Increasing male involvement in family planning decision making: trial of a social-cognitive intervention in rural Vietnam

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Abstract

We tested a social-cognitive intervention to influence contraceptive practices among men living in rural communes in Vietnam. It was predicted that participants who received a stage-targeted program based on the Trans-theoretical Model (TTM) would report positive movement in their stage of motivational readiness for their wife to use an intrauterine device (IUD) compared to those in a control condition. A quasi-experimental design was used, where the primary unit for allocation was villages. Villages were allocated randomly to a control condition or to two rounds of intervention with stage-targeted letters and interpersonal counseling. There were 651 eligible married men in the 12 villages chosen. A significant positive movement in men’s stage of readiness for IUD use by their wife occurred in the intervention group, with a decrease in the proportions in the precontemplation stage from 28.6 to 20.2% and an increase in action/maintenance from 59.8 to 74.4% (P < 0.05). Interventions based on social-cognitive theory can increase men’s involvement in IUD use in rural Vietnam and should assist in reducing future rates of unwanted pregnancy.

Introduction

Partner support is a significant predictor of the likelihood that women will attempt to use a contraceptive method (Green, 1994; Burwell, 1996). In this context, male involvement refers to any activity that seeks to enhance the provision of reproductive health services including information provided through activities targeted to males of all ages, either individually or as part of a sexually active couple (Danforth and Green, 1997).

Studies using interpersonal communication strategies involving counseling sessions to provide men with relevant information can help them to be more supportive of contraceptive use and more aware of shared decision making. Tefere and Larson (Tefere and Larson, 1993) found that contraceptive use nearly doubled among couples that received husband–wife counseling compared to when women were counseled alone. In China, husbands’ involvement in the counseling process contributed to reduced rates of pregnancy and abortion among couples initially not using intrauterine devices (IUDs) (Wang et al., 1998).

Current contraceptive use among married women in Vietnam increased from 53% in 1988 to 75% in 1997 (NCPF and GTZ, 1995; Phai et al., 1996; NCPF, 1999). Two features of the methods used in Vietnam clearly stand out: the predominance of IUD use among modern methods and the relative share of

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overall use that is attributable to traditional methods, such as periodic abstinence (rhythm method) and withdrawal (Johansson, 1999; NCPFP, 1999). The high rate of acceptance of IUD use in Vietnam may be credited to a long history of family planning programs, which have emphasized the method since the 1960s. About a quarter of couples use unreliable traditional methods such as periodic abstinence or withdrawal, even though many types of modern contraceptive have become available. This contributes to the unacceptably high rate of 2.5 abortions per woman’s lifetime, causing Vietnam to have one of the highest abortion rates in the world (Goodkind, 1994).

In 1993, the government of Vietnam approved a resolution that endorsed that each family should have only one or two children in order to achieve lower fertility and population stabilization (Phai et al., 1996). The national family planning program utilizes a network of family planning collaborators at the grass roots level to target married women.

In Vietnam and in some other Asian countries, the husband’s dominance in the decision-making process tends to prevail in reproductive health issues, including contraceptive use (Khan and Patel, 1997). In Vietnam, men take a dominant role, consistent with the Confucion tradition in the family, in deciding these issues (Johansson et al., 1998; Mai and Montague, 1998). Men often decide upon the specific contraceptive method to be used (Johansson et al., 1998).

The adoption of contraceptives may be addressed within the framework of cognitive-social theories of behavioral change. In particular, the Transtheoretical Model (TTM) has been shown to be generalizable across a broad range of behaviors, including contraceptive use (Prochaska et al., 1994; Galavotti et al., 1995; Grimley et al., 1995; Stark et al., 1998). The stage of change (SOC) construct is the main organizing principle and dependent variable in the TTM (Johansson et al., 1998). It has consistent associations with other behavioral change constructs, including pros (advantages) and cons (disadvantages) from the Decisional Balance Model, and self-efficacy from Social Cognitive Theory (Velicer et al., 2000). It is argued that the interventions targeted to a person’s SOC (or motivational readiness) are more likely to be effective than those that are not targeted (Ha et al., 2003). Interventions based on TTM have combined high effectiveness and high participation rates, and can be disseminated to whole populations (Velicer, 2000). Stage-targeted interventions can provide people in the earlier stages (pre-contemplation, contemplation and preparation) with information to counter-perceive cons and to reinforce pros of the target behavior. In contrast, individuals in the action and maintenance stages can receive messages and materials to reinforce and sustain the behavior.

