



Determinants of Withdrawal Use as a Contraception Method and its Impact on Sexual Satisfaction: Case Study of Shiraz County- Iran

Khadijeh Asadisarvestani (PhD)^{1*}, Suet Leng Khoo (PhD)²

¹ Assistant Professor, Department of Social Sciences, Faculty of Literature and Humanities, University of Sistan and Baluchestan, Zahedan, Iran

² Senior Lecturer, Department of Development Planning and Management, School of Social Sciences, University Sains Malaysia, Penang, Malaysia

ARTICLE INFO

Article type:
Original article

Article History:
Received: 10-Apr-2018
Accepted: 10-Oct-2018

Key words:
Withdrawal Method
Contraception
Sexual satisfaction

ABSTRACT

Background & aim: Among Muslim nations, Iran holds the highest level of contraceptive practice. It was reported that the rate of traditional methods is relatively high particularly withdrawal method. The present study aimed to investigate the determinants of withdrawal contraceptive method and its effect on sexual satisfaction among the women in Shiraz County, Iran.

Methods: This descriptive correlational study was conducted on all married women in reproductive age (age range: 15-49 years) living in Shiraz County (city and rural areas) in 2015. Data were collected using a semi-enclosed questionnaire from 626 women selected by multi-cluster sampling. Data analysis was performed in SPSS software (version 20) using Chi-square test and multiple logistic regression.

Results: The withdrawal contraceptive method was used by 24.0% of the women. There was a set of socioeconomic, cultural, and accessibility factors affected using this method. According to the respondents' answers, the main advantage of withdrawal method was its safety. However, 73% of the users stated that they were concerned about the method failure and unintended pregnancy risks. The results of multiple logistic regression showed that the residential place (OR=24.91, 95% CI=10.48-59.21, P<0.05) and participant's authority were the main predictors of withdrawal practice (OR= 0.805, 95% CI=0.675-0.960, P<0.05). Another predictor of withdrawal method use was the negative perception of women towards modern contraceptives (OR=1.42, 95% CI=1.25-1.61, P<0.05). Moreover, 65% of women expressed that their stress about method failure decreased their sexual satisfaction

Conclusion: Despite the fact that Iran is one the successful countries in family planning; however, some shortcomings in family planning programs are reflected by a high rate of withdrawal practice as a traditional contraceptive method, as well as some rumors and concerns regarding the modern contraceptives.

► Please cite this paper as:

Asadisarvestani K, Leng Khoo S. Determinants of Withdrawal Use as a Contraception Method and its Impact on Sexual Satisfaction: Case Study of Shiraz County- Iran, Iran. Journal of Midwifery and Reproductive Health. 2019; 7(2): 1621-1629. DOI: 10.22038/jmrh.2019.31031.1335

Introduction

According to the statistics, Iran holds the highest level of contraceptive use among Muslim countries (1). For example, while the rate of contraceptive practice in Iran is 77.4%, the related rates in Turkey, Lebanon, Malaysia, Iraq, and Kuwait are 73.5%, 54.5%, 52.5%,

52.5%, and 52.0%, respectively. However, the relatively high rate was reported for the use of traditional methods among Iranian couples. According to the statistics provided by the United Nations in 2016, 77.4% of Iranian married women were using contraceptives;

* Corresponding author: Khadijeh Asadisarvestani, Assistant Professor, Department of Social Sciences, Faculty of Literature and Humanities, University of Sistan and Baluchestan, Zahedan, Iran. Tel: +989173123864; Email: Asadi.kh@lihu.usb.ir; Asadi.kh1982@gmail.com

only 57.0% of them employed modern contraceptive methods.

Moreover, couples using traditional methods were reported as 21.1% (2). Withdrawal is a traditional contraceptive method that has been broadly used as a traditional temporary contraceptive method. Western countries experienced the demographic transition with the withdrawal method as an important factor (3) as Islamic communities are concerned in this regard (4).

On the other hand, the application of traditional methods increases the chance of unintended pregnancy. The increase of unintended pregnancies in low fertility regions can lead to an extreme desire for abortion (5). In Iran, approximately more than the two-thirds of unintended pregnancies and a half of abortions occurred when the couples used withdrawal method (6). Totally, the withdrawal method of contraception depends on the husband.

