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Relationship between reproductive health literacy and components of healthy fertility in women of the reproductive age

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Abstract:

BACKGROUND AND AIM: One of the key factors affecting women's behavior with fertility issues is their health literacy, but this topic has been less addressed in the existing studies. We aimed to determine the relationship between reproductive health literacy and components of healthy fertility in women of reproductive age.

MATERIALS AND METHODS: This cross-sectional study was conducted from March 2019 to September 2014 on 230 married women who were referred to comprehensive health centers in Lordegan city. Data were collected using a reproductive health literacy questionnaire, demographic and fertility information checklist, and components of healthy fertility. Data analysis was done using SPSS software, version 20. Pearson, Spearman, and independent t-tests were used as appropriate.

RESULTS: The mean ± SD reproductive health literacy score in the participants was 43.80 ± 18.99 depicting an average literacy level in more than half of the women. Also, the reproductive health literacy score had a statistically significant relationship with the use of low-failure contraceptive methods ($P < 0.001$) and planned pregnancy ($P = 0.03$). However, this relationship was not significant regarding pre-pregnancy care ($P = 0.88$) and observing the interval between pregnancies ($P = 0.57$).

CONCLUSION: We found a relationship between the level of reproductive health literacy and the use of family planning methods with low failure and planned pregnancy. Hence, it seems that interventions to improve reproductive health literacy are effective in reducing the occurrence of high-risk pregnancies and unwanted and unplanned pregnancies. Therefore, it is suggested that the health system consider and provide education related to reproductive health literacy as a part of healthy reproductive services.

Keywords:

Contraceptive behavior, health literacy, reproductive behavior, reproductive health, women

Introduction

Reproductive health is defined as having a satisfying and safe sex life as well as having the ability to reproduce and the freedom to decide when and how often to have children. In other words, helping all members of society to control their fertility and experience healthy fertility is one of the main missions of reproductive health programs.[1] It is possible to provide a healthy fertility experience for people in the community by providing access to all information related to reproductive health, as well as access to healthy reproductive services and care services before, during, and after pregnancy.[2] The nationwide implementation of the integrated care program of healthy reproductive services started in Iran in 2019 in comprehensive health centers. The main components of this program are respect for the right of couples to obtain correct information and necessary

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services about healthy fertility and childbearing, respecting the two-year interval for childbearing, providing pre-pregnancy care by qualified personnel, using low failure contraceptive methods in couples who do not have the conditions for childbearing, having a planned pregnancy and the desired number of children. The ultimate goal of this program is to reduce maternal and infant mortality and related complications.[3] According to the World Health Organization (WHO) report, 94% of all maternal deaths occur in low, middle, and very low-income countries. To prevent these deaths, it is necessary to prevent unwanted pregnancies. Also, providing skilled care before and during pregnancy and childbirth and after has been proposed as another solution for maternal death.[4]

The success and effectiveness of healthy fertility services, on the one hand, and the unmet needs related to it, on the other hand, are the causes of unplanned and unwanted pregnancies and the inability of couples to observe the correct childbearing interval.[5] These pregnancies are common health and social problems in the country, which have a negative effect on the health of mothers and infants. Marriage at a young age, economic poverty, lack of access to contraceptives, and contradictory beliefs about sexual issues are major contributing factors.[6] In general, unplanned and unwanted pregnancies increase the physical and mental complications of the mother and child and impose a large financial burden on the health system.[7] Of the 215 million pregnancies that occur annually worldwide, more than a third of them are unwanted, and 21% of them end with induced abortion. About 21 million induced abortions are unsafe and finally, a quarter of them lead to severe complications and even the death of the mother.[8] According to the statistics announced in Iran, nearly one-fifth of pregnancies occur unintentionally, comprising 18.6% of the total pregnancy index.[9] One of the important causes of unwanted pregnancy is the lack or incorrect use of available effective contraceptive methods. A study showed that in Tehran, the use of condoms and withdrawal methods increased from 20% in 1979 to 69% in 1993. Amiri and colleagues also stated that the most frequent method of prevention in women was the withdrawal method.[10] In another study, Gholami and Shabazian stated that the causes of unwanted pregnancy are the type of contraceptive method used by women, and how they use that method.[11]

As mentioned, access to quality care before, during pregnancy, and around childbirth is another way to ensure healthy fertility and reduce maternal mortality. Preconception care is an important part of this care, and evidence has shown that doing it is one of the most effective measures in predicting and planning to reduce mortality and complications in mothers and newborns.[12] The amount of this care has been reported differently in several countries, for example, it was estimated to be 40% in China and 18.2% in Ethiopia.[13,14] The frequency of performing preconception care in Iran is also low with varying frequencies in different cities. For example, the frequency of performing this care in Semnan and Gorgan was 11.6% and 32.7%, respectively.[15] In a study on the barriers of preconception, it was concluded that increasing awareness, improving attitudes about the importance of care, and increasing access are among the most important strategies to improve the receival of these services.[16]

