Health Literacy and Health Perception of Pregnant Women in the Southeast Region of Türkiye: A Cross-Sectional Study

ABSTRACT

Background and Objectives: This study was conducted to evaluate the relationship between health literacy level and health perception in third-trimester pregnant women and to determine the effect of health literacy on health perception.

Materials and Methods: This descriptive and cross-sectional study was conducted in 2024 at Mardin Training and Research Hospital in Türkiye. Without selecting a sample, 201 third-trimester pregnant women who applied to obstetrics and gynecology units during the specified period were included in the study. The Personal Information Form, European Health Literacy Scale, and Health Perception Scale were used as data collection tools. Data were collected through face-to-face interviews and analyzed using nonparametric tests. İncluding the Mann–Whitney U test and Kruskal–Wallis test.

Results: 29.3% of the participants had inadequate, 46.2% had problematic, 23.3% had adequate, and only 0.9% had excellent health literacy. There was a significant correlation between health literacy and variables such as education level ($p < 0.001$), economic status ($p = 0.002$), housing type ($p = 0.018$), and reading frequency ($p = 0.005$). Health perception was generally found to be at a good level and showed significant associations with age at marriage ($p = 0.014$), economic status ($p = 0.007$), smoking ($p = 0.036$), and regular medication use ($p = 0.011$). However, no statistically significant correlation was found between health literacy and health perception ($p = 0.412$).

Conclusion: The study revealed that most pregnant women had inadequate or problematic health literacy levels, whereas their health perceptions were generally positive. Although both variables were influenced by various demographic and behavioural factors, no statistically significant relationship was found between health literacy and health perception. Reveals the importance of interventions to increase health literacy, especially in pregnant women.

Paper Type: Research Article

Keywords: Health Literacy, Pregnancy, Health Perception.

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Introduction

Health literacy is defined as the ability to understand and evaluate one's health, the health of one's family and community, and to understand which factors affect this and to know how to cope with them (1). Research conducted on a global scale indicates that health literacy skills remain below the desired level in many societies. A study covering European Union countries reported that 33% of individuals have inadequate health literacy (2). Comparative studies conducted in OECD countries in 2008 and 2017 found that online health information search behaviour has become widespread; however, at least one-third of the population still has low health literacy. (3).

The results of the ' Health Literacy and Related Factors Survey' conducted by the Ministry of Health in 2023 indicate that 21.0% of the population has inadequate health literacy, 32.9% has problematic-limited health literacy, 34.4% has adequate health literacy, and 11.7% has excellent health literacy. The Southeastern Anatolia Region, which includes Mardin, is among the regions with the lowest levels of health literacy. (4). Individuals who possess a sufficient level of health literacy are capable of assuming responsibility for their health, as well as the health of their families and society (1). These individuals utilise health services more effectively, use preventive health services more, and experience more positive health outcomes (5). It has been demonstrated that health literacy levels affect not only women's health, but also that of their children before pregnancy, during pregnancy, and in the postnatal period (6). A correlation has been demonstrated between low health literacy and several adverse outcomes, including the omission of pre-pregnancy counselling, delayed initiation of antenatal care, delayed health check-ups, and inadequate health behaviours. This may result in adverse obstetric outcomes and postnatal complications (6). Women must comprehend and utilise health information during this period, given the physical and psychological challenges associated with pregnancy.

Literature has demonstrated that levels of health literacy in pregnant women range from 15% to 44%, with low levels being prevalent (7). Research has indicated that mothers with high health literacy have been found to give birth to fewer premature and low birth weight babies, experience lower neonatal mortality rates, and higher breastfeeding rates (8, 9, 10). However, research examining the direct impact of health literacy on health perception is limited.

The health perception of women during pregnancy is influenced by a number of factors, including socio-economic status, cultural beliefs, psychological preparation, and personal experiences (11-15).

Health perception is defined as the combination of an individual's feelings, thoughts, expectations, and prejudices about their health, and is a subjective indicator reflecting both physical and mental health (16, 17).

All of these factors determine how women utilise health services and how they evaluate their health status. Increasing health perception is directly related to health literacy (15). The level of health literacy is directly related to access to health services during pregnancy, understanding of

information, and the efficiency of decision-making processes. Furthermore, it has been demonstrated that pregnant women who possess high health literacy demonstrate more positive health perceptions (17). Therefore, it is important to reveal the mutual relationship between these two variables in pregnant women, to develop strategies to ensure more effective utilisation of health services. Despite the extant literature on health literacy and health perception in different groups in Türkiye (16, 6, 18- 21), there is a lack of research on the specific relationship between health perception and health literacy in pregnant women (17, 22, 23, 24). This creates a significant research gap in understanding the specific health literacy needs of pregnant women and how these needs come together with their health perceptions. In this context, it is necessary to examine this relationship in detail in order to improve the quality of communication between health professionals and pregnant women and to strengthen individual awareness.

The present study aims to evaluate the relationship between health literacy and health perception in pregnant women and to determine the effect of health literacy on health perception.

Materials and Methods

Study Design and Participants

This descriptive and cross-sectional study was conducted in two public hospitals - Mardin Training and Research Hospital and Kızıltepe State Hospital - in Mardin province, located in southeastern Türkiye, in 2024.

Data collection took place between April 1 and May 1, 2024, in obstetrics outpatient clinics, non-stress test (NST) units, and pregnancy school units of these hospitals.

The target population consisted of pregnant women in their third trimester who visited these clinics and units during the specified period. The study specifically included primiparous pregnant women in the last trimester. A total of 201 women who met the criteria were included in the study. No formal sample size calculation was performed; all eligible participants during the one-month month were included using a convenience sampling approach.

Research Question:

• What is the level of health literacy among the participants?

Hypotheses:

• There is a relationship between demographic variables and health literacy.

• There is a relationship between health literacy and health perception.

• There is a relationship between demographic variables and health perception.

Inclusion criteria:

• Pregnant women in their third trimester

• Primiparous (first-time pregnant) women

Exclusion criteria:

• Non-pregnant women

• Multiparous pregnant women

• Pregnant women in their first or second trimester

Sampling

A convenience sampling method was used in the study. Two centres were determined within the scope of the study: Mardin Training and Research Hospital and Kızıltepe State Hospital. Gynaecology outpatient clinics, NST (Non-Stress Test) units, and

pregnancy school units of these hospitals were selected as data collection areas.

Data were collected from primiparous pregnant women in the third trimester who applied to these centres between the specified dates. All eligible individuals who met the inclusion criteria were invited to the study between 1 April and 1 May 2024, and a total of 201 participants were reached. The sample size was determined by this method, which aims to reach the population within the specified period and is based on a non-probability sampling approach. In this way, an attempt was made to maximise the representativeness of the target group.

