Original Article

The Effect of Health Literacy Levels of Pregnant Women on Receiving Prenatal Care: A Cross-Sectional Descriptive Study

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Abstract

Background: Health literacy signifies the skill of making decisions about individuals' health, as well as investigating, comprehending and applying information about health. Thus, health literacy also affects health decisions made by women during pregnancy and breastfeeding. **Aim:** The study was conducted to determine the states of pregnant women to receive prenatal care and their health literacy and the relationship between them.
Methods: The cross-sectional descriptive study was conducted with 153 pregnant women who were admitted to the gynecology polyclinic of a public hospital in the Central Anatolia. The data were collected with the face-to-face interview method using a questionnaire which was prepared by the researchers for the purpose of determining the socio-demographic characteristics of pregnant women and the Adult Health Literacy Scale.
Results: While examining the scores obtained by the pregnant women from the Adult Health Literacy Scale (AHLS), it was determined that total score was 14.99±3.44 (min=2, max=22). It was determined that as the educational level increased, the score of the AHLS increased. It was observed that the mean scores of the AHLS were higher in women who had social security than those who did not, in primiparous and multiparous pregnant women than grand multiparous pregnant women and in pregnant women who received sufficient prenatal care than those who did not and the difference between them was statistically significant ($p \leq 0.05$).
Conclusion: It was determined that health literacy levels of the pregnant women affected the state of receiving sufficient prenatal care positively.

Key Words: Health Literacy, Pregnancy, Prenatal Care

Introduction

According to the World Health Organization (WHO), health literacy includes cognitive-social skills and motivation levels of individuals to reach, understand and use information in order to protect and promote their health (WHO, 2009). Health literacy can be defined as a capacity of obtaining, interpreting and using basic medical knowledge and services such as benefiting from treatment services if an individual's health is protected, promoted or deteriorates (Rowlands, 2014). On the other hand, a low health literacy is associated with bad health outcomes such as difficulties in skills of understanding medical knowledge, problems with the effective use of healthcare services, increasing use of hospital emergency service, a worsened general health condition and a higher mortality (Berkman et al., 2011; Heijman et al., 2015; Friis, Lasgaard, Osborne & Maindal, 2015). The studies have indicated that health literacy is more effective on determining the individual's medical condition than socioeconomic factors (Williams, Baker, Parker & Nurss, 1998; Schillinger et.al., 2002; Parker, Baker, Williams & Nurss, 1995).

WHO defines prenatal care (PNC) as monitoring of the mother and fetus by a trained medical personnel once or more throughout the pregnancy for the purpose of allowing expectant mothers to get through their pregnancy and give birth in a healthy way (WHO 2013; Catak, Aksan & Zincir, 2012). PNC includes three main components as the assessment and protection of maternal and fetus health, medical counseling and training and therapeutic health services when necessary (WHO, 2013; Raatikainen, Heiskanen & Heinonen, 2007). The Society of Obstetricians and Gynaecologists of Canada also indicates that PNC should be started as from the 10th gestational week (SOGC, 2013). In the "Prenatal Care Management Guidelibe" prepared by the Ministry of Health in Turkey, it is stated that every pregnant women should be monitored for at least four times as from the 14th gestational week (Republic of Turkey Ministry of Health, 2009). The World Health Organization has reported that 68.0% of women in developing countries and 98% of women in developed countries receive PNC service (Pirinççi, Polat, Köroglu & Kumru, 2010). According to the 2013 results of the Turkish Demographic and Health Surveys (TPHS); the rate of receiving PNC from medical personnel during the last birth is 97% (TPHS, 2013). While there is an increasing number of studies concerning health literacy in high-income developed countries (Sorensen et al., 2012); there is a very limited number of studies in low-income and middle-income countries (Lori, Ofosu, Boyd, Banerjee & Adanu, 2017). When considering the indicators reflecting maternal and neonatal health; the increase of health literacy level is of great importance (Hodgins et al., 2016). Health literacy signifies the skill of making decisions about individuals' health, as well as investigating, comprehending and applying information about health (Jordan et al., 2013; Barnes, Barclay, McCaffery & Aslani, 2018) Thus, health literacy also affects health decisions made by women during pregnancy and breastfeeding (Barnes et al., 2018). In brief, a woman's knowledge, skills and confidence will affect her healthcare preferences that she makes during pregnancy and breastfeeding (Ostini & Kairuz, 2014). In the literature, there are studies examining the relationship between health literacy and health outcomes, whereas there is no study aiming to determine the effects of health literacy on women's reproductive health. Approximately 800 women die every day around the world due to preventable causes related to pregnancy and birth. Being at least a primary school graduate will reduce these deaths at the rate of 66% for women. Likewise, the applicability of cheap and effective precautions that may affect children's health and survival is associated with educational level of mothers (UNESCO, 2014). Also in Turkey, women's literacy remains an important issue. According to TPHS, it is seen that infant and child mortality is associated with educational level of mothers (TPHS, 2013). It is necessary to put excessive emphasis on health literacy because it is a possible condition usually affecting reproductive health multidirectionally. Information about contraception, safe sexual practices, healthy pregnancy and postpartum practices, as well as preventive care are important for women to sustain their healthy and productive lives (ACOG, 2014; Kilfoyle, Vitko, O'Conor & Bailey, 2016). Because especially pregnancy is a period in which women avail of healthcare services most frequently and are open to learning the knowledge and behaviors concerning health, this period can be considered an opportunity for increasing health literacy level. In this study which was planned on the basis of the question, "How do the health literacy of pregnant women and health literacy affect receiving prenatal care?", it was aimed to determine the effect of health literacy of pregnant women on their state of receiving prenatal care.