Withdrawal can be used as effective as most of the non-hormonal methods considering perfect use. Based on the statistics, unintended pregnancy is expected by 4.0% among the women using withdrawal as a contraceptive method. However, due to a high level of errors, the rate of unintended pregnancy is about 27.0% among withdrawal users (7). According to the results of a study carried out by Bommaraju (8), withdrawal as a contraceptive method is not efficient since it does not control female reproduction. Among withdrawal users, 25% of women stated that they performed abortion because their pregnancy was not intended.

Moreover, in a study conducted by Asadisarvestani (2017) in Shiraz, Iran, it was revealed that the highest rate of unintended pregnancy was reported among withdrawal users (9). Although, withdrawal is considered a reliable method by most Iranian couples; nonetheless, it prevents to gain sexual satisfaction and causes post intercourse tension since the partner has to withdraw at the peak point of the sexual intercourse. Accordingly, it has negative effects on sexual satisfaction (10, 11). Therefore, this study was mainly aimed to define the determinants of withdrawal as a contraceptive method and its effect on sexual

satisfaction.

Materials and Methods

This descriptive correlational study was conducted on all married women in reproductive age (age range: 15-49 years) living in Shiraz province (including the city and rural areas) in 2015. A sample size of 398 subjects was determined based on Krejcie and Morgan's formula (1970) (12). The ethical code of the study was 7072458. As mentioned in a study conducted by Bell et al. (2018), 700 questionnaires (400 questionnaires in Shiraz and 300 questionnaires in rural areas) were dispersed to avoid sample attrition (13).

Although, it should be mentioned that out of 700 questionnaires only 626 cases were completed and used for data analysis. Regarding the sampling, the representative sample was selected from 20 regions of Shiraz and five rural districts. In Shiraz, out of 20 regions, 10 regions were randomly selected. Then 10 blocks were randomly chosen from the selected regions (one block from each region). In the next stage, one street was selected randomly from each block.

Next, four lanes were randomly selected from each street. In the subsequent stage, ten houses were selected from each lane by systematic sampling. Finally, the participants were asked to complete the questionnaires. In the rural areas, six villages were randomly chosen from five districts (one village from each district, except for the two villages from the central district). In the second stage, 60 houses were selected through systematic sampling. Finally, the subjects were interviewed.

The instrument for data collection was a semi-enclosed questionnaire, which was completed by an interviewer. The questionnaire consisted of three parts. Firstly, the informed consent letter was obtained from the participants. Then, the questions were answered related to socioeconomic and demographic characteristics, as well as contraceptive method. In the next step, the participants responded to open questions related to the advantages and disadvantages of withdrawal as a contraceptive method. In this part, one of the main questions was about the effect of withdrawal method on their sexual satisfaction.

The content validity of the questionnaire was

Table1. Results of Cronbach’s alpha coefficients

Variable	Number of item	Cronbach’s alpha coefficient
Perception of respondents about contraceptives	12	0.822
Authority in family	5	0.788

confirmed by a panel of experts, including university professors. Therefore, the study instrument was drafted again to rephrase the incomprehensible terms and omit the vague questions. In addition, the majority of the questions were adopted and modified from previous studies (14, 15). The face validity of the questionnaire was ascertained as the items of the instruments were adapted from the literature. In this study, the reliability of the subscales was defined based on the Cronbach’s alpha coefficient. The items of the questionnaire were based on a 2-point Likert scale that measured the perception of respondents regarding the contraceptives and subjects’ authority. In this regard, Table 1 tabulates the Cronbach’s alpha coefficients were acceptable for both of them.

Finally, the data were analyzed in SPSS software (version 20). In detail, the demographic and socioeconomic characteristics of the target population were described by tables and graphs. The data were analyzed using Chi-square test and multiple logistic regression. In this regard, the data were interpreted using the odds ratio with a 95% confidence interval. Maximum likelihood technique predicted the coefficients of the multiples logistics regression models. P-value less than 0.05 was considered statistically significant.

Before conducting the study, considering the ethical issues, the participants were informed that their information would be remained confidential and exclusively used in this project.