During the data collection process, face-to-face communication was established with the appropriate participants, the purpose of the research was explained, and a written consent form was obtained from each volunteer. The questionnaire was administered by the researchers using a face-to-face interview method. Questions were asked verbally, and participants' responses were recorded directly by the researchers.

Instruments: Data were collected using three tools: a Personal Information Form, the Turkish version of the European Health Literacy Survey Questionnaire (EHLS-TR), and the Health Perception Scale (HPS).

The Personal Information Form

Was developed by the researchers, demographic information such as age, gender, marital status, family type, educational status, economic status, occupation, and information about the disease status that requires regular medication use, where they get health information mostly, the health institution they first apply to in case of need, smoking status, alcohol use status and information about this pregnancy were questioned.

European Health Literacy Scale (EHSS-TR)

It is an adapted version of the European Health Literacy Survey Questionnaire for the Turkish population. The scale was developed by the European Health Literacy Research Consortium (HLS EU, 2012). The scale, whose Turkish validity and reliability study was conducted by Abacıgil et al (25). It is a self-report scale developed to assess health literacy in people over the age of 15. The conceptual framework includes three dimensions related to health (treatment, disease prevention, and health promotion) and information acquisition processes related to health decision-making and practices (accessing, understanding, decision-making, and implementation). The conceptual framework of the 47-item scale consists of 12 dimensions. Each item has a 4-point scale where 1=Very difficult, 2=Difficult, 3=Easy, 4=Very easy. The code 5 was used for the expression "I don't know". The total score that can be obtained from the scale is between 47 and 188. For ease of calculation, the total score was standardized to take a value between 0 and 50. The level of health literacy was evaluated in four categories according to the score obtained: (0-25): inadequate health literacy, (>25-33): problematic-limited health literacy, (>33-42): adequate health literacy, (>42-50): excellent health literacy. In the Turkish validity and reliability study of the scale, Cronbach's alpha value was 0.95, 0.86, 0.87, 0.87, and 0.91 for general health, HLS, treatment and service, disease prevention, and health promotion, respectively.

Health Perception Scale (HPS)

There are 15 items and 4 sub-dimensions (center of control, self-awareness, certainty, and importance of health) in the HPS developed by Diamond et al. (26) in 2007, and the validity and reliability study was conducted by Kadıoğlu and Yıldız (27).in Türkiye. The scale is a five-point Likert-type scale. Items 1, 5, 9, 10, 11, 11, and 14 of the scale are positive; items 2, 3, 4, 6, 7, 8, 12, 13 and 15 are negative statements. A minimum of 15 points and a maximum of 75 points can be obtained from the scale. In Kadıoğlu and Yıldız's study, Cronbach's Alpha values according to the subgroups of the scale were: center of control, 0.90; self-awareness, 0.91; certainty, 0.91; importance of health, 0.82.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25.0. Descriptive statistics (frequency, percentage, mean, median, and standard deviation) were used to summarize the data. The normality of the data was tested using both the Kolmogorov–Smirnov and Shapiro–Wilk tests. The results indicated that the scores obtained from the health literacy and health perception scales did not follow a normal distribution ($p < 0.05$). Therefore, non-parametric tests were used for further analysis. For intergroup comparisons, the Mann–Whitney U test was used for two-group comparisons, and the Kruskal–Wallis test was used for comparisons among more than two groups. In cases of significant differences, post-hoc analyses were conducted to determine between which groups the differences existed. Spearman's rank correlation analysis was used to evaluate relationships between variables. In order to determine predictors of health perception and health literacy, multiple linear regression analysis was applied after appropriate data transformations were made to meet model assumptions. A significance level of $p < 0.05$ was considered statistically significant.

Results

55.2% of the participants were between 26 and 35 years of age, 78.1% lived in a nuclear family, 35.8% were high school graduates, 30.8% were university graduates and above, and 43% of the spouses were university graduates and above. Regarding employment status, 56.2 per cent of the participants were not working, and 49.3 per cent of them stated their status as 'medium'. 56.7 per cent of the participants had lived in the city until the age of 12, and 67.7 per cent had lived in an apartment. 58.2% of the participants stated that they received health information from the radio/television. 59.7% of the participants rated their health status as 'good', 34.3% smoked, and 93.5% did not drink alcohol. The rate of those who applied to a health institution at least once a month was 53.7%, and the rate of those who preferred the public hospital as the first place of application was 61.7% (Table 1).

While 57.7% of pregnant women terminated their previous pregnancies with normal delivery, 17.9% were experiencing their first pregnancy. 44.3% of pregnant women had three or more pregnancies, and 74.1% stated that their pregnancies were planned. Among 128 women with a history of miscarriage, 19.9% had had one miscarriage and 5.0% had had three miscarriages. While the health literacy scores of the pregnant women who participated in the study decreased with increasing age ($p<0.001$), the

scores increased with increasing educational level. University and above graduates had the highest health literacy scores, while primary school graduates had the lowest score ($p<0.001$).

Table 1. Socio-demographic Characteristics

Socio-demographic Characteristics		Number	%
Age	18-25 Years	43	21.4
	26-35 Years	111	55.2
	Over 35 years old	47	23.4
Age at Marriage	18 Years and Under	25	12.4
	Over 18 years old	176	87.6
Duration of marriage	1- 10 Years	144	71.6
	11-20 Years	48	23.9
	Over 20 Years	9	4.5
Family Type	Nuclear Family	157	78.1
	Extended Family	44	21.9
Education Status	Primary school graduate	33	16.4
	Secondary school graduate	34	16.9
	High school graduate	72	35.8
	University and	62	30.8
Spouse Education Status	Primary school graduate	16	8.0
	Secondary school graduate	25	12.4
	High school graduate	73	36.3
	University and above	87	43.3
Mother's Education Status	Primary school graduate	74	36.8
	Secondary school graduate	67	33.3
	High school graduate	40	19.9
	University graduate	20	10.0
Father's Education Status	Primary school graduate	38	18.9
	Secondary school graduate	63	31.3
	High school graduate	61	30.3
	University and above	39	19.4
Employment Status	Yes	88	43.8
	No.	113	56.2
Social Security	No	23	11.4
	Social Security Institution	135	67.2
	Green Card	42	21.4
Economic Situation	Very good	13	6.5
	Good	71	35.3
	Middle	99	49.3
	Bad	18	9.0
Where he lived until he was 12 years old	Rural	87	43.3
	City	114	56.7
Housing Type	Slum	65	32.3
	Apartment Floor	136	67.7