One of the key factors affecting women's behavior and decisions related to fertility issues and how they use available services is their health literacy status. The findings of a systematic review show that women's health literacy is associated with knowledge and behavior in the field of contraception, fertility-related decisions, prenatal screening, vitamin intake during pregnancy, exclusive breastfeeding, and postpartum depression.[17] On the other hand, the results of a meta-analysis also showed that the average score of Iranian women's health literacy is in the low or borderline range[18] and the results showed that most of the studies focused on general health literacy and few studies have been done on reproductive health literacy, which is a specific field of health.

The high rate of unplanned or unwanted pregnancies, the use of traditional contraceptive methods or incorrect use of methods, and women's insufficient attention to the use of preconception care make it necessary to conduct studies to investigate its causes. Therefore, we aimed to determine the relationship between reproductive health literacy and components of healthy fertility in women of reproductive age in Lordegan city, Iran.

Materials and Methods

Study Design and Setting

This cross-sectional study was conducted with a descriptive-analytical approach in Lordegan city from March 2020 to September 2021. Lordegan is one of the cities of Chaharmahal and Bakhtiari province and has a population of 450,000 people, half of whom are women (22,400).[19] The city of Lordegan has six community health centers. All these centers provide services related to healthy fertility to the population they cover.

Study Participants and Sampling

The study population was women of reproductive ages referring to comprehensive health centers of Lordegan city, who were included in the study by quota sampling from all comprehensive health centers of Lordegan (according to the population of women

of reproductive ages covered by the center's services). In each center, convenient sampling was used. The inclusion criteria were being married and having a spouse, being in the reproductive ages (15–49 years), living with a spouse, having Iranian citizenship, the ability to read and write and answer all the questions in the questionnaire, the absence of confirmed diagnosis of primary infertility or recent secondary infertility in a woman or spouse, not being currently pregnant, absence of underlying diseases (which prohibits the use of contraceptive methods or necessitates the need for abortion treatment) and being married for at least two years. We excluded women who did not want to cooperate or those who had not properly completed the questionnaires. Ultimately, 228 women were included considering 80% power, 95% confidence interval (CI), the correlation coefficient between reproductive health literacy score and components of healthy fertility equal to 0.2, and a dropout rate of 20%.

Data Collection Method and Tools

Sampling started by obtaining permission from the Vice-Chancellor Office for Research of the university and Lordegan Vice-Chancellor of Health and then continued with the researcher going to comprehensive health centers, presenting a letter of introduction, and talking to eligible women. After communicating with the participants, the researcher introduced herself and by explaining the objectives and method of conducting the study, the women were asked to cooperate in completing the study questionnaires upon their will. The questionnaire was completed as a self-report. The data collection tool was a researcher-made questionnaire regarding women's reproductive health literacy. Also, the researcher's checklist was used to record demographic and fertility information and components of healthy fertility. In this research, observing a two-year interval between pregnancy and previous birth, using low failure contraceptive methods in eligible people, planned pregnancy, and performing preconception care were considered components of a healthy fertility. Also, family planning methods such as the condom method, the withdrawal method, and the rhythmic method were defined as methods with high failure and other methods as low failure contraceptive methods.

The researcher-made reproductive health literacy questionnaire was adapted from a questionnaire made in a study at Shiga University in Japan.[20] This tool measured the level of women's reproductive health literacy with 21 items. After the translation and re-translation of the questionnaire, its face and content validity were first checked qualitatively by asking the opinions of 15 experts. After stating the objectives of the study, they were asked to review the questionnaire in terms of fluency, easy understanding, grammar, style of writing the items, and ease of completion and add their suggested questions to the questionnaire. Also, the content validity was investigated quantitatively by asking the opinions of 15 experts and calculating the content validity index (CVI) and content validity ratio (CVR), and its reliability by test-retest method (completion of the questionnaire by 20 women with an interval of two weeks) and calculating the internal correlation by calculating the Cronbach's alpha coefficient. Items with CVR above 0.49 and CVI above 0.79 were kept. Ultimately, 29 items remained in the questionnaire. The items were scored on a five-point Likert scale as follows: not at all (score = 0), very little (score = 1), little (score = 2), high (score = 3), and very high (score = 4). The score range of the questionnaire was 0–116 and a higher score indicated a better level of reproductive health literacy. The reliability of the questionnaire was approved with r = 0.72 and Cronbach's alpha of 0.8.

