Health literacy and related factors in postpartum women in Farsan, Iran

BSTRACT

Background and Objectives: Health literacy provides us not only with motivation and knowledge, but also with the opportunity to seek, comprehend, assess, and apply information for making right decision in critical situations. Pregnancy and postpartum are considered to be unique and significant periods in a woman's life. Health literacy and its determinants can play an important role in protecting and improving the health of women. The aim of this study was to assess health literacy and its associated factors among postpartum women referring to Farsan comprehensive health centers.

Materials and Methods: This descriptive–analytical study was conducted on 300 postpartum women referring to Farsan comprehensive health centers in 2021. Quota-convenience Sampling was used to select the participants. Data were collected by demographic information and Iranian health literacy standard questionnaires. Descriptive statistics, Independent t-test and Pearson correlation test, kruskal-wallis and Mann-whitney tests were used to analyze the data.

Results: The total mean score of health literacy was 61.62±17.02. Among the dimensions of health literacy, the highest score belonged to understanding, followed by reading, accessibility, evaluation and decision making. 63 (21%) of the participants had inadequate health literacy, 96 (32%) had not quite adequate, 128 (42.7%) had adequate, and 13 (34.3%) had high health literacy. Health literacy was significantly correlated with age (r=0.342, p<0.001), education (X2= 17.734, p<.001), occupational status (t=-2.843, p=.005) and spouse' age (r=.264, p<.001).

Conclusions: Health literacy score in more than half of women in our study was inadequate, especially in the young women with young husbands, low education level and housewives. The dimensions of evaluation and decision-making should be given more attention and effective interventions should be designed in this regard.

Paper Type: Research Article

Keywords: Health Literacy, Consumer Health Information, women, postpartum, Iran

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Introduction

Health literacy includes competencies of accessing, understanding, appraising and using information and services in order to judge and make informed health related decisions and actions (1). There are various classifications of the skills necessary for health literacy. Functional health literacy is a basic skill for obtaining health literacy information, such as health risks and methods of using health services and the ability of using this knowledge. Interactive health literacy, by contrast, encompasses more advanced individual skills. These skills help people gain information through various interpersonal communication and sources, such as mass media, and finally produce new information and use them in different conditions. These skills provide people with independency and self-confidence in interacting with health providers. Critical health literacy includes high-level cognitive skills and social skills for the analysis and use of vital information to control events and life conditions (2).

Some studies have shown significant relationship between health literacy and healthy behavior in adults, and believe that a complete understanding, deep comprehension and effective use of health literacy can contribute to our appropriate decisions (3). Insufficient health literacy, by contrast, limits one's access, comprehension, evaluation and utilization of information (4), thereby leading to more expenses and difficulties in understanding health information. Sometimes people cannot explain their condition to health providers that is due to the fact that they have an inadequate knowledge of their diseases, are under stress, and most probably have poor self-care (5, 6, 7,). Pregnant women with limited health literacy properly may not follow health recommendations or messages (8). Inadequate health literacy in pregnant women may lead to improper pregnancy planning, irregular use of acid folic, no appointment pre pregnancy and no demand for prenatal care. Poor health literacy and socio-economic factors may lower one's realization of medicine instruction and prevent them from following it, thereby reducing the optimal effects of drugs, especially with regard to chronic diseases (9). Increased health literacy can help improve the understanding and use of health messages, promote healthy behaviors, identify pregnancy problems, prepare women for childbirth and care of their baby, and lead to improve pregnancy outcomes (10).

A study on Turkish pregnant women showed that the heath literacy level of participants was sufficient, and education, intended pregnancy, and perception of pregnancy were related to their health literacy level (11). Taheri conducted a survey on pregnant women referring to health centers in Tehran and found that 48.9% of participants had limited health literacy (12). A systematic review however reported different results in terms of health literacy of pregnant women (13)

The assessment of Afghanistanian pregnant women showed that they had an insufficient health literacy that was related to education, age, number of pregnancies, number of antenatal cares and time of starting prenatal care (14). A survey of Indian postpartum mothers also showed that mental health literacy was sufficient only in half of the mothers and it was related to the age, income and employment status of the participants (15). Another study on the health literacy of Turkish pregnant mothers in antenatal care showed that 33.9% of them had sufficient health literacy. The study found that among the Turkish pregnant mothers in antenatal care who had sufficient health literacy (33.9%), those who

were nulliparous, married, young (aged 19 and under), had regular reading habits, participated in health care activities, and received postpartum care in family health clinics had higher levels of health literacy (16).