Socio-demographic Characteristics		Number	%
Place of Receipt of Health Information	Health worker	78	38.8
	Radio/Television	117	58.2
	Printed press	3	1.5
	Family members	3	1.5
Health Status According to Himself	Very good	16	8.0
	Good.	120	59.7
	Middle	64	31.8
	Bad	1	0.5
Disease Requiring Regular Medication	Yes	25	12.4
	No.	176	87.6
Book Reading Frequency	I never read	75	37.3
	Occasionally	95	47.3
	Frequently	31	15.4
Vision Problem	Yes	22	10.9
	No.	179	89.1
Hearing Problem	Yes	6	3.0
	No.	195	97.0
Average Number of Monthly Applications to a Health Institution for Any Health Problem (Disease, Vaccination, Test, Prescription Printing, etc.)	One time	108	53.7
	Twice	77	38.3
	Three times	12	6.0
	Four times or more	4	2.0
The first health institution you contact in case of a health problem/illness	Family health center	70	34.8
	State hospital	124	61.7
	Private hospital	7	3.5
Smoking Status	Yes, I drink	69	34.3
	I quit	56	27.9
	I never drank	76	37.8
Alcohol Use Status	Yes	13	6.5
	No.	188	93.5
Total		201	100

Health literacy scores of working pregnant women were higher than those of non-working pregnant women ($p<0.001$), and health literacy scores of pregnant women living in extended families were lower than those living in nuclear families ($p=0.045$). Pregnant women with "good" economic status had the highest score, while those with "moderate" and "poor" economic status had significantly lower scores ($p<0.001$). Pregnant women who grew up in urban areas had higher health literacy scores than those who grew up in rural areas ($p<0.001$). Similarly, those living in apartments had higher health literacy scores than those living in slum-type houses ($p<0.001$). Pregnant women who never read books had the lowest health literacy score, while those who read books frequently had the highest score ($p<0.001$). In the study, individuals with hearing problems had higher health literacy scores ($p=0.042$). However, variables such as health information sources, smoking, and frequency of visits to health institutions did not make a

significant difference in health literacy (Table 2).

It was found that the health perception scores of pregnant women aged 26-35 years were higher than those of other age groups (p=0.004). It was found that the health perception scores of pregnant women who married at an early age were significantly lower than those who married after the age of 18 (p=0.007). Pregnant women with very good economic status had lower health perception scores, while those with good and medium economic status had higher health perception scores (p=0.004). It was found that the health perception scores of pregnant women who required regular medication were significantly lower than those of pregnant women without any chronic disease (p=0.016). It was determined that the health perception scores of pregnant women who smoked were lower than those of pregnant women who had never smoked, and this difference was statistically significant (p<0.001). No significant relationship was found between alcohol use and health perception (p=0.294) (Table 3).

The mean total score of the European Health Literacy Scale was 27.85 ± 19.6, and the internal consistency of the scale was quite high (α = 0.88). The study revealed that 'Use of Health Information in Treatment Services' received the highest mean score, while 'Use of Health Information in Disease Prevention' received the lowest mean score. According to health literacy levels, 29.3% of the participants exhibited inadequate health literacy, 46.2% demonstrated problematic health literacy, 23.3% displayed adequate health literacy, and 0.9% exhibited excellent health literacy. The mean total score of the Health Perception Scale (HPS) was 47, with the highest mean being obtained in the 'Control Centre' dimension and the lowest mean being obtained in the 'Self Awareness' dimension (Table 4).

The findings indicated the presence of strong and statistically significant positive correlations between age, duration of marriage, number of births, and number of living children. Particularly, significant negative correlations were found between the European Health Literacy Scale (EHLS) total score and these demographic factors (p≤0.004), indicating that as the age and related demographic characteristics of pregnant women increase, their health literacy levels decrease. While the total score of the Health Perception Scale did not have a significant relationship with demographic characteristics in general, some sub-dimensions, such as Self-Awareness and Importance of Health, showed weak but positive and significant relationships with age. There was no statistically significant correlation between the total score of the European Health Literacy Scale and the total score of the Health Perception Scale (r=0.071, p=0.316) (Table 5). An automatic linear regression model was applied to determine the factors affecting the change in the European health literacy score. Accordingly, the variables "age, age at marriage, spouse's education level, father's education level, how do you evaluate your economic situation, do you have a disease that requires regular medication, do you smoke, European health literacy, treatment services, disease prevention, health promotion" explained 24.5% of the change in the health literacy score (r=0.245) (Table 6).

Table 2. Sociodemographic characteristics and health literacy scores

Socio-demographic Characteristics		n	%	Median [Min-Max]	Mean ± SD	U/X	P- value	Post hoc
Age	18-25 Years	43	21.4	31.2 (0-39)	29.6 (± 7.2)	17.391	<0.001	3<1,2
	26-35 Years	111	55.2	30.4 (4.96-44.6)	28.7 (± 7.8)			
	Over 35 years old	47	23.4	25.8 (4.6-44.3)	24.12 (± 8.1)			
Age at Marriage	18 Years and Under	25	12.4	29.7 (4.9-36.8)	25.9 (± 9)	1997.5	0.458	
	Over 18 years old	176	87.6	29.9 (0-44.6)	28.1 (± 7.8)			
Duration of marriage	1- 10 Years	144	71.6	31 (0-44.3)	29.3 (± 7.3)	21.545	<0.001	2,3<1
	11-20 Years	48	23.9	26.7 (6-44.6)	24.9 (± 8.4)			
	Over 20 Years	9	4.5	19.8 (4.6-30.4)	20 (± 7.5)			
Family Type	Nuclear Family	157	78.1	30.4 (0-44.6)	28.5 (± 7.5)	4139.0	0.045	
	Extended Family	44	21.9	26.5 (4.9-40.4)	25.3 (± 9)			
Education Status	Primary school graduate	33	16.4	19.1 (6-40.4)	19.4 (± 7.8)	51.330	<0.001	1<2,3,4;3<4
	Secondary school graduate	34	16.9	30.3 (4.9-44.3)	27.4 (± 9.5)			
	High school graduate	72	35.8	29 (4.6-40)	28.3 (± 5.7)			
	University and above	62	30.8	32.26 (0-44.6)	31.9 (± 5.8)			
Spouse Education Status	Primary school graduate	16	8.0	19.3 (6-27.6)	17.4 (± 6.5)	37.821	<0.001	1<2,3,4;2<4
	Secondary school graduate	25	12.4	26.9 (9.2-36.8)	25 (± 7.1)			
	High school graduate	73	36.3	29.4 (4.6-44.3)	28 (± 7.8)			
	University and above	87	43.3	31.5 (0-44.6)	30.3 (± 6.8)			
Mother's Education Status	Primary school graduate	74	36.8	26.5 (4.9-40.4)	24.6 (± 8.7)	22.276	<0.001	1<3,4
	Secondary school graduate	67	33.3	30.4 (4.6-39.7)	28.9 (± 6.2)			
	High school graduate	40	19.9	31.2 (15.6-44.3)	29.7 (± 6.8)			
	University graduate	20	10.0	33.3 (0-44.6)	32.1 (± 8.8)			
Father's Education Status	Primary school graduate	38	18.9	24.1 (6-38.6)	23.9 (± 8.6)	16.829	0.001	1<2,3,4; 2<4
	Secondary school graduate	63	31.3	29.7 (4.9-44.3)	28.1 (± 6.7)			