Data were analyzed using SPSS software, version 20 (SPSS, Chicago, IL, USA), and an independent t-test. Before conducting the statistical test, the normality of the data distribution was checked and confirmed with the Kolmogorov-Smirnov test. The significance level in the statistical test was considered to be 5%.

Ethical Considerations

All ethical considerations, such as obtaining approval for the research project from the Ethics Committee (code: IR.MUI.RESEARCH.REC.1400.156), keeping the participants' information confidential, and obtaining informed consent from them, were observed. Considering the study was conducted during the COVID-19 pandemic, social distancing and health protocols were also considered for people who were referred in person.

Results

This study was done on 230 women aged 17–46 years living in Lordegan city with an average age of 30.69 ± 6.86 years. In terms of age, most women were 25–29 years old (27.4%). Most women had a diploma degree (43%) and were housewives (63.47%). Among the investigated women, the mean ± SD number of pregnancies was 2.74 ± 1.46 and the mean ± SD number of deliveries was 2.21 ± 1.17. Most women had 1-2 pregnancies (52.2%), 1 or 2 deliveries (62.2%), and no history of abortion (64.3%) [Table 1].

The women's mean ± SD reproductive health literacy score was 43.80 ± 18.99. Reproductive health literacy was poor at 38.3%, average at 57.8%, and good at 3.9%. Based on the results of the independent *t*-test, a significant difference was observed in the mean reproductive health literacy score of eligible women using contraceptive methods with low failure and eligible women who

Table 1: Frequency distribution of demographic and fertility characteristics of the participants

Variable	Categories	Number	Percentage
Age	<25 years	52	22.6
	25–29 years	63	27.4
	30–34 years	37	16.1
	35–39 years	54	23.5
	40 years and older	24	10.4
Level of education	Less than a diploma	68	29.4
	diploma	99	43
	university	63	27.4
Job	employed	84	36.52
	Housewife	146	63.47
Gravid	1–2 pregnancies	120	52.2
	3–4 pregnancies	85	37
	5–9 pregnancies	25	10.49
	Zero	7	3
Number of births	1–2 childbirth	143	62.2
	3–4 childbirth	70	30.4
	5–6 childbirth	10	4.3
Number of abortions	No abortion	148	64.3
	once	53	23
	2–4 times	29	12.6

did not use these methods ($P < 0.001$). In women who used contraceptive methods with low failure, the mean reproductive health literacy was higher. Also, the mean reproductive health literacy score in women who had a planned pregnancy was higher than in women whose pregnancy was not planned ($P = 0.03$). However, we found no significant difference between the mean reproductive health literacy score of women who had followed the correct interval of having children compared with those who did not ($P = 0.57$). Moreover, no significant difference was observed in the mean reproductive health literacy score of women who had performed preconception care compared to those who did not go for this care [$P = 0.88$, Table 2].

Discussion

We aimed to determine the relationship between reproductive health literacy and components of healthy fertility in women of reproductive age. The results showed that the mean ± SD reproductive health literacy score was good (43.8 ± 18.99) in only 3.9% of the women and most participants (57.8%) had an average score, while 38.3% had poor literacy. This was consistent with the results of another study in Iran reporting that only 19.9% of pregnant women had sufficient health literacy and the health literacy of most women was at an insufficient and borderline level.[21] Kohan and colleagues reported a mean ± SD reproductive health literacy score of 66.16 ± 10.26 in Isfahanian women aged 18–62 years, which was higher than the mean reproductive health literacy score in our study.[22] The level of functional health literacy of pregnant mothers in Urmia city was insufficient in 24% of the participants, borderline in 25%, and sufficient in 51%.[23] In determining the health literacy status of pregnant women in Bandar Abbas city (2016), 27.2% of women had insufficient health literacy, 20.8% had borderline health literacy, and 52% had sufficient health literacy.[24] In another study on health literacy and self-care in women of reproductive age, 28%, 23%, and 49% of the studied women had insufficient, borderline, and sufficient literacy levels, respectively.[25] It seems that in all the mentioned studies, the number of people who had sufficient levels of health literacy was significantly higher than the figures obtained in our study. Two reasons can be mentioned for this difference. First, in most of the mentioned studies, general health literacy questionnaires or functional health literacy questionnaires were used, and women's health literacy was probably better in the general health field than in the reproductive health field. However, since the same questionnaire was used in the study by Kohan and colleagues, another reason can be attributed to the socio-cultural and economic differences in relation to the studied population. Studies that have been done more widely have reported that low education level, higher age, being unemployed, being a housewife (in women), living in a village, old age, low education level, and low socioeconomic level are all associated with insufficient health literacy.[26-29] Many of these factors have not been examined in our study.

