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Effectiveness of a theory-based postpartum sexual health education program on women's contraceptive use: a randomized controlled trial☆

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Abstract

Background: The aim of this study was to evaluate the effectiveness of a refined theory-based Interactive Postpartum Sexual Health Education Program to enhance postpartum women's effective contraceptive behavior.
Study Design: Participants (N=250) were randomized to three groups. Experimental Group A received our intervention program via strategies that matched participants' learning preparedness, as determined by the transtheoretical model. Experimental Group B received only a pamphlet. The control group received routine education. Only Group A received health education. Data were collected at baseline, 3 days, 2 months and 3 months postpartum.
Results: Women who received theory-based postpartum sexual health education program had significantly greater contraceptive self-efficacy and were more likely to choose more effective contraceptive methods at 2 months postpartum than women in the routine teaching and interactive pamphlet-only groups.
Conclusion: Our theory-based Interactive Postpartum Sexual Health Education Program enhanced postpartum women's contraceptive self-efficacy and effective contraceptive behavior.

Keywords: Contraception; Postpartum; Sexuality; Health education; Patient teaching; Transtheoretical model

1. Introduction

Worldwide rates of unintended pregnancy range from 20% to 70%. Half of all pregnancies in the United States are unintended [1], despite the goal to increase the intended pregnancy rate to at least 70% of all pregnancies [2]. In most Asian and Latin American countries, 20% of births were estimated to be unwanted at contraception [3]. Contraception is widely accepted as a major route to reducing unwanted births and obstetric mortality and morbidity [3].

Unintended pregnancy poses significant public health risks, e.g., induced abortion. In Taiwan, the 2003 abortion rate was estimated at 17 per 1,000 married women [4]. At this rate, 114,020 abortions were estimated for 2006 [5]. In fact, 29.9–35.1% of married Taiwanese women of reproductive-age had abortions in 2002 [6,7]. If other factors are constant, greater contraceptive use or effectiveness must lead to fewer induced abortions [3]. Thus, the Taiwan Department of Health [7] set the goal of decreasing the proportion of adult females using ineffective contraceptive methods.

Therefore, the priority goal for regulating births in Taiwan is to educate women about using effective contraceptive methods. The best means for professional contraceptive sexual health education is postpartum sexual health education. Postpartum sexual education (or family planning) used to be important for women's sexual health and a routine part of postpartum education, including both postpartum sexual health and contraceptive practice [8,9]. However, this

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education has not met the needs of postpartum women, since it has limited the timing of first intercourse and contraceptive use [10]. Besides, the effectiveness of this routine intervention has seldom been questioned, and its effectiveness for contraceptive use has not been established in randomized controlled trials [8].

To promote effective health education, nurse scholars have introduced various theories for health educational programs, which must consider not only educational methods and media to suit patients' interests, abilities and cultural backgrounds but also the educational strategies best suited to help patients achieve healthy behaviors [11]. One model that appears useful and valid for characterizing women from diverse cultures and ethnicities is the transtheoretical model (TTM) [12,13], which has been applied successfully to such health behaviors as exercise [14], safe sexual behavior [15] and condom use [16].

The effectiveness of a behavioral change program may be increased if it is theoretically framed by the TTM, which assumes that people are at different stages of readiness to adopt a specific health-related or health-promoting behavior [13]. This model describes a process in which individuals evolve through five stages of behavioral change [13,14]. The model also describes change processes, each representing a category of similar intervention activities to facilitate behavior change and progression through the stages. By using the change processes identified as most useful at a particular stage of change (i.e., matched treatment), behavior change is facilitated more successfully than through the traditional approach of using the same intervention techniques with everyone, regardless of stage of change [14].

Thus, we used the TTM as the framework for developing an Interactive Postpartum Sexual Health Education Program (IPSHEP) that met the sex education needs of postpartum Taiwanese women [17]. The IPSHEP enhanced sexual health knowledge, sexual attitudes and sexual self-efficacy for postpartum women in Taiwan [18]. Based on our process evaluation of the IPSHEP, we refined the program by revising its pamphlet and adding an educator guide booklet. This study was designed to determine the efficacy of the refined IPSHEP in women's contraceptive use.

The study design and outcome indicators were based on a systematic review of intervention studies related to postpartum sex health education (or family planning). Our review found no definitive conclusions on the effectiveness of psychoeducational interventions and counseling about contraception. Moreover, despite the nearly unanimous opinion that women benefit from counseling on using effective contraceptive methods, no protocols for these counseling interventions are specifically described [19]. Indeed, a review of randomized controlled trials on strategies for communicating to clients the effectiveness of contraceptives in preventing pregnancy found that no trial was explicitly theory-based [20].

2. Methods

2.1. Aims

To evaluate the efficacy of the refined IPSHEP in enhancing postpartum women's sexual health knowledge, attitudes, contraceptive self-efficacy and effective contraceptive behavior, we compared its effectiveness to that of an interactive self-help pamphlet on contraception and postpartum sexual adjustment, and routine postpartum contraceptive teaching.

2.2. Design

This study used a prospective, randomized controlled trial design, with a pretest and three posttests at 3 days, 2 months and 3 months postpartum (Fig. 1).

2.3. Participants and study sites

For repeated measures within three groups, a significance level of .05, an effect size of 0.4 and a power of 80%, the sample size was estimated at 75 participants per group [21]. Based on the authors' experience and an expected dropout rate of 20%, 90 participants were planned for each group. Participants were women who had given birth and were recovering in the 76-bed postpartum wards of a large-scale medical center and a local hospital in northern Taiwan. Postpartum women were included if they (a) had delivered a single, full-term healthy baby (gestation age 38–42 weeks, body weight >2500 g, and Apgar score >8); (b) were admitted for <3 days; (c) had no perinatal complications or major chronic illness; (d) were married and lived with their husbands; (e) were aged 20–39 years and (f) could read, write, and speak Chinese. Of 305 women who met these criteria, 250 agreed to participate and signed informed consent.

2.4. Procedure

The study was approved by the study sites' Human Subjects Committees. A research assistant (RA) explained the study procedures and purposes to participants and their right to withdraw from the research. Participants then signed consent forms. Participants were randomly assigned to one of three groups: Experimental A, Experimental B and Control (see 2.4.1, 2.4.2 and 2.4.3, respectively). In our adapted randomization method [22], women in odd-numbered wards formed Groups A and B, and those in even-numbered wards formed the Control group. Ward assignment to Group A (first to receive the IPSHEP) was determined by coin flip. Odd-numbered wards were further divided into two sections: wards 1, 3, 5, 7 and 11 and wards 13, 15, 17, 19, 21 and 23. Women in Groups A and B were further randomized to the first- and second-section wards by another coin flip. Midway through the study, wards chosen for Group A were reversed. To avoid diffusion of experimental treatment effects, ward rooms with double occupancy were assigned as a unit so postpartum women in the same room would be in the same group. All participants in the