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Health literacy and unintended pregnancy among rural Iranian women

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Brief Article

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Abstract

Health literacy is a significant element in the ability of a woman to engage in health promotion and preventive activities both for herself and her children. This study aimed to evaluate health literacy and the rate of unintended pregnancies, as well as the relationship between health literacy and unintended pregnancies among rural Iranian married women. This study was conducted on 240 rural married women aged 18 to 45 years. To collect data, the Persian version of the test of functional health literacy in adults and a checklist of demographic characteristics and unintended pregnancy were used. Approximately, 62% of the women studied had low literacy level (marginal and inadequate) and the rate of unintended pregnancies was 35%. A significant correlation was observed between health literacy level and education level, age, number of children, and unintended pregnancy. Then, the level of health literacy was low among rural married women and this factor was associated with their unintended pregnancies.

Keywords: Health Literacy, Pregnancy, Rural, Unintended

Introduction

Health literacy is a significant element in the ability of a woman to engage in health promotion and preventive activities both for herself and her children [1]. It includes reading, listening, analyzing, and decision-making skills and the ability to apply these skills in health conditions and it is not necessarily associated with years of education or general reading ability [2]. Pregnancy is one of the most important periods in the life of every woman because her health condition from pre-pregnancy until delivery directly affects the health of the baby, family, and society and it is an important factor that can endanger women's health in various ways

whether it is intended or unintended pregnancy. Unintended pregnancy is defined a pregnancy that is unplanned by the man, woman, or both [3]. Due to the illegality of abortion, this is a unique problem in Islamic countries which completely affects the family and society. This problem can result in many physical-psychological consequences, such as loss of employment and educational opportunities. Therefore, the resulting baby will face psychological deficiencies, as well as lack of welfare facilities [3]. Among the risks of unintended pregnancies that can lead to maternal death are infectious abortions. Therefore, prevention from unintended pregnancies can lead to a 20-40 percent reduction in maternal mortality [4]. Low health literacy, inability in numeracy and poor knowledge on how to use contraceptive devices properly are effective in unintended pregnancy [5]. Due to the limited number of studies conducted in this area and the significance of this issue, this study was conducted to evaluate the health literacy and determine the rate of unintended pregnancies, as well as assess the relationship between health literacy and unintended pregnancy among rural married women under the coverage of family physician.

Method

This study conducted on 240 rural married women aged 18 to 45 years from March to August 2013 in Izeh (the city in southwest of Iran) health centers. Inclusion criteria were as follows: married women aged 18 to 45 years, being able to read and write, having Iranian citizenship, being born in Izeh, living in Izeh over the last year, and being pregnant at the present moment or in the past. Deaf, hearing-impaired, blind, and visually impaired individuals, people with mental disorders, those who had emigrated from the city to the village over the last 5 years, infertile women, and those who had not experienced pregnancy until this study were excluded.

Then, cluster sampling was used and the subjects were randomly selected within clusters. In this study, based on the distance from the city and according to the population under the coverage, 240 participants from three centers (132 participants from a center with long distance 54 participants from a center with moderate distance, and 54 individuals from a center with close distance) were selected.

Tehrani Banihashemi et al. reported the health literacy of women with 1 to 8 years of education as 18%, which was the lowest ratio in Iran [5]. By considering a 95% confidence level, p=0.18, and d=0.05, the statistical population required for the study was calculated as 240 participants.

Test of functional health literacy in adult (TOFHLA), a checklist of demographic characteristics, and a checklist of unintended pregnancy were completed in an interview to collect data.

Validity and reliability of the Persian version of TOFHLA, which is one of the most reliable and important tests for evaluating the health literacy in the world, was validated by Tehrani Banihashemi et al. in Iran with reliability of 79% for numeracy part and 88% for reading comprehension using Cronbach's alpha test at 95% confidence level [5]. In the present study, the Crobach's alpha was 94% for the whole questionnaire, 79% for the numeracy part, and 94% for reading comprehension.