It appears that the health literacy of postpartum women plays a crucial role in achieving quality care and preventing unwanted complications during pregnancy and postpartum. However, inconsistent results have been obtained by the studies conducted in this field. Therefore, in order to design and implement effective interventions that improve health literacy, promote community health, and reduce health inequalities, it is essential to identify populations at risk and prioritize target groups. Given the limited resources, it is also necessary to prioritize the needs of vulnerable populations. Determining the health literacy level and identifying the factors related to health literacy among pregnant women can be helpful in designing interventions that lead to improved health literacy and better pregnancy outcomes. Thus, the aim of this study was to assess health literacy and its associated factors among postpartum women referring to Farsan comprehensive health centers.

Materials and Methods

This cross-sectional, descriptive–analytical study was conducted on women who were referred to Farsan health centers for their third postpartum visit (30-42 days after delivery) in 2020-2021. The sample size was calculated to be 300 subjects by $\alpha = 0.05$, $z=1.96$ and $d=0.1s$.($n = \frac{z^2 s^2}{d^2}$)

The sampling for this research was conducted by using quota-convenience method. Quotas were allocated to each of the sixteen urban and rural health centers based on the number of postpartum women in these centers. Convenience sampling was used to select participants in each center until the desired quota was reached. The samples consisted of 300 women who met the inclusion criteria, which included being interested in participating in the study, having a minimum level of literacy in reading and writing, having good visual and auditory health, having no psychological disorders, and giving consent to participate in the survey. The exclusion criterion was incomplete responses to the research questionnaires. The study tools consisted of two questionnaires: the Individual Information Questionnaire, which collected data on age, education, job, spouse's job, spouse's education, spouse's age, residence, gravida, history of abortion, number of deliveries and children, and the Iranian Health Literacy questionnaire with five domains of access (6 questions), reading (4 questions), understanding (7 questions), evaluation (3 questions) and decision making (13 questions). Each item was scored using a 5-point Likert scale, and the range of scores was between 33 and 165. The validity and reliability of the questionnaire have been investigated and confirmed by exploratory factor analysis and internal consistency (Cronbach's alpha coefficients ranging from 0.72 to 0.89). health literacy scores between 0-50, 50.1-66, 66.1-84, 84.1-100, are classified as inadequate, Not quite adequate, adequate and high, respectively (17). Statistical analysis was performed at both descriptive and inferential levels. Mean and standard deviation were used for descriptive analysis, while independent t-tests, Pearson and Spearman correlation tests, Kruskal-Wallis, and Mann-Whitney tests were used for inferential analysis. The tests were performed using SPSS software version 19, and a significance level of $P<0.05$ was considered.

Results

The mean age of participants was 29.37±5.9 years, and the majority of them had a diploma

(55.3%), were housewives (89%), and resided in urban areas (77%). The mean age of their spouses was 34.38±5.36 years, and most of them were workers (45.7%) with a diploma (67.7%) (Table 1).

The range of Gravida was 1-9 and the mean number of pregnancies was 1.99±0.99. The mean number of deliveries was 1.93±0.87, and most of the participants had no history of abortion and had two children (Table 1).

Table 1. Frequency distribution of individual and reproductive characteristics in the participants

variables	category	Frequency	percent	Mean	SD
Women' age	<20	23	7.7	29.37	5.94
	21-25	60	20.0		
	26-30	82	27.3		
	31-35	78	26.0		
	>35	57	19.0		
Education	Under diploma	10	3.3	---	---
	diploma	166	55.3		
	academic	124	41.3		
Occupational status	House wife	267	89.0	---	---
	employee	33	11.0		
Residence	Urban area	231	77.0	---	---
	Rural area	69	23.0		
Spouse' age	<30	71	23.7	34.38	5.36
	31-40	191	63.7		
	41-50	38	12.7		
Spouse' job	unemployed	7	2.3	---	---
	employee	42	14.0		
	nongovernmental	114	38.0		
	worker	137	45.7		
Spouse' education	Under diploma	8	2.7	---	---
	diploma	203	67.7		
	academic	89	29.7		
Gravida				minimum	maximum
	1	105	35.0	1	9
	2	117	39.0		
	>2	78	26.0		
number of delivery	1	107	35.7	1	5
	2	124	41.3		
	>2	69	23.0		
History of abortion	yes	279	93.0	0	4
	No	21	7.0		
number of children	1	108	36.0	1	5
	2	122	40.7		
	>2	70	23.3		

The mean health literacy score was 61.62±17.02, with the highest mean score in the understanding domain (66.97 ± 21.26) and the lowest mean score in the decision-making domain (58.34 ± 17.87) (Table 2). The health literacy scores showed that 53% of the participants had inadequate or not quite adequate health literacy, while 47% had adequate or high health literacy (Table 3). The health literacy of the participants was significantly correlated with their age (r=0.342, p<0.001), education (X2=17.734, p<0.001), occupational status (t=-2.843, p=.005) and spouse' age (r=0.264, p<0.001).