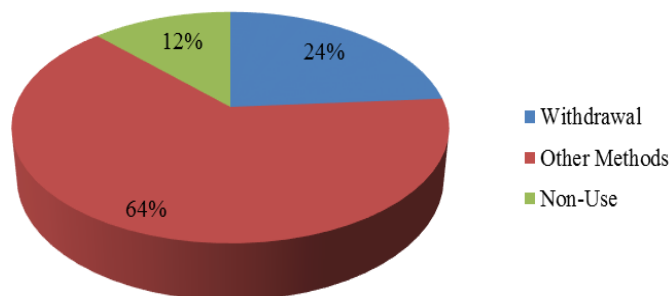
In addition, the subjects were told that their participation would be voluntarily and they can withdraw from the study at any time. Other phases of ethical issues, such as plagiarism, misconduct, and double publication, were completely controlled by the authors.

Results

Graph 1 depicts that 24.0% of women used withdrawal as a contraceptive method. Table 2 presents the comparison between the current users and non-users of the withdrawal method according to socioeconomic, cultural, and accessible factors. Bivariate analysis was performed to compare the withdrawal users and the non-users before the conduction of multiple logistic regression. The variations in using the withdrawal method among the two groups were expressed by Chi-square test.

Table 2 shows that there was no significant relationship between age and withdrawal use ($P>0.05$). The highest rate of using withdrawal as a contraceptive method was related to women within the age ranges of 30-34 (5.1%), 25-29 (4.2%), and 35-39 (4.0) years. Ethnicity is another variable that may affect contraceptive use. However, Table 1 tabulates no significant difference between the ethnic groups in the Shiraz regarding withdrawal use ($P>0.05$).

Based on Table 1, a significant relationship was observed between withdrawal use and educational level of the participants ($P<0.05$). In fact, the highest level of withdrawal use was related to the women with tertiary education



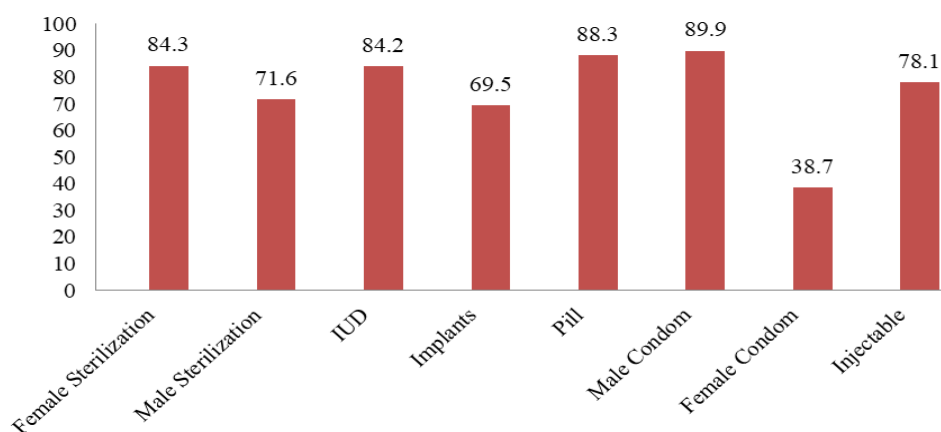
Graph 1. Type of contraceptive method

Table 2. Contraceptive use according to demographic and socioeconomic factors (n=626)

Variable	Other methods (%)	Withdrawal method (%)	Non-use (%)	P-value (Chi-square test)
Age group				
15-19	1.1	2.5	1.7	045.0
20-24	17.3	15.7	11.9	
25-29	18.9	19.0	13.7	
30-34	22.2	23.1	16.9	
35-39	15.3	18.2	16.9	
40-44	12.9	8.3	16.9	
45-49	12.3	13.2	22.0	
Total	100	100	100	
Spousal age difference (year)				
Below 3	35.3	24.8	35.6	<0.001
3-6	27.4	28.9	15.3	
7-10	27.7	29.8	37.3	
10+	9.6	16.5	11.8	
Total	100	100	100	
Ethnicity				
Fars	73.2	76.0	72.9	0.604
Tork	16.4	12.4	16.9	
Lor	6.6	6.6	6.8	
Other	3.8	5.0	3.4	
Total	100	100	100	
Educational level				
Illiterate	6.5	10.8	1.7	<0.001
Elementary	15.1	7.4	30.5	
Secondary	16.7	18.2	11.9	
Tertiary	33.2	38.8	30.5	
Academic education	28.5	24.8	25.4	
Total	100	100	100	
Residential place				
City	67.1	81.0	61.0	<0.001
Rural	32.9	19.0	39.0	
Total	100	100	100	
Actual number of birth				
0	18.9	15.7	15.3	0.435
1-2	54.3	57.9	50.8	
>2	26.8	26.4	33.9	
Total	100	100	100	
Desired number of children				
0	24.1	27.3	27.1	0.349
1-2	49.6	46.3	45.8	
>2	26.3	26.4	27.1	
Total	100	100	100	
Couple agreement on contraceptive method				
Yes	66.0	67.8	64.4	0.006
No	34.0	32.2	35.6	
Total	100	100	100	
Knowledge of modern contraceptives				
Yes	95.1	91.7	91.5	0.285
No	4.9	8.3	8.5	
Total	100	100	100	
Distance from health centers				
Near	65.5	66.1	66.1	0.644
Relatively far	14.5	9.9	15.3	
Far	20.0	24.0	18.6	
Total	100	100	100	