Socio-demographic Characteristics		n	%	Median [Min-Max]	Mean ± SD	U/X	P- value	Post hoc
Employment Status	High school graduate	61	30.3	30.4 (4.6-40.4)	28 (± 7.9)	3575.5	<0.001	
	University and above	39	19.4	32.6 (0-44.6)	30.8 (± 8.0)			
	Yes	88	43.8	31.5 (0-44.3)	30 (± 6.7)			
	No.	113	56.2	28.3 (4.6-44.6)	26.1 (± 8.5)			
Social Security	No	23	11.4	21.2 (9.2-40.4)	22.9 (± 8.3)	28.907	<0.001	1,3<2
	Social Security Institution	135	67.2	31.5 (0-44.6)	29.6 (± 7.7)			
	Green Card	42	21.4	26.9 (9.5-35.8)	24.9 (± 6.6)			
Economic Situation	Very good	13	6.5	32.9 (0-38.2)	27.4 (± 11)	31.392	<0.001	3,4<2
	Good.	71	35.3	32.2 (15.6-44.6)	31.5 (± 5.9)			
	Middle	99	49.3	28.7 (4.6-39.3)	26.2 (± 7.8)			
	Bad	18	9.0	21.9 (4.9-32.2)	22.3 (± 7.8)			
Where he lived until he was 12 years old	Rural	87	43.3	27.3 (4.6-40.4)	25 (± 8.5)	3142.5	<0.001	
	City	114	56.7	31.5 (0-44.6)	29.9 (± 6.9)			
Housing Type	Slum	65	32.3	23 (4.6-40.4)	23.1 (± 8.3)	2157.0	<0.001	
	Apartment Floor	136	67.7	31.5 (0-44.6)	30.1 (± 6.7)			
Place of Receipt of Health Information	Health worker	78	38.8	30.6 (0-44.6)	27.3 (± 9)	3.496	0.321	
	Radio/Television	117	58.2	29.7 (4.9-44.3)	28.3 (± 7.3)			
	Printed press	3	1.5	35.1 (20.2-35.1)	30.1 (± 8.5)			
	Family members	3	1.5	23.4 (15.6-26.2)	21.7 (± 5.5)			
Health Status According to Himself	Very good	16	8.0	27.3 (0-40)	25.7 (± 9.9)			
	Good.	120	59.7	31.2 (6-44.6)	29.1 (± 7.5)			
	Middle	64	31.8	28.3 (4.6-44.3)	26 (± 7.9)			
	Bad	1	0.5	20.9 (20.9-20.9)	20.9			
Disease Requiring Regular Medication	Yes	25	12.4	29.7 (4.9-44.3)	27.8 (± 8.6)	2159.0	0.882	
	No.	176	87.6	30.1 (0-44.6)	27.8 (± 7.9)			

Socio-demographic Characteristics		n	%	Median [Min-Max]	Mean ± SD	U/X	P- value	Post hoc
Book Reading Frequency	I never read	75	37.3	23.4 (4.9-40.4)	24 (± 8.8)	26.432	<0.001	1<2,3
	Occasionally	95	47.3	30.4 (0-44.3)	29.7 (± 6.3)			
	Frequently	31	15.4	32.6 (16.3-44.6)	31.3 (± 7)			
Vision Problem	Yes	22	10.9	29.7 (0-44.3)	26.7 (± 11.9)	2001.5	0.901	
	No.	179	89.1	30.1 (4.6-44.6)	27.9 (± 7.4)			
Hearing Problem	Yes	6	3.0	34.9 (21.2-44.3)	34.2 (± 7.8)	871.5	0.042	
	No.	195	97.0	29.7 (0-44.6)	27.6 (± 7.9)			
Average Number of Monthly Applications to a Health Institution for Any Health Problem (Disease, Vaccination, Test, Prescription Printing, etc.)	One time	108	53.7	28.9 (6.3-44.6)	27.8 (± 7.8)	1.526	0.676	
	Twice	77	38.3	30.8 (4.6-40)	28.2 (± 7.8)			
	Three times	12	6.0	31.3 (4.9-37.5)	27.1 (± 9.7)			
	Four times or more	4	2.0	23.9 (0-34)	20.4 (± 16.1)			
The first health institution you contact in case of a health problem/illness	Family health center	70	34.8	30.4 (0-40.4)	28.5 (± 7.2)	3.759	0.153	
	State hospital	124	61.7	29.6 (4.9-44.6)	27.1 (± 8.3)			
	Private hospital	7	3.5	33.6 (17.7-44.3)	32.9 (± 8.1)			
Smoking Status	Yes, I drink	69	34.3	28.7 (4.6-39.7)	27.2 (± 7.2)	2.052	0.358	
	I quit	56	27.9	30.6 (0-39.3)	27.8 (± 8.3)			
	I never drank	76	37.8	30.8 (6.3-44.6)	28.3 (± 8.4)			
Alcohol Use Status	Yes	13	6.5	33.3 (17.7-44.3)	32.5 (± 7.2)	**1733.5**	**0.012**	
	No.	188	93.5	29.6 (0-44.6)	27.5 (± 7.9)			
Total		201	100					

The Mann–Whitney U test was used for two-group comparisons, and the Kruskal–Wallis test for comparisons among more than two groups. U: Mann–Whitney U test; X^2: Chi-square test. Post hoc: Bonferroni correction was applied. A p-value < 0.05 was considered statistically significant