Table 2. Descriptive statistics of health literacy domains in participants

variable	number	minimum	maximum	Mean	SD
Health literacy	300	14.30	93.90	61.62	17.02
Accessibility	300	8.40	100.00	61.76	20.08
Reading	300	6.25	100.00	64.57	21.01
Understanding	300	10.70	100.00	66.97	21.26
Evaluation	300	6.25	100.00	61.20	20.95
Dcision making	300	18.75	93.70	58.34	17.87

Table 3. Frequency distribution of health literacy scores categories in participants

Variable	Category	Number	Percent
Health literacy	Inadequate	63	21.0
	Not quite adequate	96	32.0
	Adequate	128	42.7
	High	13	4.3
	Total	300	100.0

The results also showed that all domains of health literacy including accessibility, reading, understanding, evaluation and decision making had a significant correlation with the age of the participants (p<0.001). The dimensions of understanding (X2=13.514, p=.001), decision-making (X2=7.338, p=.026) and accessibility (X2=6.654, p=.036) were significantly related to education. All aspects of health literacy, except reading (t=-1.870, p=.062), had a significant correlation with occupational status. There was no significant correlation between spouse's job (X2=1.876, p=.598), spouse's education (X2=1.199, p=.549), residence (t=.046, p=.941), gravida (r=.005, p=.931), history of abortion (z=-.762, p=.446), number of deliveries (r=.013, p=.822) number of children (r=.011, p=.849) and health literacy score. However, there was a direct and significant correlation between the reading score and the number of deliveries (r = 0.114, p = 0.049) and children (r = 0.115, p = 0.047) (Table 4).

Discussion

This study determined health literacy and its domains in postpartum women referring to comprehensive health service centers. Other studies have investigated health literacy among different populations of women. For example, a study on women aged 18 to 35 years in Balochistan showed that 17.3% of participants had low health literacy, 30.6% had inadequate health literacy, 35.5% had adequate health literacy, and 16.7% had excellent health literacy (18). Another study by Taheri investigated health literacy and its

Table 4. correlation between health literacy and domains and demographic, reproductive characteristics in participants

Variable/ type of test	Accessibility	Reading	Understanding	Evaluation	Decision making	Health literacy
Age/ Pearson correlation	r=.219 (p<.001)	r=.334 (p<.001)	r=.369 (p<.001)	r=.342 (p<.001)	r=.239 (p<.001)	r=.342 (p<.001)
Education/ kruskal-wallis	X2=6.654 (p=.036)	X2=5.570 (p=.062)	X2=13.514 (p=.001)	X2=4.742 (p=.093)	X2=7.338 (p=.026)	X2=17.734 (p<.001)
Occupational status/ Independent t	t=-2.191 (p=.029)	t=-1.870 (p=.062)	t=-2.209 (p=.028)	t=-2.316 (p=.021)	t=-2.218 (p=.027)	t=-2.843 (p=.005)
Residence/ Independent t	t=.063 (p=.950)	t=.658 (p=.512)	t=.659 (p=.510)	t=.060 (p=.952)	t=.926 (p=.356)	t=.046 (p=.941)
Spouse' age/ Pearson correlation	r=.127 (p=.027)	r=.261 (p<.001)	r=.279 (p<.001)	r=.275 (p<.001)	r=.181 (p<.001)	r=.264 (p<.001)
Spouse' job/ kruskal-wallis	X2=3.086 (p=.378)	X2=2.425 (p=.489)	X2=1.281 (p=.734)	X2=.370 (p=.946)	X2=1.396 (p=.706)	X2=1.876 (p=.598)
Spouse' education/ kruskal-wallis	X2=.401 (p=.818)	X2=493 (p=.781)	X2=729 (p=.694)	X2=3.053 (p=.217)	X2=.429 (p=.807)	X2=1.199 (p=.549)
Gravida/ spearman correlation	r=.016 (p=.783)	r=.113 (p=.050)	r=.076 (p=.189)	r=.091 (p=.117)	r=.040 (p=.490)	r=.005 (p=.931)
Number of delivery/ spearman correlation	r=.038 (p=.510)	r=.114 (p=.049)	r=.077 (p=.181)	r=.111 (p=.055)	r=.053 (p=.356)	r=.013 (p=.822)
History of abortion/ Mann-whitney	z=-.242 (p=.809)	z=-1.174 (p=.240)	z=-.123 (p=.902)	z=.098 (p=.922)	z=.358 (p=.720)	z=-.762 (p=.446)
Number of children/ spearman correlation	r=.038 (p=.515)	r=.115 (p=.047)	r=.078 (p=.177)	r=.112 (p=.053)	r=.050 (p=.390)	r=.011 (p=.849)