Table 2. Continued

		Respondent authority			
Low	25.2	0.8	27.1		
Moderate	72.9	25.6	72.9		
High	1.9	73.6	0.0		0.025
Total	100	100	100		
		Family income (US dollar)			
Below 100	1.6	0.8	0.0		
100-300	73.7	68.6	72.9		
300+	24.7	30.6	27.1		0.004
Total	100	100	100		



Graph 2. Familiarity with modern contraceptives

(14.1%). In terms of residential place, the findings indicated that there was a significant correlation between contraceptive method and residential place ($P < 0.05$).

In addition, the results also revealed that withdrawal use had no significant relationship with both the actual birth number and the desired number of children ($P > 0.05$). Considering the family income, it was demonstrated that a significant relationship was observed between family income and withdrawal use ($P < 0.05$). Furthermore, the highest rate of withdrawal use was associated with the women whose family income was higher than 300 dollars.

Graph 2 shows the fact that more than 69.0% of the women told they were familiar with different types of modern contraceptives except for female condom. Furthermore, withdrawal users were asked to clarify the main advantages and disadvantages of withdrawal practice and their perception of modern contraceptive methods. In this regard, about 80.0% of the subjects believed that using modern contraceptive methods can lead to

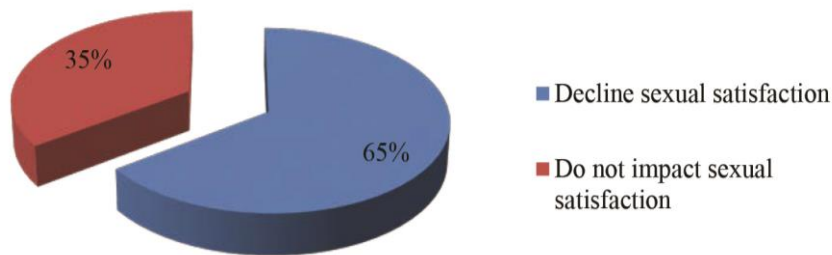
obesity, neurasthenia, and skin blemishes.

Moreover, 32% of the participants stated that using birth control pills can lead to sterilization. Considering the disadvantages of the withdrawal method, the results showed that about 73% of the subjects were concerned about unintended pregnancy. In addition, Graph 3 depicts that 65% of the cases believed that the stress of method failure decreased their sexual satisfaction. Regarding the advantages, withdrawal users believed that withdrawal was a safe and accessible method with low side effects and free of charge.

Prediction of Withdrawal Use

Table 3 tabulates the likelihood of withdrawal use based on some variables by multiple logistic regression. Three parameters anticipated the use of withdrawal method. To evaluate the fits of obtained models, different instruments were used, including the goodness of fit tests, such as the Hosmer and Lemeshow (H-L) test and goodness-of-fit measures (e.g., Cox and Snell R^2 and Nagelkerke R^2).

In the model, the values of H-L goodness-of-



Graph 3. Effect of withdrawal use on sexual satisfaction

Table 3. Prediction of withdrawal use

Predictors	Odds ratio	P-value	95% Confidence interval
Spousal age difference	1.01	0.618	0.955-1.08
Couple agreement on contraceptive method	1.47	0.199	0.816-2.64
Knowledge of modern contraceptives	0.933	0.061	0.868-1.00
Residential place (living in Shiraz)	24.91	0.000	10.48-59.21
Respondent authority	0.805	0.016	0.675-0.960
Negative perception of modern contraceptives	1.42	0.000	1.25-1.61
Distance from centers providing family planning services	0.938	0.392	0.811-1.08
Income	1.00	0.793	0.999-1.00
Number of desired children	0.937	0.538	0.760-1.15
Respondent age	0.974	0.289	0.928-1.02
Ethnicity (Fars)	1.34	0.102	0.942-1.92
Educational level of respondent	1.23	0.237	0.869-1.76
Number of actual birth	1.27	0.047	1.00-1.62