In this study, unintended pregnancy was defined according to the American National Institute of Health, as mistimed pregnancy- i.e. a pregnancy without any previous intention which is mistimed by less than two years, equal to two years (moderately mistimed), or more than two years (seriously mistimed)- and unwanted pregnancy while the woman never wanted to have a child. Another viewpoint for classification is as follows: 1. Unintended by mother: when the woman gets pregnant against her consent (mistimed and never wanted); 2. Unintended by father (when the woman gets pregnant against her husband's consent; 3. mutually unintended pregnancy: when both father and mother disagreed with the last pregnancy; 4. unintended pregnancy: a pregnancy which is unintended by man, woman, or both.

Statistical analysis was conducted in SPSS-19 using descriptive statistics of absolute and relative frequency distribution, mean, and standard deviation to describe the data, inferential statistics to investigate the relationship between the variables and to compare them with each other, and chi-square test to assess the relationship between qualitative variables. p-value was considered less than 0.05 to be statistically significant.

Results

The mean age (±SD) of the subjects with a minimum and maximum of 18 and 45 years was 28.42 (±6.38). The group aged 25-29 years had the most frequency with 75 participants (31.2 percent) and the group aged 40-44 years had the lowest frequency with 14 subjects (8.5 percent).

At the time of this study, 27.9% of women were pregnant and 72.1% were not, although the latter group had the experience of pregnancy in the past. 15.4% of women had no children, 32.1% had one, 30% had two, 11.2% had three, and 11.2% had four and more than four children.

The mean health literacy score for women was 64.04±2.05 out of 100 and the mean score for reading comprehension (34.95±1.6) was more than the numeracy section (29.11±12.43). Of the participants, 38.75% of women had inadequate, 23.33% had marginal, and 37.91% had adequate health literacy. In total, 62.09% of the women had a low level of literacy (marginal and inadequate).

A statistically significant correlation was observed between the level of health literacy and decreasing age and increasing education level; in other words, as the age increased (Kendall's tau-c=-0.20, $p<0.002$) and the level of education decreased (Kendall's tau-c=0.38, $p<0.0001$), the level of health literacy decreased. There was a significant correlation between women's health literacy level and number of children (Kendall's tau-c=-0.30, $p<0.0001$); in other words, as the level of health literacy decreased, the number of children increased. The Chi-square test showed that there was no significant correlation between the level of health literacy and employment status and distance between the places of residence to the city.

The rate of mistimed pregnancy was 20.8% and the rate of unwanted pregnancy was 6.2% (Table 1).

Table 1 *The relationship between health literacy and status of the last pregnancy (based on woman's opinion on her pregnancy)*

Status of the last pregnancy	Number (percentage)	Number of inadequate health literacy	Percentage of inadequate health literacy	Number of marginal health literacy	Percentage of marginal health literacy	Number of marginal health literacy	Percentage of marginal health literacy	Test result
Wanted	175 (72.9%)	58	33.1	50	28.6	67	38.3	$p<0.0001$ $\chi^2=26.13$ df = 4
Mistimed	50 (20.8%)	21	42.0	6	12.0	23	46.0	Cramer's V=0.23
Unwanted by woman	15 (6.2%)	14	93.3	0	0	1	6.7	

Compared to women, men planned more for the pregnancy of their wives, such that the rate of unintended pregnancies by fathers (22.1%) was less than that by mothers (27.1%) and the rate of mutually unintended pregnancy was only 14.2%. The total rate of unintended pregnancy was 35% and there was a statistically significant correlation between the level of health literacy and unintended pregnancy (Cramer's V=0.31, $p<0.0001$) (Table 2). Unintended pregnancy had a significant correlation with the numeracy section of health literacy questionnaire ($p<0.0001$, Eta=0.27), but it had no correlation with the reading section of the questionnaire.