determinants among pregnant women referring to Tehran health centers, and found that the mean health literacy score was 63.14 ± 9.63, and 48.9% of participants had limited health literacy (12). Study of Valero on breastfeeding women showed that 47.8% of participants had limited health literacy (19). In another study, 63.7% of women referring to Mashhad health centers had adequate health literacy (20). Finally, Yee's study found that 17.5% of pregnant women had inadequate health literacy (21). The results of various studies show that the health literacy of reproductive-age women, as well as pregnant and lactating women, varies and can be influenced by demographic and social differences in societies. Our study found a positive and significant correlation between participants' age and health literacy, which has been reported in a number of other studies (12, 22, 23,). However, other studies have found a negative correlation between age and health literacy (24, 25, 26, 27).

This Study found a significant relationship between accessibility, understanding, decision making and education domains of the study. The relationship was only significant when comparing women with a college education to those with a diploma or lower levels of education. However, no significant relationship was observed between health literacy and education when

comparing women with a diploma to those with less than a diploma. Some studies have found a significant relationship between education and health literacy, while others have not found a significant relationship (12, 22, 23, 26, 28).

This study found that the mean score of health literacy and its domains, except for reading, had a significant relationship with job status between employee and housewife women, where employee women had higher health literacy scores compared to housewives. The relationship between job status and health literacy has been investigated in several studies, and the results have been mixed. Some studies have confirmed a significant relationship between job status and health literacy, while others have not found a significant relationship (12, 20, 25, 29, 30, 31). The mean score of health literacy and domains had no significant relationship with the participants' residence in this study. The results of other studies were contradictory in this regard (29, 32). A positive and significant relationship was observed between spouse' age and health literacy ($p<0.001$). However, the results of another study were opposite to our findings (31). Here was no significant relationship between health literacy and its domains and the spouse's job in this study, but the results of other studies have been different (26, 33). Similarly, there was no significant relationship between health literacy and its domains and the spouse's education in this study. However, the results of Safaie and Khorasani studies indicated a significant relationship between health literacy and its factors and the spouse's education (26, 33). In Pirdehghan's study, the health literacy of women with less education, those living in rural areas, housewives and elderly women was not satisfactory (34). In an assessment of health literacy among nulliparous pregnant women in the United States, it was found that individuals with insufficient health literacy were younger women with lower levels of education and from less represented racial groups (21).

There was no significant relationship between health literacy and its domains and gravida in this study. This finding is consistent with Masoumi's study, which also found an inverse relationship between health literacy and gravida, and Masoudiyekta's study, which found no significant relationship between health literacy and gravida (29, 30). There was no significant relationship between health literacy and it domains and number of deliveries and children, except in reading domain. The results of some studies have shown a significant relationship between these factors, while in others, there was no significant relationship (12, 32, 35). There was no significant relationship between health literacy and history of abortion in this study, which is in line with another study (30). The observed differences or similarities in the numerous studies investigating health literacy in various societies and age groups may be due to differences in sample size, demographic characteristics, data collection tools, and the social, cultural, and economic development of societies.

Pregnant women face challenges in accessing and evaluating information from various sources, including complex digital systems, health care providers, social media, and families, which highlights the importance of sufficient health literacy for this population (36) However, controlled interventions and trials aimed at improving the health literacy of pregnant women are rare, and most interventions have focused on measuring knowledge and have shown improvement. However, the impact of interventions on the results of other outcomes, including health behaviors, fetal outcomes, and the use of health services, has been contradictory (37). Therefore, in order to plan

effective interventions with limited resources, it is necessary to prioritize vulnerable groups and their needs according to the level of health literacy, the specific aspects of health literacy that require intervention, and related demographic and reproductive variables.

Limitations: one limitation of this study was the concurrent working hours of health centers with the working hours of working and student women, which limited our access to these groups Another limitation was the lack of access to the private sector, which may have affected the generalizability of our findings. Additionally, this study was conducted during the COVID-19 pandemic, which may have influenced women from all social classes to avoid attending public centers due to fear of infection.

Conclusion

In conclusion, more than 50% of the women in this study had inadequate or borderline health literacy scores. Therefore, it is essential to pay more attention to young women, women with young husbands, those with low education and housewives. The lowest scores in health literacy were related to the dimensions of evaluation and decision making, indicating a need to focus on improving women's health literacy in these areas. Conducting further studies with the participation of women receiving pregnancy and postpartum care services in the private sector, working women, and students who attend midwives' and obstetricians' offices during evening shifts can provide more insight into the factors related to health literacy and strengthen the foundation of future interventions planned based on these factors.

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