Table 3. Sociodemographic characteristics and health perception scores

Socio-demographic Characteristics		n	%	Median [Min-Max]	Mean ± SD	U/X	P- value	Post hoc
Age	18-25 Years	43	21.4	45 (33-64)	45.8 (± 5.5)	11.118	0.004	2<1
	26-35 Years	111	55.2	49 (32-67)	49.4 (± 7)			
	Over 35 years old	47	23.4	47 (33-66)	47.2 (± 5.5)			
Age at Marriage	18 Years and Under	25	12.4	44 (32-64)	44.8 (± 7)	-2.708	0.007	
	Over 18 years old	176	87.6	48 (33-67)	48.3 (± 6.4)			
Duration of marriage	1- 10 Years	144	71.6	48 (33-67)	48.5 (± 6.7)	2.988	0.225	
	11-20 Years	48	23.9	47 (32-66)	47.5 (± 6.3)			
	Over 20 Years	9	4.5	46 (39-51)	44.7 (± 4.1)			
Family Type	Nuclear Family	157	78.1	47 (32-67)	48.2 (± 6.5)	0.295	0.768	
	Extended Family	44	21.9	47 (33-64)	47.9 (± 6.9)			
Education Status	Primary school graduate	33	16.4	47 (38-66)	48.9 (± 6.8)	6.571	0.087	
	Secondary school graduate	34	16.9	47 (33-64)	47.3 (± 7.2)			
	High school graduate	72	35.8	47 (32-67)	47.2 (± 6.4)			
	University and above	62	30.8	49 (33-64)	49.3 (± 6.1)			
Spouse Education Status	Primary school graduate	16	8.0	50.5 (38-66)	50.6 (± 7.5)	3.339	0.342	3.339
	Secondary school graduate	25	12.4	47 (40-60)	46.8 (± 4.7)			
	High school graduate	73	36.3	48 (32-67)	47.9 (± 7.2)			
	University and above	87	43.3	47 (33-64)	48.2 (± 6.3)			
Mother's Education Status	Primary school graduate	74	36.8	47 (33-66)	47.3 (± 6.1)	7.447	0.059	
	Secondary school graduate	67	33.3	48 (33-63)	47.9 (± 5.3)			
	High school graduate	40	19.9	47.5 (32-67)	48.4 (± 8.1)			
	University graduate	20	10.0	52.5 (33-64)	51.6 (± 7.8)			
Father's Education Status	Primary school graduate	38	18.9	47 (39-66)	47.3 (± 6)	2.928	0.403	2.928
	Secondary school graduate	63	31.3	47 (33-64)	47 (± 5.2)			

Socio-demographic Characteristics		n	%	Median [Min-Max]	Mean ± SD	U/X	P- value	Post hoc
	High school graduate	61	30.3	48 (32-67)	48.8 (± 7.7)			
	University and above	39	19.4	48 (33-64)	49.3 (± 6.9)			
Employment Status	Yes	88	43.8	48 (32-67)	48.1 (± 6.4)	-0.002	0.998	
	No.	113	56.2	47 (33-66)	48.1 (± 6.7)			
Social Security	No	23	11.4	49 (38-66)	49.6 (± 7.1)	1.022	0.60	
	Social Security Institution	135	67.2	47 (32-67)	47.9 (± 6.7)			
	Green Card	42	21.4	47 (33-64)	48.1 (± 5.9)			
Economic Situation	Very good	13	6.5	44 (33-52)	43.6 (± 5)	13.244	0.004	1<3
	Good.	71	35.3	48 (32-67)	49.1 (± 7.6)			
	Middle	99	49.3	49 (36-64)	48.6 (± 5.5)			
	Bad	18	9.0	45.5 (33-61)	44.7 (± 6.4)			
Where he lived until he was 12 years old	Rural	87	43.3	47 (32-66)	47.7 (± 6.2)	-0.792	0.429	
	City	114	56.7	48 (33-67)	48.4 (± 6.8)			
Housing Type	Slum	65	32.3	47 (33-66)	47.9 (± 6.1)	-0.342	0.733	
	Apartment Floor	136	67.7	47 (32-67)	48.2 (± 6.8)			
Place of Receipt of Health Information	Health worker	78	38.8	47 (32-64)	48 (± 7)	1.327	0.723	
	Radio/Television	117	58.2	48 (33-67)	48.2 (± 6.2)			
	Printed press	3	1.5	45 (42-48)	45 (± 3)			
	Family members	3	1.5	47 (45-64)	52 (± 10.4)			
Disease Requiring Regular Medication	Yes	25	12.4	45 (33-60)	45.2 (± 6.4)	**-2.436**	**0.016**	
	No.	176	87.6	48 (32-67)	48.5 (± 6.5)			
Book Reading Frequency	I never read	75	37.3	47 (32-66)	47.5 (± 6.6)	**4.117**	**0.128**	
	Occasionally	95	47.3	47 (33-67)	48 (± 6.5)			
	Frequently	31	15.4	50 (37-64)	50 (± 6.6)			
Vision Problem	Yes	22	10.9	46.5 (33-60)	47.5 (± 7.4)	-0.504	0.615	

Socio-demographic Characteristics		n	%	Median [Min-Max]	Mean ± SD	U/X	P- value	Post hoc
Hearing Problem	No.	179	89.1	48 (32-67)	48.2 (± 6.4)	-1.007	0.315	
	Yes	6	3.0	45 (41-49)	45.5 (± 3)			
	No.	195	97.0	47 (32-67)	48.2 (± 6.6)			
Average Number of Monthly Applications to a Health Institution for Any Health Problem (Disease, Vaccination, Test, Prescription Printing, etc.)	One time	108	53.7	48 (37-67)	48.4 (± 6.1)	1.243	0.743	
	Twice	77	38.3	47 (32-64)	48.1 (± 6.6)			
	Three times	12	6.0	47.5 (33-64)	46.8 (± 9.2)			
	Four times or more	4	2.0	46.5 (33-49)	43.7 (± 7.2)			
The first health institution you contact in case of a health problem/illness	Family health center	70	34.8	48 (33-63)	47.3 (± 6)	0.789	0.674	
	State hospital	124	61.7	47 (32-67)	48.5 (± 6.9)			
	Private hospital	7	3.5	50 (44-57)	49.7 (± 5.2)			
Smoking Status	Yes, I drink	69	34.3	45 (32-58)	45 (± 4.4)	28.307	<0.001	1<2,3
	I quit	56	27.9	48 (33-63)	48.3 (± 6.1)			
	I never drank	76	37.8	50 (37-67)	50.8 (± 7.3)			
Alcohol Use Status	Yes	13	6.5	45 (40-55)	46.3 (± 4.2)	-1.053	0.294	
	No.	188	93.5	48 (32-67)	48.2 (± 6.7)			
Total		201	100					