In an earlier study, we found that husbands’ acceptance of IUD use as an effective contraceptive in a rural setting in Vietnam could be systematically accounted for using the SOC and related constructs from the TTM (Ha et al., 2003). The purpose of the trial reported here was to test the impact of a stage-targeted intervention aimed at influencing men’s motivational readiness to accept IUD use as a contraceptive method. The hypotheses tested were that, compared to men in the control condition, those who received the stage-targeted program would be more likely to report significant positive movement in SOC for IUD use, would be more likely to report significantly higher pros and lower cons for IUD use, and would be more likely to report significantly higher self-efficacy for IUD use.

**Methods**

**Participants**

There were 651 married men from 12 villages in two rural communes (An Hong and Quoc Tuan) in the An Hai district of Hai phong province in Vietnam. Interviewers visited each household in the selected villages and sought all married men aged 19–45 years who had lived with their wives in the same house during the 3 months prior to the study. The inclusion criteria were: the wife was currently not pregnant, the couple did not plan to have a child in the next 6 months, they currently did not use condoms consistently for family planning and the wives currently did not use the pill consistently for family planning.
Design and procedure

A quasi-experimental design was chosen for the study. Villages were chosen as the primary unit for intervention. From each of the two communes, three villages were chosen for intervention and three as controls. The intervention villages were separated from control villages by a distance of 2–3 km. The eligible men in the six villages in the intervention group received stage-targeted letters corresponding to their stage of readiness to accept IUD use as a contraceptive method and interpersonal counseling. Those in the six control villages received neither letters nor counseling. Participants in both study groups were assessed, using interviewer-based questionnaires, prior to (baseline) and following the intervention (post-test).

The intervention involved the family planning collaborators of the respective villages visiting the identified participants and providing them with letters containing tailored messages relevant to the stage of the participant. During these visits they also answered questions raised and counseled the husband on the family planning. Two rounds of contact were made per participant within the 6-month period of intervention.

To assess men’s acceptance of their wife’s IUD use for contraception, a four-item staging algorithm was used (Table I). These items were found to be reliable in previous studies (Galavotti et al., 1995; Grimley et al., 1995). The staging algorithm identifies five potentially relevant stages based on the TMM, i.e. precontemplation (currently not accepted IUD for contraception and has no intentions to do so in the next 6 months), contemplation (currently not accepted IUD for contraception, but intends to use one in the next 6 months), preparation (currently not accepted IUD for contraception, but intends to use one in the next 30 days), action (currently using IUD for contraception, but for less than 6 months) and maintenance (has accepted IUD for contraception for more than 6 months).

In an earlier study, we found that three stages were appropriate to identify the stages of men’s readiness to accept IUD use for contraception (Ha et al., 2003). The first transition (stage) compares men who lack intention to use IUD (who are in precontemplation) with those who are at the stages of intending to do so (contemplation and preparation). The second transition compares men in contemplation/preparation to those who have achieved the relevant change (action/maintenance).

After the post-test survey, data were gathered from the wives of the participant’s to verify contraceptive use. Data were collected by the field workers (who were their regular family planning collaborators) by questioning the wives independently about their SOC (using the same algorithm).

**Intervention program**

The intervention program targeted the TTM construct of SOC in men’s motivational readiness to accept their wife’s use of IUD for contraception. The program consisted of stage-targeted letters and interpersonal counseling. Three letters were designed for three stage groups identified in our earlier study (Ha et al., 2003) and described above. The letter was written based on the concept of tailored health messages (Kreuter et al., 1999).