Methodology

Study design: The study was a cross-sectional descriptive study.

Setting and sample: The study was conducted at a public hospital in a city center in the Central Anatolia in Turkey. The population of the study consisted of the pregnant women who were admitted to the gynecology outpatient clinics of the public hospital between October 2017 and January 2018. The study was conducted with 153 pregnant women who were admitted to the gynecology outpatient clinics between the aforementioned dates, could read and write in Turkish, could communicate and agreed to participate in the study.

Data collection tools and data collection: The data were collected using a questionnaire which was prepared by the researchers in accordance with the literature and includes a total of 23 questions including 6 questions on socio-demographic characteristics of the pregnant women and 17 questions on their pregnancy and

PNC histories as well as the Adult Health Literacy Scale. The data were collected by the researcher with face-to-face interview technique. It took approximately 15-20 min. for each person to complete the questionnaires.

Adult Health Literacy Scale (AHLS): Developed by Sezer and Kadıoglu (2014); AHLS is a valid and reliable scale. The scale includes a total of 22 items concerning medical knowledge and drug use aimed at determining the competence of adult individuals regarding health literacy and 1 figure showing the location of organs in the body. 13 of the questions in the scale are yes/no, 4 are fill-in-the-blanks, 4 are multiple-choice and 2 are matched. The questions are scored individually for each question type. Individuals marking positive statements in the yes/no questions get 1 point; whereas, those marking negative statements get 0 point. In the fill-in-the-blank questions, right answers are given 1 point and wrong answers are given 0 point. In the multiple-choice questions, individuals marking two and more than two right answers are given 1 point; whereas, those marking wrong answers or both right and wrong answers are given 0 point. In the matched questions, individuals matching more than two right answers get 1 point; whereas the others get 0 point. The scores to be obtained from the scale vary between 0-23. Higher scores signify higher health literacy level (Sezer & Kadıoglu, 2014).

Statistical analysis: The data acquired from the study were evaluated using the SPSS 20.0 packaged software. Convenience of the data of the sample group for normal distribution was examined by the Shapiro-Wilk's test and it was observed that they were not convenient for the normal distribution. Number and percentage distributions were used for evaluating descriptive characteristics. On the other hand, Kruskal-Wallis H and Mann- Whitney U tests were used for variables that were not normally distributed in the between-group comparison. In the assessment of the data, the significance level was determined as $p \leq 0.05$.

Ethical considerations: In order to collect the data, approval from the Ethics Committee of a university in the Central Anatolia (13.10.2016/03) and permission from the Provincial Directorate of Health in the province where the study was conducted were obtained. The pregnant women were informed about the study and the "Informed Consent" form was received from those, who accepted to participate in the study, for voluntary participation.

Limitations of the Study: Because the study was conducted only at a public hospital in a city center in the Central Anatolia, Turkey, its results cannot be generalized to the whole population. The study is limited with the study date, data collection form used suitable for the purpose and responses of the mothers.

Results

The mean average of the pregnant women who participated in the study was 27.88±5.58 years (min=18, max=46) and majority of them were primary school graduates (47.7%) and housewives (85.6%). Age average of the first marriage of the pregnant women was 21.41±4.09 years. 86.3% of the sample group had social security. When examining obstetrical histories of the pregnant women, it was determined that 21.6% of them were primiparous, 53.6% were multiparous, and 24.8% were grand multiparous. Among those who were primiparous and grand multiparous, the rate of vaginal delivery was 68.3%, the rate of c-section was 31.7%, and the rate of abortion was 30.8% (Table 1).