The Mann–Whitney U test was used for two-group comparisons, and the Kruskal–Wallis test for comparisons among more than two groups. U: Mann–Whitney U test; X^2: Chi-square test. Post hoc: Bonferroni correction was applied. A p-value < 0.05 was considered statistically significant

Table 4. Scales, Sub-dimensions, Scores, and Levels

Scale and its sub-dimensions	n	$\bar{x}$	Sd	Median	Min.	Max.	α
European Health Literacy Scale	201	27.85	19.6	29.78	0	44.6	0.88
Treatment Service	201	11.02	2.0	11.5	4	15.2	0.83
Access to Health Information	201	2.71	0.71	3	0.75	4	0.71
Understanding Health Information	201	2.83	0.62	3	1	4	0.71
Evaluating Health Information	201	2.41	0.89	2.75	0	4	0.84
Using Health Information Application	201	3.06	0.60	3	0.75	4	0.79
Disease Prevention	201	9.67	2.46	10.16	1.4	14.5	0.86
Access to Health Information	201	2.56	0.87	2.75	0	4	0.81
Understanding Health Information	201	2.60	0.89	2.66	0	4	0.75
Evaluating Health Information	201	2.48	0.82	2.8	0	4	0.75
Using Health Information Application	201	2.02	0.52	2	0	3	0.57
Health Promotion	201	8.07	1.66	8.4	2	12	0.83
Access to Health Information	201	2.67	0.62	2.8	0.4	4	0.64
Understanding Health Information	201	2.69	0.66	2.75	0	4	0.69
Evaluating Health Information	201	2.71	0.75	3	0	4	0.69
Using Health Information Application	201	2.64	0.63	2.75	0	4	0.73
Health Literacy Level	n (%)						
Inadequate health literacy	59 (29.3)	48.0	8.42	47	32	67	
Problematic health literacy	93(46.2)	47.8	4.81	48	36	60	
Adequate health literacy	47 (23.3)	48.8	7	47	39	66	
Excellent health literacy	2 (0.9)	50	7	50	45	55	
Health Perception Scale	201			47	32	67	0.71
Control Center	201	14.43	3.74	14	32	67	0.70
Self Awareness	201	11.26	1.95	10	6	15	0.55
Sharpness	201	10.73	2.65	10	5	20	0.67
Importance of Health	201	11.73	2.15	12	5	15	0.66

$\bar{x}$ = Mean; Sd = Standard deviation; α = Cronbach's alpha reliability coefficient.

Discussion

The present study was designed to evaluate the relationship between health literacy and health perception in pregnant women; however, no significant differences were observed. Health literacy is defined as the degree to which an individual is able to access, comprehend, and apply health-related information. However, even if the individual possesses this knowledge, it does not guarantee its implementation in their daily lives. In such instances, health literacy may not necessarily coincide with a high level of health perception (24).

The fact that this study was conducted with primiparous pregnant women, particularly during the first trimester, may have negatively impacted health perception. Furthermore, the limited sample size may have diminished the relationship between health literacy and health perception during pregnancy and prevented the observation of a potential relationship. Another factor is that health perception is influenced not only by an individual's ability to access and use information, but also by psychological states (anxiety, stress, depression) and cultural values.

Table 5. Correlation Table

Features	Age	Duration of Marriage	Number of Births	Number of Living Children	European Health Literacy Scale	Treatment Service	Disease Prevention	Health Promotion	Health Perception	Control center	Sharpness	Self-awareness	The importance of health
Age	1												
Duration of Marriage	r:0.859 p<0.001	1											
Number of Births	r:0.672 p<0.001	r:0.799 p<0.001	1										
Number of Living Children	r:0.687 p<0.001	r:0.808 p<0.001	r:0.968 p<0.001	1									
European Health Literacy Scale	r:-0.204 p:0.004	r:-0.335 p<0.001	r:-0.397 p<0.001	r:-0.383 p<0.001	1								
Treatment Service	r:-0.179 p:0.011	r: -0.320 p<0.001	r: -0.369 p<0.001	r: -0.368 p<0.001	r: 0.865 p<0.001	1							
Disease Prevention	r:-0.205 p:0.004	r:-0.280 p<0.001	r:-0.366 p<0.001	r:-0.364 p<0.001	r: 0.896 p<0.001	r:0.706 p<0.001	1						
Health Promotion	r:-0.081 p:0.252	r:-0.219 p:0.002	r:-0.206 p:0.003	r:-0.182 p:0.022	r: 0.752 p<0.001	r:0.476 p<0.001	r:0.516 p<0.001	1					
Health Perception	r:0.046 p:0.512	r:-0.067 p:0.347	r:-0.106 p:0.134	r:-0.109 p:0.172	r:0.071 p:0.316	r:0.052 p:0.464	r:0.033 p:0.640	r:0.102 p:0.151	1				
Control center	r:-0.037 p:0.606	r:-0.143 p:0.042	r:-0.147 p:0.037	r:-0.141 p:0.076	r:0.048 p:0.496	r:0.023 p:0.749	r:0.041 p:0.566	r:0.073 p:0.303	r:0.756 p<0.001	1			
Sharpness	r:-0.096 p:0.177	r:-0.114 p:0.107	r:-0.140 p:0.047	r:-0.142 p:0.073	r:0.138 p:0.051	r:0.186 p:0.008	r:0.135 p:0.055	r:0.014 p:0.845	r:0.543 p<0.001	r:0.288 <0.001	1		
Self-awareness	r:0.190 p:0.007	r:0.108 p:0.129	r:0.086 p:0.227	r:0.086 p:0.279	r:-0.046 p:0.518	r:-0.060 p:0.396	r:-0.113 p:0.111	r:0.090 p:0.205	r:0.529 p<0.001	r:0.130 p:0.060	r:-0.132 p:0.062	1	
The importance of health	r:0.152 p:0.031	r:0.089 p:0.209	r:0.027 p:0.704	r:0.010 p:0.903	r:0.005 p:0.946	r:-0.055 p:0.439	r:-0.034 p:0.628	r:0.086 p:0.226	r:0.596 p <0.001	r:0.102 p:0.150	r:0.046 p:0.516	r:0.651 p<0.001	1

r: Spearman's correlation coefficient; p: p-value (level of significance)