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>Stage</th>
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<tbody>
<tr>
<td>Q1. Is your wife currently using an IUD?</td>
<td>yes → Q2</td>
</tr>
<tr>
<td>Q2. How long has your wife been using an IUD</td>
<td>no → Q3</td>
</tr>
<tr>
<td>Q3. Do you (your spouse) think about using an IUD in the next 6 months?</td>
<td>&lt;6 month → action stage</td>
</tr>
<tr>
<td></td>
<td>≥6 month → maintenance stage</td>
</tr>
<tr>
<td>Q4. Do you (your spouse) plan to use an IUD in the next 30 days?</td>
<td>yes → Q4</td>
</tr>
<tr>
<td></td>
<td>no → contemplation</td>
</tr>
<tr>
<td></td>
<td>yes → precontemplation</td>
</tr>
<tr>
<td></td>
<td>no → preparation</td>
</tr>
</tbody>
</table>
The TTM suggests that people in precontemplation lack relevant knowledge and should receive basic information on the behavior (Weinstein et al., 1998). In comparison, people in contemplation/preparation tend to have less strong concerns about possible negative outcomes (cons) that may be based on their past experiences or misconceptions, but that may nevertheless need to be minimized, in order for them to feel comfortable about behavioral change.

In contrast, people in action/maintenance stages needed to have messages of reinforcement to maintain behavior. These principles were used for stage-targeted intervention for promoting men to accept their wife’s use of an IUD for contraception. An example of a message in the stage-targeted letters is given in the Appendix.

Measures

The same measures were used for the baseline and the post-test survey. The interviewers collected information necessary to determine the men’s stage of readiness to accept IUD use for contraception.

Measures of pros, cons and self-efficacy for IUD were developed and validated in a previous study (Ha et al., 2003). Each respondent was asked to rate on a five-point Likert-type scale (1 = not important to 5 = very important) how important each statement was to his decision whether or not to use contraception and/or an IUD. The items for measuring advantages (pros) covered content such as protection from unwanted pregnancy, personal responsibility, the wife’s positive reaction to the contraceptive method and the promotion of the family’s economic conditions. Items for measuring disadvantages (cons) of contraception included hassles associated with the contraceptive method, personal beliefs, difficulties associated with the family setting, financial costs and decrease in sexual pleasure. An example of an item measuring pros for IUD use was: ‘An IUD is always available inside the body’. An example of an item measuring cons was: ‘An IUD may cause bleeding’.

Items for self-efficacy were written in such a way as to assess the level of confidence of the respondents in specific situations (e.g. when the method caused abdominal pain or bleeding). Response options ranged from 1 (not at all confident) to 5 (extremely confident). As there were two categories of respondents (those currently using an IUD and those not using an IUD), items were constructed to obtain a gradation of difficulties for each category. All scales had good internal consistency reliability, pros for IUD (α = 0.78), cons for IUD (α = 0.9) and self-efficacy for IUD (α = 0.9).

Information was also obtained on sociodemographic characteristics (age, level of education, occupation, number of children and number of sons) and desire for more children. The level of contraceptive knowledge was measured with questions designed to test spontaneous recall of modern contraceptive methods.

Data analysis

To carry out statistical tests, raw scores for pros, cons and self-efficacy were converted to standardized scores and to t scores (m = 50; SD = 10; Grimley et al., 1995). The effect of intervention was examined in a two-step procedure. First, χ² and one-way ANOVA tests were used to contrast the difference between the intervention and control groups (study groups). For variables that were significantly different at baseline, an ANCOVA was carried out controlling for the difference as covariate. At the next step, the McNemar test and repeated ANOVA were used to identify the change from baseline to post-test.

We identified all of those (n = 99) who moved in a positive direction (from precontemplation to preparation and from preparation to action or maintenance) from baseline to post-test. Of the balance of participants, 449 did not change their stage and 62 moved back in their stage. This group was identified as the ‘stable or decrease’ group. To investigate the differences in pros, cons and self-efficacy in those who moved and the ‘stable or decrease’ group we conducted 2 × 2 mixed design ANOVA tests.