Cox and Snell R²=0.236

Nagelkerke R²=0.398

Hosmer and Lemeshow Test; Sig=0.074

fit tests were higher than 0.05 indicating that the model is well-coordinated, and its anticipation does not notably differ with the obtained values (13). Other goodness-of-fit assessments were performed to find the explained systematic variance for the models. Cox and Snell R² and Nagelkerke R² produced systematic variance results ranging from 23.6% to 39.8% for the first model.

The first predictor was the residential place (OR=24.91, 95% CI=10.48-59.21, P<0.05). The possibility of withdrawal practice among couples living in Shiraz was higher, compared to that in the couples living in the rural areas. The next predictor was respondent's authority (OR=0.805, 95% CI=0.675-0.960, P<0.05). The third predictor of withdrawal use was a negative attitude toward modern contraceptives (OR=0.142, 95% CI=1.25-1.61, P<.05).

Discussion

According to the obtained results of this study, it was revealed that withdrawal was used

in 24.0% of the couples as a contraceptive method. The findings of this study showed that a significant percentage of withdrawal users were concerned about the failure method and unintended pregnancy. Furthermore, most of the withdrawal users stated that their contraceptive method negatively affected their sexual satisfaction. In other words, the use of withdrawal as a contraceptive method reduced their sexual satisfaction.

Similarly, Rahnama et al. (2010) observed that some participants were anxious about unintended pregnancy during the withdrawal use. They said that every month they were concerned about the timely incidence of menstruation (16). Regarding the advantages of the withdrawal practice, the findings of this study are consistent with those of some other studies. Accordingly, withdrawal practice was concluded as a free method, with no requirement for a physician's prescription, low complications, no health worries, trust failure regarding other methods, and convenient use.

Moreover, the subjects are afraid of infertility though practicing other contraceptives and their partners are reluctant to employ other methods. Overall, the above-mentioned issues are considered the reasons for the selection of this method (10, 11, 16).

Demographic and socioeconomic factors can affect the type of contraceptive method. The findings showed that there was no significant relationship between ethnicity and contraceptive method. Similarly, in a study carried out by Bakibinga et al. (2016) in Kenya, it was observed that ethnicity had no effect on family planning approval (17). However, the results of a study conducted by Degefa (2018) in Jijiga Town, Eastern Ethiopia, showed that the utilization level of modern contraceptives was low among the natives, compared to that in the non-natives (18).

The findings of another study carried out by Grady et al. (2015) revealed significant variation in contraceptive use according to race/ethnicity. Black women were significantly less probable to use any contraceptives in their recent intercourse, compared to white women. This difference did not appear to be due to differential socioeconomic status, reproductive characteristics or access to healthcare (19).

In Shiraz, it can be said that all women irrespective of their ethnicity received knowledge regarding contraceptives via multiple resources, such as formal education, centers for family planning service, and mass media. Moreover, modernization and urbanization process contribute to the reduction of the influence of ethnicity groups on contraceptive practice. Regarding the educational level, the level of withdrawal use among women with tertiary education was higher than that of women with lower education in contrast to the expectations. This result can reveal the fact that contraceptive practice can be affected not only by formal education but also other factors can play a significant role in selecting the right one.

In a study conducted by Erfani et al. (2012), it was believed that some effective methods dependent largely on the user's skills and experience require more information, understanding, care, and spousal cooperation, compared to other methods. For instance, the effective practice of withdrawal needs spousal cooperation and great husband care. If education

means more information, it can be expected that more educated women have greater contraceptive competence in comparison to illiterate or less educated women. In addition, educated women with higher schooling and economic status probably have more information toward the side effects of hormonal contraceptive methods (6, 9).

In contrast, Emina et al. (2014) utilizing the demographic characteristics and health surveys from 27 sub-Saharan African countries concluded that among women with at least secondary education, the modern contraceptive use is reported with a higher level. They stated that the reason could be the fact that more educated women have more information about various methods. Educated women have greater geographical and financial access to family planning services since they are more probable to live in urban areas and expensive households (20).