It was determined that all of the pregnant women who participated in the study received prenatal care for at least once and 78.4% sufficiently. 94.1% of the pregnant women stated that they received this care from a hospital. When examining whether or not the sample group experienced any health problem during their pregnancy, 19% of the pregnant women reported that they had any health problem. The top three most frequently encountered health problems were bleeding (5.2%), pregnancy hypertension (3.3%), and pregnancy diabetes (3.3%). Among the women experiencing health problem, 17% stated that they applied to a medical institution for their problems. A great majority of the pregnant women (86.3%) stated that they knew diseases for which they should consult a doctor during pregnancy. It was indicated that the top three reasons for consulting a doctor were bleeding (85%), slowdown of the baby's movements (57.5%), and fever (51%) (Table 2). It was determined that there was no significant correlation between descriptive characteristics of the pregnant women (age, educational background, number of pregnancies, state of having an abortion etc.) and their state of receiving PNC ($p \geq 0.05$).

Table 1. Socio-demographic features of the study sample

Socio-demographic features	n	%
Education		
Primary	73	47.7
High School	56	36.6
University	24	15.7
Occupation		
Housewife	131	85.6
Civil Servants	13	8.5
Workers	9	5.9
Social security		
Yes	132	86.3
No	21	13.7
Number of pregnancy		
Primipar	33	21.6
Multipar	82	53.6
Grand multipar	38	24.8
Type of the last labor		
Normal (vaginal birth)	38	68.3
Caesarian section	78	31.7
Total	153	100

Table 2. Receiving antenatal care

Receiving antenatal care	N	%
Receiving sufficient antenatal care		
Sufficient	120	78.4
Insufficient	33	21.6
Place of antenatal care		
Hospital	144	94.1
Family health center	9	5.9
Health Problem in Pregnancy		
Pregnancy Diabetes	5	3.3
Coagulation Disorder	1	0.7
Growth Retardation in Infant	1	0.7
Hypertension	5	3.3
Bleeding	8	5.2
Urinary Problem	5	2.6
Emesis	4	3.3
To know the situation in pregnancy should apply to the physician		
Bleeding	130	85.0
Abdominal Pain / Contraction	70	45.8
Headache	57	37.3
Edema	45	29.4
Fainting	62	40.5
Vomiting	68	44.4
Fever	78	51.0
Hypertension	68	44.4
Slowdown in baby movements	88	57.5

Table 3. Distribution of Adult Health Literacy Scale Total Score Average According to Some Characteristics of Pregnant Women

Feature	n	Mean±SD	Test	P
Education				
Primary	73	13.72±3.15		
High school	56	15.21±3.19	$\chi2$=35.114	**0.000**
University	24	18.33±2.44		
Social security				
Yes	132	15.56±2.96	U=585.000	**0.000**
No	21	11.38±4.10		
Number of pregnancy				
Primipar	33	15.93±3.69		
Multipar	82	15.14±3.41	$\chi2$=9.466	**0.009**
Grandmultipar	38	13.84±3.03		
Receiving antenatal care				
Sufficient	120	15.40±3.23	U=1356.000	**0.005**
Insufficient	33	13.48±3.78		
To know the situation in pregnancy should apply to the physician				
Yes	132	15.29±3.26	U=924.500	**0.014**
No	21	13.09±3.98		

When examining the scores obtained by the pregnant women from the Adult Health Literacy Scale, it was determined that total score was 14.99±3.44 (min=2, max=22) and they had moderate health literacy. Table 3 shows the data concerning independent variables thought to affect the scores of the Adult Health Literacy Scale. It was determined that as the educational level of the women increased, their scores of the Adult Health Literacy Scale increased (p=0.000). It was seen that the mean scores obtained from the Adult Health Literacy Scale were higher in women who had social security than those who did not, in primiparous and multiparous pregnant women than grand multiparous pregnant women, in pregnant women who knew to consult a doctor for which diseases than those who did not and in pregnant women who received sufficient prenatal care than those who did not and the difference between them was statistically significant (p=0.000; p=0.009; p=0.014; p=0.005) (Table 3).