Results

A comparison of baseline data between the intervention and the control groups showed no difference
in age ($P = 0.7$), but there was a difference by level of education ($P < 0.01$) and percentage in government occupation ($P < 0.01$). The intervention group had a higher percentage with three or more children (23.2 versus 12.4%; $P < 0.05$), but there was no difference in having a son ($P = 0.09$) and desire for more children ($P = 0.17$).

There was no difference between groups at baseline on contraceptive knowledge ($P = 0.3$) or SOC ($P = 0.8$). Results of one-way ANOVA revealed that there were significant differences between the groups for pros and cons for IUD. Men in the intervention group had higher means for pros for IUD [51.3 versus 48.4; $F(1,608) = 13.1$; $P < 0.01$] and lower cons for IUD [48.4 versus 51.4; $F(1,608) = 14.1$; $P < 0.01$] than those in the control group. However, there was no difference in self-efficacy levels [50.1 versus 19.9; $F(1,608) = 0.04$; $P = 0.84$].

**Change in SOC**

The McNemar test showed a significance change between baseline and post-test on SOC for the intervention group ($P < 0.01$), but not for the control group ($P > 0.05$). In the intervention group, the proportion of men in precontemplation decreased from 28.6 at baseline to 20.2% at post-test and the proportion of those in contemplation/preparation decreased from 11.6 to 5.4% (Figure 1). As expected, the proportion of men in action/maintenance stages significantly rose from 59.8 to 74.4% at the post-test. In contrast, in the control group, the proportion of men in precontemplation increased from 29.2 at baseline to 33.9% at post-test, the proportion in contemplation/preparation decreased from 10.2 at baseline to 5.8% at post-test and proportion in action/maintenance remained almost the same (60.6 and 60.2%).

Thus, the results support the hypothesis that men who received the stage-targeted program are more likely to report significant positive movement of the SOC for IUD use by their wife than those who have not.

SOC, as reported by the participants and their respective wives, was the same in 599 cases out of 610 (98.2%). The correlation between the two respondents’ reports was 0.98. Of those in precontemplation, the match was 160 of 161; in contemplation/preparation, 28 of 34; and in action/maintenance, 411 of 415 participants. These results validate the answers given by the participant of their wife’s IUD usage.

**Change in pros and cons for IUD**

One-way between groups analysis of covariance was conducted to compare the intervention effect on changes in the pros of IUD use (Table II). The independent variable was the study group (intervention and control) and the dependent variable was scores of pros for IUD at post-test. Scores at baseline were used as the covariate in this analysis (as there was significant difference between groups at baseline on pros for IUD). After adjusting for baseline scores, there were significantly higher pros for IUD use in the intervention compared to the control group on the post-test scores [52.7 versus 46.6; $F(1,608) = 66.0$; $P < 0.05$]. Similarly, after adjusting for baseline scores for cons of IUD use, there was a significantly lower cons for IUD in the intervention group than the control group on post-test scores [45.0 versus 56.0; $F(1,608) = 280.7$; $P < 0.05$].

Thus, these findings support the hypothesis that those who had received the intervention were
significantly more likely to report higher pros for IUD use and lower cons for IUD use than those who did not receive the intervention.

**Change in self-efficacy for IUD use**

The results of mixed ANOVA showed the statistically significant main effect within subject (time) for self-efficacy for IUD use; therefore, there was a significant change from baseline to post-test across two study groups \( F(1,608) = 14.9; \) \( P < 0.05 \). The main effect between study group was also significant \( F(1,608) = 32.8; \) \( P < 0.05 \). Hence, there was significant difference among study groups across the baseline and post-test period. Furthermore, there was a statistically significant interaction between group and time (time \( \times \) group) \( F(1,608) = 56.6; \) \( P < 0.05 \).