Table 2 *The relationship between health literacy level and unintended pregnancy*

Status of the last pregnancy	Number	Percentage	Number of inadequate health literacy	Percentage of inadequate health literacy	Number of marginal health literacy	Percentage of marginal health literacy	Number of adequate health literacy	Percentage of adequate health literacy	Test result
Unintended by father	53	22.1	32	60.4	4	7.5	17	32.1	p<0.0001 df=2 χ^2=16.8 Cramer's V=0.25
Unintended by mother	65	27.1	35	53.8	6	9.2	24	36.9	p=0.002 df=2 χ^2=26.13 Cramer's V = 0.23
Mutually unintended	34	14.2	18	52.9	2	5.9	14	41.2	p<0.0001 df=4 χ^2=26.47 Cramer's V= 0.23
Total unintended pregnancies	84	35.0	49	58.3	8	9.5	27	32.1	p<0.0001 df=2 χ^2=24.47 Cramer's V=0.31

Discussion

The results of this study showed that the health literacy of most women is low, as more than half of the women studied had inadequate and marginal literacy. Other national studies also reported that the health literacy level of women is low [6-10]. We found that as the education level increased and the age decreased, the number of people with inadequate health literacy level reduced; this finding is in line with the findings of other studies [6-8]. In a study conducted by Mahmoud Nekouei Moghaddam et al., there was a significant correlation between health literacy and education level of men and women, which is consistent with our finding; however, they observed no significant correlation between health literacy and age, which does not support our results [10]. Also, in the studies conducted by McLaghlin et al. [11] and Andrus et al. [12], no significant correlation was found between age and health literacy in pregnant women [11,12]. Poorreza et al. used the short Test of the Functional Health Literacy in Adults for women with type II diabetes (who referred to hospitals in Tehran). They reported a significant correlation between health literacy and education level and age [13], which is in agreement with our findings.

In this study, no significant correlation was observed between health literacy level and employment status that may be due to low number of employed people participated in this study. This result is confirmed by a number of national studies [6,7,10]. In this study, the average health literacy score in villages that were more distant from the city was a little less than the villages that were close to the city, however, no significant correlation was found in this regard. In this study, the last pregnancy of more than a third of women investigated was unintended because it was revealed that the rate of unintended pregnancy was 35%. National studies reported the various rates for unintended pregnancies (from 22 to 42%). These variations are likely due to the type of sampling and selected regions. In our study, a significant negative correlation was observed between unintended pregnancy and health literacy level, i.e. the rate of unintended pregnancy was higher in women with low education level. In addition, unintended pregnancy had a significant correlation with the numeracy section, but not with reading comprehension, so this correlation was stronger with numeracy section than the entire health literacy questionnaire (r= -0.25 compared to r=-0.21, respectively). This finding suggests that numerical literacy had a more prominent role in the increase of

unintended pregnancies compared to health literacy in the study population, while Lynn et al. reported a contrary result. They reported that poor numerical ability had a more noticeable role in unintended pregnancy than the health literacy and concluded that unintended pregnancy was associated with poor knowledge of contraceptive methods and their incorrect use. However, they used a different target group (women who had unintended pregnancies), a different health literacy assessment tool (the Test of Rapid Estimate of Adult Literacy in Medicine), as well as a different numeracy scale for assessment [14]. Also, in a study conducted by Loraine, a significant correlation was found between unintended pregnancy and low health literacy, which is consistent with our study finding [15] although they targeted pregnant patients with diabetes using short TOFHLA.

Conclusion

In the group studied, the health literacy level was low and the rate of unintended pregnancy was high in comparison with some other regions of the country. Increased unintended pregnancy is one of the negative consequences of low health literacy. Unintended pregnancy imposes huge costs on women, family, and society and is one of the indicators of the women's health in every society. The results of this study by pointing out the significance of health literacy and one of its consequences, i.e. unintended pregnancy, can be helpful in health planning and policy-making. One limitation of this study is that the health literacy was not evaluated in illiterate women. Therefore, the results of this study cannot be generalized to all rural women. Illiterate women require different training tools compared to literate women. Thus, it is recommended that the training tools, such as video or audio messages, which are appropriate for this group to be used. Another limitation is that no instrument was used to assess the numeracy to determine the relationship between unintended pregnancy and numerical skills in users of contraceptive methods. Therefore, it is suggested that more attention should be paid to women on proper use of contraceptive devices. It is recommended that future studies be narrower and examine the unintended pregnancy in women who have taken birth control pills using assessment questionnaires for numeracy and health literacy.

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Contribution

Study design: HS, NH, ZM, MSHS
Data collection and analysis: NH, ZM, HS
Manuscript preparation: NH, HS, ZM

Conflict of Interest

"The authors declare that they have no competing interests."

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