The results showed that the reproductive health literacy score has a significant relationship with using low failure contraceptive methods. So the mean reproductive health literacy score in women who used low-failure contraception was significantly higher than women who did not use low-failure contraception. The result of our study was consistent with the findings of Yee *et al.* in another study showing that a low health literacy score was related to poor knowledge of contraception and difficulty in using contraceptive methods, and these women face problems in deciding to use contraceptive methods.[23] Also, the results of the present study are in line with the results of another study showing that both factors of health literacy and knowledge related to the use of oral contraceptive pills are significantly related to adherence to the regular use of these pills. However, health literacy was the strongest predictor of adherence to oral contraceptive pills (in multivariate regression).[30] It seems that higher reproductive health literacy increases women's awareness and ability to use family planning methods, and these women use low-failure contraceptive methods more than other women to reduce the number of fertility and its timing as they wished.

Data analysis showed that the mean reproductive health literacy score did not differ significantly in women who

Table 2: Mean reproductive health literacy scores of the participants based on the components of healthy fertility

Variable	Reproductive health literacy score Mean±SD	*t*	*P*
Using a contraceptive method with a low failure rate			
Yes	50.76±17.87	3.87	<0.001
No	40.34±18.17		
Observance of the interval between pregnancy and previous birth			
Yes	42.94±18.48	−0.559	0.57
No	44.82±18.83		
Preconception care			
Yes	38.35±20.02	−0.14	0.88
No	39.44±13.88		
Planned pregnancy			
Yes	43.53±18.97	2.18	0.03
No	50.94±16.71		

had followed the correct interval of having children and those who did not. Different studies have linked different factors with the interval between births. For example, Bagheri and Saadati's found that working women, women living in developed urban areas, and young women, give birth to their second child with a longer interval.[31] In African women, Miherti and colleagues stated that the mother's lack of formal education, lack of use of contraceptive methods, and a short period of breastfeeding (less than 24 months) are the determining factors for a short interval between pregnancies.[32] In their systematic review, Damtie and colleagues concluded that in Ethiopian women, no use of contraceptive methods, living in rural areas, and low duration of breastfeeding were associated with a short interval between births (less than two years).[33] In another study, the interval between births in women with higher education and women whose previous child was a boy was significantly greater than in other women.[34] Based on the results of these studies and the fact that the level of education has a direct relationship with the level of health literacy,[25] it may be possible to conclude that the level of reproductive health literacy has a direct relationship with the level of compliance with the correct distance between births. However, to the best of our knowledge, we found no studies that directly examined the relationship between the level of reproductive health literacy and the interval between births. Therefore, it is necessary to conduct more studies with a larger sample size to investigate the relationship between reproductive health literacy and the interval between births.

We found no significant difference in the mean reproductive health literacy score in women who have performed preconception care and those who had not performed it. Inconsistently, many studies have shown that the level of health literacy was related to preventive care and care for chronic diseases. Yee and colleagues found that an insufficient level of health literacy was correlated with low levels of health-related knowledge and performing less self-care in pregnant women with diabetes.[35] Asadi *et al*. found that women with a higher level of health literacy used more preconception counseling than other women.[36] Since this finding of our study is in contradiction with the results of other studies and it seems logical that women with a higher level of health literacy refer more often for preconception care, it is necessary to conduct studies with a larger sample size in this field.

In this study, the mean reproductive health literacy score in women who had a planned pregnancy was significantly higher than women who had an unplanned pregnancy, our results are consistent with the study of Yee *et al*.[37] Also, Dongarwar and Salihu concluded that a higher level of reproductive and sexual health literacy was associated with a lower rate of unplanned pregnancy and repeated pregnancy in teenagers, and these two factors have a direct relationship.[38] Based on the results it can be said that increasing the level of reproductive health literacy increases the ability of women to control their fertility and provides the possibility of planning for births.

The use of a special reproductive health literacy questionnaire is one of the strengths of the present study, which increased the power of reasoning in relation to the variables of the study. However, the small sample size and the dependence on some main research variables such as health literacy and women's fertility behaviors on the sociocultural background reduced the ability to generalize the results and are the limitations of the present study. To solve this limitation, it is necessary to conduct studies with a larger sample size and in different sociocultural contexts.

Conclusion

We found a significant relationship between the level of reproductive health literacy and the use of family planning methods with low failure and planned pregnancy. Considering that if unplanned pregnancies

continue or if legal and illegal measures are taken to terminate them, they have many consequences for the health of the mother and the fetus and contribute greatly to maternal death and complication. Therefore, it is suggested that the health system consider and provide education related to reproductive health literacy as part of the healthy reproductive services currently being provided in the country.

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Conflicts of Interest

There are no conflicts of interest.

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