The findings also showed that income is another variable that has a positive relationship with withdrawal use (21). Similarly, in a study carried out by Erfani et al. (2012), it was detected that birth limiters in Iran with a higher economic status depend on withdrawal method, compared to other modern methods. However, in Turkey, the withdrawal method is associated with lower economic status (6).

The negative perception of women about modern contraceptives was one of the main predictors of withdrawal practice. In addition, the descriptive results revealed the fact that a high percentage of women in Shiraz were concerned about the side effects of modern contraceptive methods. It is documented that understanding contraceptive advantages and disadvantages may affect the couple's decision regarding the use, non-use or stopping contraceptives (22).

In another study conducted by Easterlin (1975), it was stated that women's understanding regarding expenses may inhibit them from the utilization of contraceptives. The psychological expenses of fertility control by contraceptives are not consistent with moral and religious beliefs, social reproach and fear of penalties, inconvenience related to other methods, being afraid of health problems and contraceptive complications, being ashamed of gynecological

examination, and worry over contraceptive failure (23).

The residential place was another main predictor of withdrawal use. It seems that urban women are more worried about modern contraceptive methods, compared to rural women. As a result, they probably use withdrawal as a contraceptive method. However, it is believed that people in urban areas have a higher experience of mass media and extensive chances to perceive and deliberate the lifestyles of other social groups.

Furthermore, urban life may affect developing the network of social relations as a useful tool for obtaining contraceptive and family planning information. Therefore, it is more likely to utilize modern contraceptive methods (24, 25). Women's authority was also among the three predictors of withdrawal use. The women with higher authority probably utilized withdrawal as a contraceptive method. In a study conducted by Rahman et al. (2014), it was expressed that women's dominance is important; however, it is a less evaluated determinant of utilizing contraceptives among women that can regulate their fertility. They also concluded that autonomy in household decision-making is significantly related to the present use of contraceptives and future intention to use contraceptives (15).

In sum, one of the main advantages of the present study was its focus on the most popular traditional contraceptive method among Iranian couples. Furthermore, this study investigated the effect of withdrawal use on sexual satisfaction since a limited number of studies have been conducted regarding this issue in Iran. It is documented that men have a key role in contraceptive practice while the present study population was only women.

Therefore, it is recommended to perform further studies to investigate both men and women. The utilized method was another limitation of this study. The contraceptive methods and their effects on sexual satisfaction were complex issues that their in-depth perception requires mixed methods (i.e., both quantitative and qualitative methods).

Conclusion

Overall, according to the obtained results of

this study, the withdrawal practice was a difficult issue affected by a set of demographic, socioeconomic, and psychological factors. Furthermore, considering the rate of withdrawal use among the women in Shiraz, a significant percentage of women were at risk of unintended pregnancy and the related complications. Sexual satisfaction in most couples (withdrawal users) as another important issue was affected by their contraceptive method. Obviously, sexual satisfaction was one of the main factors contributing to marital satisfaction. Accordingly, researchers should pay more attention to contraceptive issues.

Considering the effective factors in contraceptive method, the issues, such as insufficient knowledge of modern contraceptives, rumors about their side effects, and the prevalence rate of withdrawal use can cause shortcomings in family planning system of Iran. The couples need sufficient and accurate knowledge about different aspects of family planning and birth control methods for decision-making leading to better results. Consequently, to enhance the level of modern contraceptive practice among couples, more attention should be paid by the reproductive health services to adequate and accurate information delivery regarding the contraceptives.

Acknowledgements

The authors would like to thank all the married women of Shiraz for their cooperation in data collection. In addition, it should be mentioned that this study was performed using a personal budget.

Conflicts of interest

The authors declare no conflicts of interest.