Analysis of variance was used to test simple main effects, i.e. to examine the difference between the groups at the post-test. The results were in the expected direction. There was significantly higher self-efficacy for IUD use reported for the intervention group than in the control group \( 54.6 \text{ versus } 48.4; \) \( F(1,608) = 135.6; \) \( P < 0.05 \).

Table II shows that the trends of self-efficacy for IUD use for the intervention and control groups from baseline to post-test were quite different. A repeated-measures ANOVA was performed to test the simple effect of test time within each study group. As expected, there was significant increase from baseline to post-test for the intervention group \( 50.1 \text{ versus } 54.6; \) \( F(1,335) = 5.9; \) \( P < 0.05 \) and a significant decrease from baseline to post-test for the control group \( 49.9 \text{ versus } 48.4; \) \( F(1,273) = 74.4; \) \( P < 0.05 \).

These findings support the hypothesis that the men who had received the intervention would be significantly more likely to report higher self-efficacy for IUD use than those who did not.

**Changes in pros, cons and self-efficacy, and movement in SOC**

Those who had a positive movement in SOC were found to have significantly increased their pros \((2.27 \text{ units}; \) \( P = 0.03 \)), but only a small \((0.68 \text{ units})\) increase in pros was found in those who were in the ‘stable or decease’ group; however, the difference was not significant \( (P = 0.2) \). In the case of cons, there was a significant decrease in the group who had positive movement \((-2.8; \) \( P = 0.02) \) and a significant increase in the ‘stable or decease’ group \((1.3; \) \( P = 0.01) \). Self-efficacy significantly increased \((5.65; \) \( P = 0.001) \) in the group with a positive movement in the SOC. The increase in self-efficacy in the ‘stable or decease’ group was not significant \((0.74; \) \( P = 0.09) \). These results provide support for an association between SOC movement and changes in pros and cons, and self-efficacy.

**Discussion**

Previous studies have shown that providing men with information and involving them in decision
making on contraceptives have had success in low-income countries (Terefe and Larson, 1993; Burwell et al., 1996; Wang et al., 1998). However, in all these studies, there is insufficient understanding of the underlying mechanisms for the change. Our trial examined the effects of an intervention based on an empirically tested model of behavioral change.

Our findings provide strong support for the utility of the TTM in guiding a targeted intervention to promote contraceptive acceptance (in this case the IUD method). Core constructs of the TTM (self-efficacy, and the pros and cons of behavior change) were related to aspects of the outcomes that we found. Intervention effects were revealed for lowering cons for IUD use, and increasing pros and self-efficacy for IUD use. At baseline, some differences between intervention and control groups were seen for the pros and cons of IUD use (and for educational level, and occupation). As hypothesized, men in the intervention group reported significantly lower cons for IUD use and higher pros for IUD use at post-test compared to baseline, after controlling for baseline differences. The men in the intervention group also reported significantly higher self-efficacy for IUD use than those in the control group at post-test.

An important outcome of the intervention was movement through SOC (the main framework of the TTM) for IUD use. It was hypothesized that men who received intervention were significantly more likely to progress from the lower to higher stage of change for IUD use. In the intervention group, the proportion of men in precontemplation decreased from 28.6 to 20.2%, while the proportion of men in action/maintenance showed a significant increase from 59.8 to 74.4%. There was no significant change for the control group.

Further tests were conducted on those who moved in the positive direction from baseline to post-test. According to the theory, these people should increase their pros and self-efficacy, and decrease their cons. The results provide some evidence to support an association between SOC movement and changes in the theoretically related constructs of pros and cons and self-efficacy.

Bandura (Bandura, 1986) argues that self-efficacy is the most important prerequisite for behavioral change. Studies in developed countries have shown self-efficacy to be a significant predictor of contraceptive behavior (Cecil and Pinkerton, 1998; Levinson et al., 1998; Stark et al., 1998). This study provides evidence that in the intervention group, the men’s self-efficacy to accept IUD use had increased. The finding that self-efficacy in the control group decreased is puzzling. However, this may in part explain the finding that there was an increase in the proportion of precontemplators (from 29.6 to 33.9%) in the control group, in the opposite direction to the intervention group, although this difference was not statistically significant.

