

博士論文（要約）

**Positive deviance for promoting dual-method contraceptive  
use among women in Uganda**

（ウガンダにおけるポジティブ・デビエンス介入による  
二重避妊法使用の促進）

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## 論文の内容の要旨

論文題目 Positive deviance for promoting dual-method contraceptive use among women in Uganda  
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### **Introduction**

The HIV/AIDS epidemic remains a leading cause of death in sub-Saharan Africa. Dual-method contraceptive use, or using condoms with highly effective contraceptives, provides the most reliable protection against unintended pregnancies and sexually transmitted infections, including HIV. However, in sub-Saharan Africa, women tend not to use condoms when using highly effective contraceptives, especially in long-term relationships. Few intervention studies have demonstrated an increase in dual-method contraceptive use, and adherence to this practice was often low. Although dual-method contraceptive use remains uncommon in sub-Saharan Africa, some women do practice it. The positive deviance approach aims to promote the practices of such exceptional individuals to other community members. In this study, I examined the effectiveness of the positive deviance approach in promoting dual-method contraceptive use among married or in-union women in Mbarara District, Uganda, who used highly effective contraceptives. This study consisted of two phases. In Phase I, I explored the barriers that make dual-method contraceptive use rare and the behaviors of women who practice dual-method contraception. Then, in Phase II, I examined the effects of the behavioral intervention, which was developed using the findings of Phase I, on dual-method contraceptive use among married or in-union women in the same study area.

### **Methods**

In Phase I, I screened 150 women who used highly effective contraceptives at five health facilities to identify positive deviants (PDs), or those who had practiced dual-method contraception consistently for the last two months with their marital or in-union partners. Then, I conducted in-depth interviews with all identified PDs, as well as 10 non-PDs selected randomly from the remaining women screened. A Ugandan research collaborator and I conducted a thematic analysis of the transcribed interview data. We used the positive deviance framework to identify the uncommon behaviors of women who practiced dual-method contraception as compared to their peers. Then, we examined how such behaviors could facilitate the dual-method use by addressing the identified barriers.

In Phase II, I conducted an exploratory sequential mixed methods study with a clustered randomized

controlled trial in 20 health facilities. The health facilities were randomly assigned to either intervention or control group with a 1:1 allocation ratio using computer-generated random sequences. In this study, blinding was not feasible. However, the research assistants who performed the outcome assessment were blinded to the allocation. At the selected health facilities, I recruited 960 married or in-union women aged 18 to 49 years who used highly effective contraceptives and followed up with them for eight months. The intervention consisted of a combination of clinic- and telephone-based counseling and a one-day participatory workshop, which were developed based on the PD behaviors identified in Phase I. The four PDs identified in Phase I contributed to the intervention's development, and they provided the telephone-based counseling and workshop as peer counselors. Women in the control group received regular clinic-based counseling and health-related messages from research assistants via telephone.

I measured dual-method contraceptive use as the primary outcome in two timeframes: dual-method contraceptive use at the last sexual intercourse and its consistent use in the two months prior to each follow-up. The secondary outcomes were communication with partners about HIV/STI risk and the incidence of pregnancy in the two months before each follow-up. After enrollment, female research assistants interviewed women to identify their baseline characteristics using a pre-tested structured questionnaire. To measure outcomes, female research assistants conducted bimonthly follow-up phone calls for eight months to assess the influence of the intervention on the primary and secondary outcomes (i.e., two, four, six, and eight months after enrollment). I performed a mixed effects logistic regression analysis to assess the intervention's effect on the outcomes, controlling the cluster effects of all health facilities and the individuals. Moreover, to assess the effectiveness of the intervention qualitatively, I conducted in-depth interviews with 13 women who reported consistent dual-method contraceptive use for eight months after the follow-up period.

## **Results**

In Phase I, I identified 9 PDs and 141 non-PDs through the screening. The results of the in-depth interviews demonstrated that women faced several barriers to dual-method contraceptive use, such as their partners' objections, distrust, shyness about introducing condoms into marital relationships, and limited access to condoms. However, the PDs successfully used dual-method contraception by practicing several PD behaviors, such as initiating discussions for the dual-method use, educating their partners on sexual risks and condom use, and accessing condoms themselves.

