

Users of withdrawal method in the Islamic Republic of Iran: are they intending to use oral contraceptives? Applying the theory of planned behaviour

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متبعو طريقة سحب القضيب لمنع الحمل في جمهورية إيران الإسلامية: هل ينوون استعمال مانعات الحمل الفموية؟ تطبيق نظرية السلوك المخطط له
بروين رهنما، علي رضا حيدرنا، فرخنده أمين شكري، أنوشيروان كاظم نجاد، علي منتظري، فاطمه رحمتي نجار كلايي، أمين صبوري

الخلاصة: يعتمد العديد من الأزواج في جمهورية إيران الإسلامية على سحب القضيب أثناء الجماع من أجل منع الحمل. ويهدف الباحثون من هذه الدراسة إلى الاستفادة من السلوك المخطط له للتعرف على العوامل التي تؤثر في من يتبع طريقة سحب القضيب ونواياهم للتحويل إلى موانع الحمل الفموية. وقد بلغ عدد المشاركين في الدراسة 336 امرأة متزوجة نشطة جنسياً ممن يستخدمن طريقة سحب القضيب لمنع الحمل، وقد تم اختيارهن من خمس عيادات لتنظيم الأسرة تابعة للقطاع العام في طهران. وقد وزع الباحثون استبيانات تضم التدابير الخاصة بنظرية السلوك المخطط له: المواقف (المعتقدات السلوكية، تقييمات الحواجز)، الأعراف الشخصية وغير الموضوعية (المعتقدات في الأعراف، الحوافز التي تبعث على الامتثال)، الضبط الإدراكي للسلوك، السلوك في الماضي والمقاصد السلوكية. وأجرى الباحثون تحليلاً تحوئياً خطياً أظهر أن السلوك في الماضي، والضبط الإدراكي للسلوك، والمواقف والأعراض الشخصية هي المسؤولة عن أعلى النسب المئوية من التفاوت الملاحظ في المقاصد لاستخدام موانع الحمل الفموية (36%). واستنتج الباحثون إلى أنه ينبغي تصميم التثقيف المرتكز على المعتقدات في تنظيم الأسرة وتقديم المشورة حوله لمن يتبع طريقة سحب القضيب لمنع الحمل.

ABSTRACT Many couples in the Islamic Republic of Iran rely on coital withdrawal for contraception. The purpose of this cross-sectional study was to use the theory of planned behaviour to explore factors that influence withdrawal users' intent to switch to oral contraception (OC). Participants were 336 sexually active, married women, who were current users of withdrawal and were recruited from 5 public family planning clinics in Tehran. A questionnaire included measures of the theory of planned behaviour: attitude (behavioural beliefs, outcome evaluations), subjective norms (normative beliefs, motivation to comply), perceived behaviour control, past behaviour and behavioural intention. Linear regression analyses showed that past behaviour, perceived behaviour control, attitude and subjective norms accounted for the highest percentage of total variance observed for intention to use OC (36%). Beliefs-based family planning education and counselling should to be designed for users of the withdrawal method.

Utilisateurs de la méthode du retrait en République islamique d'Iran : ont-ils l'intention d'utiliser des contraceptifs oraux ? Application de la théorie du comportement planifié

RÉSUMÉ De nombreux couples en République islamique d'Iran comptent sur le retrait coïtal pour leur contraception. L'objectif de la présente étude transversale était d'utiliser la théorie du comportement planifié pour étudier les facteurs influant sur l'intention de passer à une contraception orale chez les utilisateurs du retrait. Les participantes, 336 femmes mariées, sexuellement actives et utilisatrices de la méthode du retrait, ont été recrutées dans cinq établissements publics de planification familiale à Téhéran. Le questionnaire administré mesurait les paramètres de la théorie du comportement planifié suivants : l'attitude (croyances comportementales, évaluations des résultats), les normes subjectives (croyances normatives, motivation pour s'y conformer), les croyances du sujet en sa capacité comportementale, le comportement antérieur et l'intention comportementale. Des analyses de régression linéaires ont révélé que le comportement antérieur, les croyances sur la capacité comportementale, l'attitude et les normes subjectives représentaient le plus fort pourcentage de la variance totale observée pour l'intention d'utiliser une contraception orale (36 %). Des sessions de formation et de conseil en matière de planification familiale prenant en compte les croyances devraient être élaborées pour les utilisateurs de la méthode du retrait.