The stage-based algorithm that was used in this study was tested, and found to be acceptable and feasible to use in normal field situation by family planning workers in rural Vietnam. We provided basic information on IUD use, its effectiveness, the low effectiveness of traditional methods and the associated risk of unwanted pregnancy (with the risks of abortion) to those in the precontemplation stage. Information to decrease cons for IUD use (misconceptions about of IUD risks) and increase self-efficacy for IUD use was provided to those in the contemplation/preparation stage. This directly addressed men’s concerns about possible deleterious or undesirable effects of IUD use and also addressed the interpersonal communication concerns that had been identified in our earlier study (Ha et al., 2003).

We have previously argued that, in the case of contraception behavior using the IUD method, that the five SOC are best collapsed into three stages based on two important transitions of behavior change (Ha et al., 2003). We found a similar distribution for the SOC in this study. Future research is indicated to test whether this is a phenomenon of contraceptive behavior specifically for IUD acceptance. We did not, however, have sufficient numbers in some of the stages (of the full five-stage model) to test this in our trial.

One limitation concerning this study is that we employed local health workers (females primarily) to deliver the intervention and collect information. There were a number of important considerations for this choice. These workers had experience in conducting health surveys in this setting, and they
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(mostly family planning promoters) had the confidence and the ability to obtain truthful answers to sensitive questions related to the subject. In addition, they were able to verify the men’s information regarding IUD use by their wife by comparing with their records. The use of local personnel allowed us to test an intervention that could be readily replicated in other settings. This trial provides clear evidence that a stage-targeted intervention using TTM as a framework in promoting men to accept IUD use is feasible in such rural settings and provides an impact on acceptance of IUD use in rural settings in a low-income country.

The changes demonstrated here have the potential to lead to higher future rates of IUD use and thus to lower rates of abortion. If longer-term follow-ups can demonstrate this to be so, the more widespread dissemination of stage-targeted IUD use promotion programs should be pursued. The model of behavioral change that we employed to develop our intervention and to identify the IUD use-related constructs that we measured (the TTM) has the potential to guide further innovations. For IUD use and the promotion of other modern contraceptive methods, motivational readiness (stage of change), confidence about being able to adopt a contraceptive method (self-efficacy), and perceptions of benefits and costs of contraceptive use (pros and cons) are relevant and practically useful theoretical constructs.

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Appendix

Examples of stage-targeted messages (this is a direct translation of the message in Vietnamese)

Project ‘Male involvement in family planning in An Hai district’
To Mr: ................................... Commune: ................. (Precontemplation group)

WHAT ARE THE FACTS?
In our survey many of you knew of the different modern contraceptive methods available in An Hai District such as IUDs, the pill, condoms and sterilizations, and these can be easily obtained in the district health centre or commune health centers. They are all effective methods. Traditional methods like withdrawal and periodic abstinence are not very effective. About 30% of people using these methods have pregnancies that end in abortions.

Most of surveyed men know that IUDs help to prevent unwanted pregnancy. In fact, IUD is one of the most effective reversible contraceptive methods in the world, with effectiveness up to 99%, and minimum side effects. That means, only one person can get pregnant among 100 women using IUDs. The IUD versions Tcu-380A available in An Hai District at this time can be effective for 10 years. The IUD is very convenient to use; your wife needs to have it inserted ONCE only, after which you do not need to worry about unwanted pregnancy any more. It is provided free of charge at any district health center and commune health center, and can be removed any time upon request.

WHY AN IUD? WEIGH THE BENEFITS
You may have heard that IUDs can cause bleeding and pain. While it is true that after insertion, in the first few months, women can have abdominal pain and irregular menstrual periods, but these symptoms will disappear in the next 2–3 months and they are not signs of illness. DON’T LET THESE RUMOURS HOLD YOU BACK!