In Phase II, 960 out of 1,956 women screened were eligible for the trial and allocated to the intervention or control group. The proportion of women practicing dual-method contraception at the last sexual intercourse increased from 8.5% at baseline to 42.6% at two months after enrollment in the intervention group. At eight months, 20.9% of women in the intervention group reported dual-method

contraceptive use at the last sexual intercourse. More women in the intervention group used dual-method contraception at the last sexual intercourse at two months (AOR = 4.29; 95% CI 2.12–8.69) and at eight months (AOR = 2.19; 95% CI 1.07–4.48) than in the control group. Moreover, 15.5% and 11.2% of women in the intervention group reported consistent dual-method contraceptive use at two and eight months, respectively. It was more prevalent in the intervention group than in the control group at two months (AOR = 13.71; 95% CI 3.59–52.43), and the intervention effect remained at four, six, and eight months. Furthermore, more women discussed HIV/STI risk with their partners in the intervention than in the control group at two months (AOR = 2.70; 95% CI: 1.72–4.23). The intervention's effect on communication about HIV/STI risk lasted throughout the follow-up period. However, the incidence of pregnancy did not differ significantly between the groups.

### **Discussion and conclusion**

The positive deviance intervention was effective in promoting dual-method contraceptive use and communication about HIV/STI risk among women in long-term relationships in Mbarara District, Uganda, who used highly effective contraceptives. However, I observed no significant difference in the incidence of pregnancy between the intervention and control groups.

The positive deviance intervention increased the uptake and continued use of dual-method contraception among women. The number of women who used dual-method contraception decreased in both the intervention and control groups over time. However, the significant difference between the groups remained during the follow-up period. Condom use is often considered a male responsibility and unacceptable in long-term relationships in sub-Saharan Africa, especially when women use another contraceptive method. The positive deviance intervention can be effective in changing such norms. The PDs who overcame the barriers to dual-method contraceptive use shared their experiences to help other women realize that condom use is normal even among marital or in-union relationships. In addition, the intervention enabled women to negotiate condom use with their partners and instruct their partners on correct condom use. The positive deviance intervention could empower women with the skills necessary to play a proactive role in negotiation and condom use with their partners.

Moreover, the intervention increased communication about HIV/STI risk between the women and their partners. Frequent communication about sexual health could have underpinned the increase in dual-method contraceptive use. Women in the intervention group received the handout used in the initial counseling and were encouraged to discuss condom use with their partners. They could talk more comfortably about sensitive topics, such as condom use, by sharing the information they received as a conversation starter. The majority of women in this study were willing to share the health messages and discuss HIV/STI risk with their partners. Because women who use highly effective contraceptives are expected to visit health facilities more frequently than men do, it can be an effective strategy to

educate them on dual-method contraceptive use and encourage them to share such messages with their partners.

Despite the increase in dual-method contraceptive use, I observed no significant difference in pregnancy incidence between the two groups. In both groups, many women started dual-method contraception but practiced it inconsistently. Inconsistent dual-method contraceptive use might explain the lack of effect on avoiding unintended pregnancies. A lack of statistical power might also explain this, as only 21 women became pregnant throughout the follow-up period.

### **Study implications and recommendations**

The positive deviance intervention increased dual-method contraceptive use among women in Mbarara District, Uganda, and could be effective at reducing the dual risk of unintended pregnancies and HIV infections. This approach helped women uptake and adhere to dual-method contraceptive use by disseminating PD behaviors that exist in the community. Because women who use highly effective contraceptives may be more reachable compared to men, interventions targeting such women should reduce this dual risk more effectively.

However, the findings must be interpreted cautiously. This intervention was developed based on the qualitative study of the PDs in Mbarara District and examined its effectiveness among women in the same area. Merely applying the intervention to other communities might not be effective, as communities' local solutions might differ. Therefore, each community must participate in the process of determining its own solutions. Further research is recommended to assess the effectiveness of the positive deviance approach in a given context with careful attention to its process. This study demonstrated that the positive deviance approach could be a potential option for promoting behavioral changes that usual approaches, which look for outside solutions, have failed to address and that often oppose social norms.