Table 6. European Health Literacy Scale Linear Regression

Independent Variables	Unstandardized B Coefficient	Standard Error	Standardized Beta Coefficient	t	P-value	Lower Confidence Interval for B 95	Upper Confidence Interval for B 95
(Fixed)	33.339	10.07	-	3.316	0.001	13.529	53.257
Age	0.916	0.694	0.083	1.176	0.241	-0.553	2.185
Age at marriage	3.012	1.397	0.151	2.156	0.032	0.256	5.767
Spouse Education Status	-1.545	0.614	-0.23	-2.516	0.013	-2.757	-0.334
Father's Education Status	0.742	0.517	0.118	1.435	0.153	-0.278	1.762
How would you evaluate your economic situation?	-0.571	0.668	-0.064	-0.855	0.394	-1.888	0.746
Do you have a disease that requires regular medication?	2.167	1.311	0.109	1.653	0.1	-0.42	4.753
Do you smoke?	2.863	0.525	0.37	5.456	<0.001	1.828	3.898
European Health Literacy	0.234	0.547	0.026	0.429	0.669	-0.844	1.313
Treatment Service	0.193	0.879	0.012	0.22	0.826	-1.54	1.927
Disease Prevention	-0.567	0.792	-0.212	-0.715	0.475	-2.113	1.664
Health Promotion	-0.224	0.957	-0.027	-0.234	0.815	-2.113	1.664

The lack of a significant relationship between health literacy levels and individuals' perception of their health may be due to these other factors. In conclusion, although no statistically significant relationship was found between health literacy and health perception in this study, this finding is significant given the unique psychosocial dynamics of pregnancy. Future studies with larger samples and incorporating psychological and cultural variables that influence health perception are recommended.

The term 'health perception' is used to denote an individual's subjective evaluation of their health status. The evaluation is influenced by a number of factors, including the level of knowledge, as well as the physical health status, psychological well-being, level of social support, cultural beliefs, and trust in the health system. Consequently, even an individual with a high level of health literacy may have a negative perception of their health in situations such as a chronic disease or mental stress. The World Health Organization (WHO) has underscored the crucial role of enhancing health literacy in achieving the 2030 Agenda for Sustainable Development. Health literacy is shaped by a wide range of societal factors, and therefore, it is not solely the responsibility of individuals to develop and sustain it. All information providers, including government, civil society, and health services, should ensure access to reliable information in a form that is understandable and applicable to all people (28, 29). Changes observed during pregnancy may improve health literacy by increasing the motivation of women to seek and use health information. However, this development depends on many factors such as the individual's level of education, socioeconomic status, and access to health services. At the same time, physical and emotional changes during this period can affect health perception both positively and negatively. Health professionals should manage this process well, ensure that women have access to accurate information, and should not neglect psychological support (30, 31).

In the study, it was determined that pregnant women had a good level of health literacy. When sociodemographic characteristics and health literacy scores were analyzed, there was a significant correlation between age, duration of marriage, educational status, spouse's educational status, mother's educational status, social security, place of residence until the age of 12, type of residence, frequency of reading books, and HLS. Health literacy during pregnancy enables women to correctly understand the health information they encounter during pregnancy and to use this information consciously. Health literacy has a direct impact on important decisions such as seeking health services, following medical instructions, making healthy lifestyle choices, and recognizing potential health risks in advance. Asadi (2020) shows that high health literacy during pregnancy leads women to develop better health behaviors and achieve healthier pregnancy outcomes (32). Health literacy plays a critical role in reducing health inequalities and improving overall health. Especially during pregnancy, women with high health literacy have been reported to apply to antenatal care services more frequently and to recognize pregnancy complications earlier (33). The relationship

between health literacy and health behaviors was examined, and it was found that individuals with high health literacy made healthier life choices. In pregnancy, this contributes to women's adoption of important health habits such as healthy nutrition, exercise, and stress management. Women's level of health literacy directly affects not only their health but also pregnancy, fetal health, newborn, and child health. Therefore, programs aimed at increasing women's health literacy may have long-term positive outcomes on both maternal and infant health (34). In this study, it was found that health literacy and health perception levels of pregnant women increased as their education and income levels increased. In the literature, it has been reported that individuals evaluate their health better as their educational level increases (11, 35). There are studies reporting that the level of health literacy increases with increasing education level in pregnant women (36, 37). Charoghchian Khorasani et al. reported that health literacy levels of pregnant women increased as their education and income levels increased (38). These results draw attention to the need to take measures to increase the health literacy levels of pregnant women with low education and income levels so that they can make the right health decisions.

In this study, health perception scores of pregnant women were found to be positive. Health perception during pregnancy is important because it has a direct impact on the health of both the mother and the baby. How the expectant mother perceives her health and how she shapes her health behaviors based on this perception may affect the course of the pregnancy process. The health perception of the expectant mother directly influences her adoption of healthy life behaviors during pregnancy (e.g., healthy eating, regular exercise, abstinence from smoking and alcohol). Inaccurate or low health perception can lead to risky behaviors, which can result in complications such as preterm birth, low birth weight, and pre-eclampsia. In one study, health perception was found to positively affect healthy lifestyle behaviors (39). High health perception during pregnancy can reduce maternal stress levels and lower the risk of postpartum depression. Women with positive health perception adapt themselves better to the pregnancy process. A study on health perception during pregnancy showed that women with high health perception had lower levels of stress and anxiety (40). High stress levels during pregnancy can lead to negative health outcomes for both mother and baby. Dunkel and Tanner (2012) discussed the effects of stress and health perception on psychological health during pregnancy. Anxiety, depression, and stress during pregnancy are risk factors that can have negative consequences for mothers and children. Anxiety during pregnancy can lead to a shorter gestation period and has negative effects on fetal neurodevelopment and child outcomes. Chronic stress and depressive symptoms in mothers during pregnancy are associated with low birth weight babies, which have negative effects on infant development (41). This study included questions to determine the individual obstetric characteristics of pregnant women. No measurement tool was used to assess their psychological state. Therefore, future

studies examining health literacy and health perception during pregnancy could utilize tools to identify depression or anxiety during pregnancy.

In this study, when sociodemographic characteristics and health perception scores were analyzed, there was a significant relationship between smoking status and health perception. The effect of health perception on smoking prevention during pregnancy is directly related to individuals' health awareness and the responsibility they feel for their health. Being aware of the harmful effects of smoking during pregnancy and acting with this awareness can reduce or completely prevent smoking. According to one study, a stronger perception of health during pregnancy increases the likelihood of quitting smoking during pregnancy. In particular, women who smoke during pregnancy tend to quit smoking when they learn about the harm of smoking to the baby (42). Moreover, direct smoking cessation counseling provided by health professionals to pregnant women has been identified as one of the most effective strategies for preventing smoking during pregnancy (43). This finding highlights that, in addition to strengthening individual health perception, professional interventions play a crucial role in promoting positive health behaviors during pregnancy. Positive health perception during pregnancy may help prevent smoking by understanding the negative effects of smoking. When health perception is strong, women become more conscious about protecting themselves and their babies, which supports them to abandon harmful habits such as smoking.