Discussion

It was determined that the age average of the first marriage of the pregnant women who participated in the study was 21.41±4.09 years, all of them received prenatal care for at least once and a great majority of those who stated that they received prenatal care (78.4%) received sufficient prenatal care (at least 4 and more follow-ups). In other studies conducted in different regions of Turkey, it has been stated that almost all women receive PNC (Kucuk, Can & Toptas, 2004; Etiler, Aktekin & Capar, 2000). In the "Prenatal Care Management Guideline" prepared by the Ministry of Health in Turkey; it is stated that every pregnant women should be monitored for at least four times throughout her pregnancy. In the present study, 78.4% of the mothers received PNC for four times and more, which indicates that they received sufficient PNC according to the aforementioned guideline. According to the TPHS (2013) data in Turkey, the rate of receiving sufficient number of prenatal care is 89% (TPHS, 2013). Also in the present study, the rates of receiving sufficient PNC show a similarity with the TPHS data.

A great majority of the pregnant women who participated in the study stated that they knew diseases for which they should consult a doctor during pregnancy, whereas only 17% of those who stated that they experienced a health problem concerning pregnancy applied to a medical institution for their problems, which is a remarkable finding. Health literacy of pregnant women affect their skills of understanding and using knowledge in order to protect and promote their health. There is a limited number of studies on health literacy during pregnancy. It was determined that the score obtained by the

pregnant women in the sample group from the "Adult Health Literacy Scale" was 14.99±3.44. When considering that the highest score to be obtained from the scale is 23; it cannot be asserted that the pregnant women have good health literacy levels. A low health literacy level prevents the person from reaching the right knowledge and service, using that service, using the resources properly and being competent in their own health and community health (Mancuso, 2008).

In the present study, it was determined that as the score obtained from the "Adult Health Literacy Scale" increased, the rate of receiving sufficient prenatal care increased. Other studies in the literature have reported different results. In the study by Bennett et al., it was stated that there was no statistically significant correlation between receiving insufficient prenatal care and health literacy, whereas, in the results of their study, Hameen-Anttila et al., concluded that pregnant women with low or moderate health literacy needed more information concerning prenatal care (Bennett, Switzer, Aguirre, Evans & Barg, 2006; Hämeen-Anttila et al., 2015). In the study conducted by Endres et al., with pregnant women in the high-risk group due to pregestational diabetes, it was stated that pregnant women with low health literacy had lower rates of receiving consultancy than pregnant women with sufficient health literacy (Endres, Sharp, Haney & Dooley, 2004). Also in the study by Poorman et al., it was stated that as health literacy levels of pregnant women increased, the frequency of receiving prenatal care was more regular (Poorman, Gazmararian, Elon & Parker, 2014). Besides, the studies have indicated that the rates of having antenatal tests are lower among pregnant women with low health literacy (Cho, Plunkett, Wolf, Simon & Grobman, 2007). In a study examining the effect of health literacy on PNC and pregnancy outcomes, it was stated that pregnant women with high health literacy levels received PNC earlier and more frequently. The same study also revealed that pregnant women with high health literacy levels were different from those with low health literacy levels in respect to the subjects such as hematocrit levels, the use of iron and folic acid, delivery preferences, weight gain during pregnancy and breastfeeding (Kohan, Ghasemi & Dodangesh, 2007). In another study, it was stated that mothers with high health literacy level gave birth to premature infants and infants with low birth weight less frequently, experienced less infant mortalities, and had higher rates of breastfeeding than mothers with low health literacy levels (Ohnishi, Kakamura & Takano, 2005). It is seen that relevant studies in the literature support the findings of the present study.

Results of the present study and also other studies in the literature clearly suggest that health literacy has a direct effect on pregnancy in terms of both mother and infant and it is important to know and improve the health literacy level.

Conclusion

The pregnant women's low educational level, lack of social security, state of being multiparous and/or grand- multiparous and knowledge level concerning the problems to consult with the doctor during pregnancy were associated with low health literacy level. This study reveals the importance of evaluating health literacy in identifying the state of pregnant women to receive sufficient prenatal care, as well as their health risks. Considering pregnancy-specific health literacy might be useful for allowing pregnant women to receive sufficient prenatal care, identifying risky situations for maternal and infant health in the early period and controlling possible feto-maternal risks. Knowing the health literacy level is the first step of improving this level. Knowing the levels of pregnant women who utilize healthcare services to understand and comprehend health-related issues will allow to identify the problem and increase the effectiveness of healthcare services and health education to be provided to pregnant women. Pregnant women who reach better health knowledge will thus change their lifestyles and living conditions and tend towards behaviors that may improve the health of their own, their families and consequently society.

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