research demonstrated that field-worker's home visits effectively facilitated consistent (Khan et al., 2002) and continued (Khan, 2001) use of pills in rural Bangladesh. This finding underscores the need for regular and effective contact with health care providers. Recently, the FP program of Bangladesh has shifted its emphasis from home delivery to a fixed-site clinic-based service delivery system to provide a more holistic approach to reproductive health as advocated by the ICPD. Under the current five-year plan for health and population (1998-2002), health and FP services have been delivered on a daily basis at the one-stop service centers, called *community clinics*, in rural areas of Bangladesh (GoB, 1998). Like GoB, NGOs in rural areas are also shifting away from door-to-door distribution to fixed-site clinic-based delivery of essential reproductive health care services (Schuler et al., 2002). However, the new strategies would not lead to increased contacts with health care providers unless the clients come out to these newly established community clinics. Since door-to-door distribution strategy had led women to become accustomed to receiving services at home, a considerable amount of motivation is needed at this stage to make these clinics more popular and accessible to all those who require them. Furthermore, providers may contribute to the problem of incorrect pill use by giving inaccurate or incorrect instructions about pill use (Potter et al., 1988). Thus, improved client-provider interaction could only be effective when providers have adequate as well as correct knowledge about pill

use, including what to do if one or more active pills were skipped, and have enough motivation to render adequate counseling for correct and continued pill use. Regular in-service training could help the providers to be equipped with updated information on pill use. Further research should explore the role of providers in improving effective pill use, by examining whether their knowledge is accurate and regularly reinforced, and, in turn, how thoroughly and how often they review instructions with their clients.

The results of the present study also demonstrated that mass media (e.g., television and radio) significantly contributed to the correct knowledge about actions with the skipped pills. It is to be noted that these media in Bangladesh are being used for the purpose of promoting different brands of oral pills without emphasizing on their correct use. Thus, there are opportunities to use these media to convey correct pill-taking instructions that are culturally appropriate, easy to understand and follow. In particular, instructions to pill users should include clear and concise steps to follow if pills were skipped or missed. Women who used other method of contraception before using pill were more likely to have the knowledge about correct actions with the skipped pills. This may be perhaps that experienced users were more aware about the pros and cons of the method than the new contraceptive users.

The present study helps to quantify knowledge about correct actions with skipping pills. The knowledge pattern exhibited in this paper by the pill users may be the results of their receiving inadequate, inaccurate, and confusing information. The study findings underscore the need for providing women with more comprehensive, reliable, and updated information about pill use along with the steps to be taken if active pills were skipped. In particular, service providers could be the focal point for helping women to become more successful users, emphasizing that pill users should establish a regular pill-taking routine. Also, husbands could provide instrumental supports to improve the situation. Counseling should be provided to men in addition to women about how to make pill use more effective, emphasizing on the benefits of correct and continued use. Culturally appropriate mass media campaign about how to use pills correctly could improve the adherence to oral contraceptive regimens.

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