In this study, no significant relationship was found between health literacy and health perception of pregnant women. However, it was found that pregnant women had a good level of health perception and a high level of health literacy. The relationship between health literacy and health perception is closely related to how accurately people understand health information and how they interpret this information. Women with high health literacy perceive their health better during pregnancy and can more accurately assess their health risks. This improves their decisions about pregnancy. Health literacy level in pregnancy is very important in terms of public health (38).

It has been reported that low health literacy level prevents individuals from accessing the right information and services, using these services, using resources correctly, and being competent in their health (37). In his study, Filiz reported that health literacy and health perception were related (33). These results show that the health literacy level of pregnant women has a significant effect on health perception.

In their systematic review of health literacy and public health definitions and models, Sørensen and colleagues (2012) found that individuals with high health literacy adopt healthy lifestyles and are more aware of accessing healthcare services (1). Şenol et al., in their 2019 study, concluded that mothers with low health literacy generally perceive their health negatively and have difficulty managing health behaviors during pregnancy (37). Low health literacy can lead to increased risks of complications during pregnancy and prevent adequate access to health services. In addition, it was found that

these pregnant women had less knowledge about prenatal care and prenatal education, which led to negative health perceptions. In a study addressing the relationship between health literacy in pregnancy and pregnancy-related health behaviors, it was found that mothers with high health literacy adopted healthier habits during pregnancy, and this had a positive effect on their health perceptions (17). Pregnant women with high health literacy received more regular prenatal care and preferred healthy behaviors such as healthy eating and exercise. This resulted in more positive health perceptions.

One study examined how health literacy affects psychological health and health perception during pregnancy. It found that mothers with low health literacy experienced more psychological stress during pregnancy, negatively impacting their health perceptions and being less aware of healthy behaviors during pregnancy. Conversely, mothers with high health literacy perceived pregnancy as healthier and experienced fewer negative effects on psychological health (44). The relationship between health literacy and health perception during pregnancy directly affects pregnant women's access to health services and how they understand and apply health information. High health literacy helps women to have more positive health perceptions and leads to healthy pregnancy outcomes. On the other hand, low health literacy may lead to negative health perceptions and underutilization of health services during pregnancy.

In the study of Şirin Gök et al. (2023), it was found that there was a statistically significant positive relationship between general health literacy and the mean scores of health practices of pregnant women, and in the study of Akça et al. (2020), a statistically significant positive relationship was found between the mean scores of health perception and health literacy of pregnant women (23, 45). Women with high health literacy have a better understanding of health information and are more successful in managing their health with this information. This leads to a positive perception of health during pregnancy. Health literacy promotes healthy behaviors during pregnancy. Making informed decisions based on health information contributes to healthier pregnancy processes (46). Women with high health literacy can access health services more easily, manage their health better, and recognize complications early. This leads to more positive health perceptions (47). Psychological factors may also affect health perception during pregnancy. Health literacy may increase the mother's capacity to cope with stress and indirectly create a healthy pregnancy perception (48). In their study in 2021, Nawabi et al. found that health literacy levels were different in pregnant women. In this context, health personnel play an important role in increasing the health literacy of pregnant women; pregnant women with limited health literacy trust them as a source of health information (49).

Study Limitations and Strengths: The study was limited to pregnant women admitted to Mardin Training and Research Hospital and Kızıltepe State Hospital. This situation limits the generalizability of the findings. The study was limited to pregnant women in the third trimester and did not cover the health literacy levels of women in other pregnancy periods.

The study was conducted without prior statistical power analysis for the sample size, and the data were collected using the convenience sampling method. This may limit the generalisability of the results and create a risk of bias in sample selection. As the data is collected through self-report scales, it depends on the accuracy of the participants' statements. This may lead to information bias. The use of validated scales such as the European Health Literacy Scale and the Health Perception Scale increased measurement reliability and the scientific value of the results. An extensive analysis was conducted to assess health literacy and health perception levels, with a focus on their correlation with various demographic and socio-economic factors. These factors included education, income, and household type, reading frequency, age at marriage, smoking, and regular drug use.

Suggestions for Future Studies: In subsequent studies, it is advised that the sample group be expanded to include a more diverse range of age demographics, as well as female participants with multiple births, and comparisons between rural and urban areas.

Conclusion

This study shows that the health literacy level of pregnant women is generally at a moderate level, and health perception is at a good level. Sociodemographic variables such as educational status, economic status, housing type, reading habits, and living environment were found to have significant effects on health literacy. As demographic variables such as age, duration of marriage, and number of births increased, significant decreases were observed in health literacy scores. However, no statistically significant relationship was found between health literacy and health perception. This shows that health perception may be affected not only by the level of knowledge but also by the psychosocial environment, emotional state, and personal experiences of the individual. However, weak but significant correlations were observed between some sub-dimensions of health perception (e.g., control center) and health literacy sub-dimensions. The results obtained show that interventions aimed at improving health literacy should address not only the individual but also the system. In this regard, it is recommended that structured health literacy programmes for pregnant women be developed within healthcare institutions and implemented at a national level. To improve health literacy among pregnant women with low levels of education, simplified, visual, and culturally adapted informational materials should be prepared. Given the positive correlation between reading habits, lifestyle, and health literacy, tools such as magazines, mobile health applications, and informational brochures aimed at pregnant women should be encouraged. The results of our study provide an important basis for health managers and policymakers to plan programmes at a social level aimed at improving health literacy, especially among disadvantaged groups. In this context, the results of our study could inform the restructuring of health services for pregnant women, taking a more holistic and inclusive approach. They may also contribute to the restructuring of health services for pregnant women, providing a more holistic and inclusive approach.

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Ethics approval and consent to participate: Before the study, the approval of Artuklu University Non-Interventional Ethics Committee dated 13.02.2024 and numbered 2024/2-34 was obtained. Written informed consent was obtained from all participants, and the study was conducted in full compliance with the ethical principles of the Declaration of Helsinki. Participants were informed about the study's aim, advantages, risks, and procedures before the intervention. Participants were provided with a digital information sheet that contained written and verbal explanations of the study's contents. The researcher maintained the privacy of each participant's identity while safely storing the data for the necessary time.

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