References

1. Randall E. Family planning programmers review. London: Population Matters; 2012.
2. Population division. United Nations, World Contraceptives Use. Available at: URL: <http://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2016.shtml>; 2016.
3. Santow G. Coitus interruptus and the control of natural fertility. *Population Studies*. 1995; 49(1):19-43.
4. Myntti C, Ballan A, Dewachi O, El-Kak F, Deeb ME. Challenging the stereotypes: men, withdrawal, and reproductive health in Lebanon. *Contra-*

- ception. 2002; 65(2):165-170.
5. Cleland J, Conde-Agudelo A, Peterson H, Ross J, Tsui A. Contraception and health. *The Lancet*. 2012; 380(9837):149-156.
 6. Erfani A, Yuksel-Kaptanoglu I. The use of withdrawal among birth limiters in Iran and Turkey. *Studies in Family Planning*. 2012; 43(1):21-32.
 7. Kowal D. *Coitus interruptus (withdrawal). Contraceptive technology*. 18th ed. New York, NY: Ardent Media Inc; 2004. P. 311-315.
 8. Bommaraju A. Determinants of contraceptive choice: factors affecting contraceptive nonuse among urban women utilizing title X services. [Doctoral Thesis]. Ohio: University of Cincinnati; 2013.
 9. Sarvestani KH, Ahmadi A, Enayat H, Movahed M. Level and factors related to unintended pregnancy with a brief review of new population policies in Iran. *Iranian Journal of Public Health*. 2017; 46(7):973.
 10. Yanikkerem E, Acar H, Elem E. Withdrawal users' perceptions of and experience with contraceptive methods in Manisa, Turkey. *Midwifery*. 2006; 22(3):274-284.
 11. Karakoyunlu FB. The frequency of sexual dysfunction among married women. Akdeniz University Health Sciences Enstitute, Obstetric and Gynecological Nursing, Postgraduate. [Doctoral Thesis]. Antalya: Akdeniz University; 2007.
 12. Krejcie RV, Morgan DW. Determining sample size for research activities. *Educational and Psychological Measurement*. 1970; 30(3):607-610.
 13. Bell E, Bryman A, Harley B. *Business research methods*. Oxford: Oxford University Press; 2018.
 14. Rahman H, Khalda E, Kar S, Kharka L, Bhutia GP. Knowledge of, attitudes toward, and barriers to the practice of emergency contraception among women in Sikkim, India. *International Journal of Gynecology & Obstetrics*. 2013; 122(2):99-103.
 15. Rahman MM, Mostofa MG, Hoque MA. Women's household decision-making autonomy and contraceptive behavior among Bangladeshi women. *Sexual & Reproductive Healthcare*. 2014; 5(1):9-15.
 16. Rahnema P, Hidarnia A, Shokravi FA, Kazemnejad A, Oakley D, Montazeri A. Why Iranian married women use withdrawal instead of oral contraceptives? A qualitative study from Iran. *BMC Public Health*. 2010; 10(1):289.
 17. Bakibinga P, Mutombo N, Mukiira C, Kamande E, Ezeh A, Muga R. The influence of religion and ethnicity on family planning approval: a case for women in rural Western Kenya. *Journal of Religion and Health*. 2016; 55(1):192-205.
 18. Degefa H, Menigiste B, Dingeta T. Modern contraceptive utilization and its associated factors among indigenous and non-indigenous married women of reproductive age group in Jigjiga town, Eastern Ethiopia. [Doctoral Thesis]. Ethiopia: Haramaya University; 2018.
 19. Grady CD, Dehlendorf C, Cohen ED, Schwarz EB, Borrero S. Racial and ethnic differences in contraceptive use among women who desire no future children, 2006-2010 national survey of family growth. *Contraception*. 2015; 92(1):62-70.
 20. Emina JB, Chirwa T, Kandala NB. Trend in the use of modern contraception in sub-Saharan Africa: does women's education matter? *Contraception*. 2014; 90(2):154-161.
 21. Creanga AA, Gillespie D, Karklins S, Tsui AO. Low use of contraception among poor women in Africa: an equity issue. *Bulletin of the World Health Organization*. 2011; 89(4):258-266.
 22. Moronkola OA, Ojediran MM, Amosu A. Reproductive health knowledge, beliefs and determinants of contraceptives use among women attending family planning clinics in Ibadan, Nigeria. *African Health Sciences*. 2006; 6(3):155-159.
 23. Easterlin RA. An economic framework for fertility analysis. *Studies in Family Planning*. 1975; 6(3): 54-63.
 24. Mostafa Kamal SM, Aynul Islam M. Contraceptive use: socioeconomic correlates and method choices in rural Bangladesh. *Asia Pacific Journal of Public Health*. 2010; 22(4):436-450.
 25. Gordon C, Sabates R, Bond R, Wubshet T. Women's education and modern contraceptive use in Ethiopia. *International Journal of Education*. 2011; 3(1):9.