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Introduction

Despite the many successes of the family planning programme in the Islamic Republic of Iran (total fertility declined from 5.0 to 2.0 per woman between 1991 and 2006 [1]), about one-third of pregnant women in 2003 said their pregnancies were unintended [2]. Oral contraceptives (OC), distributed free by the government programme, are the most popular contraceptive method in the Islamic Republic of Iran, used by 18.4% of married women. Almost as many couples, however (17.8%), rely on the traditional method of coital withdrawal, even though this method is not promoted by the Iranian national family planning programme [3]. Withdrawal is known to be associated with high rates of unintended pregnancy [4], with the risk that women resort to unsafe, illegal abortions [5].

Method of choice and the effective use of contraceptive methods are complex issues influenced by different factors [6,7]. When specific clinical outcomes are desired, well-known concepts from behavioural theories can help guide new clinical care guidelines. Several studies have shown that beliefs and attitudes about OC affect correct use of OC [8,9]. In the current study, the research approach was based on the Theory of Reasoned Action (TRA), augmented by the Theory of Planned Behaviour (TPB) [10], both of which require examining personal and contextual influences [11]. In the case of the TRA, intentions are thought to have 2 components: attitudes and subjective norms. Attitudes are beliefs that engaging in the behaviour will be associated with positive outcomes (behavioural beliefs), as well as an assessment of how much one values these outcomes (evaluation). Subjective norms comprise both beliefs about whether other individuals approve or disapprove of the behaviour (normative beliefs), as well as one's motivation to comply with such individuals (motivation to comply). The

TPB contains the same components as the TRA, and adds perceived behaviour control as a third major construct in the prediction of both intention and behaviour [12]. Researchers have used the TPB to predict intention to perform physical activity [13], safer sex behaviour [14] and Muslim women's intention to use OC [15,16]. Both the TRA and TPB have shown predictive abilities [17,18].

The aim of the current study was to use the framework of the TPB to investigate the predictors of woman's intent to switch from coital withdrawal to OC. Previous research suggests that habit or past behaviour is one of the most important predictors of future behaviour [19,20] and so past behaviour was also included in the current study.

Methods

Study design and participants

This was a cross-sectional study carried out in Tehran, Islamic Republic of Iran. Participants were recruited from attendees at 5 family planning clinics of the public health services in the Eastern district of Tehran, Islamic Republic of Iran (the area serves as the training area for the Iran University of Medical Sciences). The criteria for inclusion were: women aged 18–49 years, current withdrawal users, married, sexually active, did not intend to be pregnant, no identifiable risks to the participants beyond OC use.

Data collection

An oral informed consent was obtained from each participant prior to the interview. Data were collected using a structured face-to-face interview administered by trained interviewers not involved in the women's care or the family planning programme. Interviews lasted for 20–30 minutes, with responses recorded on the paper questionnaires by the interviewer. No

other type of recording was used for these interactions, which were carried out confidentially.

Approval for the study was obtained from the Office for Protection of Research Subjects in Tarbiat Modares University. Oral informed consent was obtained from each participant prior to the study and after assuring them that their identity would remain confidential.

Questionnaire

Since a standard TPB questionnaire was not available in the Islamic Republic of Iran, in-depth interviews with 50 women were conducted to elicit their salient beliefs concerning OC use among users of coital withdrawal [21]. The data from this qualitative study were used to develop the questionnaire. The questionnaire had 2 parts. The first part contained questions about the woman's demographic characteristics and reproductive health background. The second part was designed to measure TPB constructs including: attitude (behavioural beliefs, outcome evaluations), subjective norms (normative beliefs, motivation to comply), perceived behaviour control, behavioural intention and past behaviour. These are explained as follows:

Attitudes: The attitude scale had 10 items; 5 items on beliefs about the outcome of using OC including 5 items (e.g. How likely do you think taking the oral pill for the next 4 months will cause hirsutism?) and 5 items on evaluation of a given belief including 5 items (e.g. How would you rate the importance of hirsutism to yourself?). Respondents rated each item on a 5-point scale ranging from 1–5. Then for each item, belief was multiplied by its importance and the results from 10 items were added to obtain the score for attitude [11].

Subjective norms: The subjective norms scale included 10 items; 5 items on beliefs about the expectations of significant others (e.g. My husband would approve using OC for the next

4 months) and 5 items that measured motivation to comply with significant others' expectations (e.g. My husband's approval for taking OC would be important for me). These were scored on a 5-point scale ranging from 1–5. Then for each item belief was multiplied by its important motivation to comply and then the results of the 10 items were added to obtain the score for subjective norms [11].

Perceived behavioural control: The perceived behavioural control scale comprised 4 items (e.g. Using the contraceptive pill within the 4 next months is difficult for me because I have to take the pill on time and daily without forgetting to take it). Respondents were asked to indicate their agreement on a 5-point Likert scale ranging from strongly agree to strongly disagree. To obtain the score for perceived behavioural control the results for 4 items were added.

Past behaviour: Past behaviour was measured by asking respondents to indicate for how long they had used OC in the past 4 years.

Intention: In health behaviour research, intention has been assessed in several ways. The present study measured this variable with 2 items: Do you intend to use OC for the next 4 months? and Might you decide to use OC for the next 4 months? These were scored on 5-point scales ranging from completely agree to completely disagree. To obtain the score for intention the results for 2 items were added.

Content validity

The content validity of the questionnaire was established through making changes suggested by 10 experts in obstetrics and health education with wide experience in the areas of survey development and behavioural theory. In addition, a content validity index was calculated. The experts were asked to evaluate the relevance, clarity and simplicity of each item based on the conceptual definition provided. The panel assessed each item using a 4-point

Likert scale [22,23]. Item content validity index varied from 0.8 to 0.9, with a mean of 0.8 for the total scale. Then 10 withdrawal users were asked to evaluate the readability and format of the questionnaire. In addition, Cronbach alpha coefficient was used to assess the internal consistency of the questionnaire and its subscales. Alpha ranged from 0.70 to 0.86, well above the recommended value. Furthermore 15 withdrawal users completed the questionnaire again after a 2-week interval to assess the stability of the questionnaire over time.

Analysis

Data were analysed using the SPSS for Windows, version 16. Descriptive analyses were conducted for all variables [percentages, mean and standard deviation (SD)]. Bivariate analysis of variables was conducted using Pearson

correlation coefficient, chi-squared test and analysis of variance as appropriate. Then, linear regression analysis was performed to indicate variables that contributed to variances observed in intention to use OC. Intention was the dependent variable and demographic variables and TPB constructs were treated as independent variables [24].

Results

The mean age of the women was 32.4 (SD 6.8) years. A majority (64.0%) had secondary school level of education. The mean number of children per woman was 1.6 (SD 1.0), range 0–7; 55.1% had ≥ 2 children. The average number of years that they had used the withdrawal method was 9.8 (SD 5.9) years. The average length of previous OC use was

Table 1 Characteristics of study sample of married women using coital withdrawal (n = 336)

Variable	Mean (SD) value	No. of women	%
Age (years)	32.4 (6.8)		
≤ 35		227	67.6
<35		109	32.4
Duration of woman's education (years)	11.4 (2.7)		
5		30	8.9
11		245	64.0
≥ 12		91	27.1
Time since marriage (years)	11.5 (7.1)		
≤ 10		185	55.1
<10		151	44.9
No. of children	1.6 (1.0)		
0–1		151	44.9
2		138	41.1
≥ 3		47	14.0
Experience of unwanted pregnancy	–		
Yes		95	28.3
No		241	71.3
Experience of OC use	–		
Yes		99	29.5
No		237	70.5
Duration of use of OC (months)	9.1 (5.5)		
Duration of use of coital withdrawal (years)	9.8 (5.9)		

OC = oral contraceptives; SD = standard deviation.

Table 2 Pearson correlation matrix between intention (dependent variable) and the independent variables studied among coital withdrawal users (n = 336)

Variable	Age (years)	Woman's education (years)	Attitude	Subjective norms	Perceived behavioural control	Past behaviour	Intention
Age (years)	1.00	-	-	-	-	-	-
Woman's education (years)	0.05	1.00	-	-	-	-	-
Attitude	0.05	0.08	1.00	-	-	-	-
Subjective norms	0.06	0.02	0.07	1.00	-	-	-
Perceived behavioural control	0.03	0.04	0.24**	0.15**	1.00	-	-
Past behaviour	0.05	0.04	0.10	0.13*	0.30**	1.00	-
Intention	0.05	0.09	0.33**	0.24**	0.45**	0.44**	1.00
Mean (SD) value	32.4 (6.8)	11.5 (7.1)	22.8 (13.1)	47.8 (15.5)	10.6 (3.1)	9.1 (5.5)	4.5 (2.1)

* $P < 0.05$; ** $P < 0.01$.
SD = standard deviation.

9.1 (SD 5.5) months. Of the women, 95 (28.3%) reported having had at least 1 unwanted pregnancy (Table 1).

Table 2 shows the correlations among the constructs of the model for intended OC use and descriptive statistics for the various variables for the theoretical constructs. All of the variables except age and duration of education presented significant bivariate associations with intended OC use, with past behaviour ($r = 0.44$), showing the highest correlation.

To predict intentions, a hierarchical regression analysis was conducted with age, female education, attitude and subjective norms entered at step 1, perceived behavioural control at step 2, and past behaviour at step 3 (Table 3). Overall, the 4 variables accounted for 36% of total variance in intentions ($P < 0.001$). At step 1 attitude and subjective norms were found to account for 15% of the variance in intentions ($P < 0.001$). The β -weight for attitude and subjective norms was significant. At step 2, inclusion of perceived behavioural control increased the R^2 significantly and explained 27% of the variance in intended OC use. However, in step 3 inclusion of past behaviour increased the multiple R^2 significantly (R^2 adjusted = 0.36, $P < 0.001$). Examination of the β -weights for the significant variables

indicated past behaviour was the most important predictor of intentions ($\beta = 0.31$), followed by perceived behavioural control ($\beta = 0.28$), attitudes ($\beta = 0.22$) and subjective norms ($\beta = 0.14$). Thus, hierarchical regression analyses with the components of the TRA accounted for 0.15% of variance in intended OC use in this community. However, in the second and third steps inclusion of perceived behavioural control and past behaviour increased the multiple R^2 significantly.

Discussion

The findings from this study revealed that attitude and subjective norms accounted for 15% of the variance in intentions of withdrawal users to use OC. Therefore the results indicated that the TRA could be used to predict intent of withdrawal users in Tehran to switch to OC use. The TRA assumes that behaviours are under volitional control and that a person's intent is the most important direct determinant of performing a particular behaviour [25].

The present study showed that the TPB explained 27% of the variance in intended OC use. When perceived behaviour control was included in the model, it was the strongest predictor

of intended OC use, followed by attitudes and subjective norms. Thus, the addition of perceived behavioural control improved the performance of the model in predicting intended OC use as compared to the performance of the TRA. These results are consistent with a number of studies across a wide range of health behaviours [14,15], where perceived behavioural control was found to be the strongest predictor of behavioural intent [26,27]. Another study revealed that intention to use condoms was significantly predicted by attitudes, subjective norms and perceived behavioural control [28]. In a study of Ethiopian adolescents, the results showed that TPB accounted for 27% of the variance in contraceptive intention [28], and in the Islamic Republic of Iran it was found that TPB was useful to predict continued OC use, with perceived behavioural control as the strongest predictor [16].

In our study OC use intentions were predicted by past behaviour, perceived behavioural control, attitude and subjective norms. It has been suggested that if a person has performed the behaviour before the commitment to perform the behaviour in the future is probably strengthened [29]. Similarly, other investigators reported that the best predictor of future behavioural

Table 3 Hierarchical linear regression analysis for predicting oral contraceptive use intention (dependent variable) among coital withdrawal users (n = 336)

Step/predictor	R ²	R ² adjusted	Regression coefficient (β)	Partial correlations
Step 1	0.16	0.15		
Attitude			0.31**	0.32
Subjective norms			0.21	0.22
Step 2	0.28	0.27		
Attitude			0.23**	0.25
Subjective norms			0.17**	0.19
Perceived behavioural control			0.37**	0.38
Step 3	0.37	0.36		
Attitude			0.22**	0.27
Subjective norms			0.14**	0.17
Perceived behavioural control			0.28**	0.30
Past behaviour			0.31**	0.34

*P < 0.05; **P < 0.01.

measures is an earlier measure of the same behaviour [30].

According to the TPB, demographic and personality variables and individual differences primarily play an indirect role in influencing behaviour. These distal variables such as cultural and personality differences should be reflected in the underlying belief structure [31,32].

This study had some limitations. First, the sample size was small. Secondly, this study had an exclusive focus on intentions instead of behaviours. Although 76% of Iranian women use contraceptives [3], most obtained from providers in the public sector, our findings may not be generalizable to women who do not seek health care or who seek health care elsewhere. However, this is

the first study that has investigated the belief-based theory among women who used the withdrawal method related to OC in Tehran and therefore, despite these limitations, our findings are important for making informed policy decisions in reproductive health.

Conclusions

The current study provided evidence for the utility of the belief-based measures of the TPB in prediction of coital withdrawal users' intent to use OC. The study revealed that past behaviour, perceived behaviour control, attitudes and subjective norms were the significant predictors of intention to use OC.

In addition past behaviour was found to be the most contributing factor for intention to use OC. Beliefs-based family planning education and counselling should be designed for users of the withdrawal method.

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