Predicting factors influencing prenatal care based on Health Literacy in Balochistan primigravida Women

Hossein Izadirad

* PhD of Health Education & Health Promotion, Deputy of Health, Zahedan University of Medical Sciences, Zahedan, Iran, ORCID: 0000-0002-9067-8661 (Corresponding Author):
E-mail: izadi111389@gmail.com

Mahdi Ali Ahmadi

MSc Student of Health Education & Health Promotion, School of health, Zahedan University of Medical Sciences, Zahedan, Iran, ORCID: 0000-0002-8661-1501

Shamsaddin Niknami

Prof., Dept. of Health Education and Health Promotion, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran, ORCID: 0000-0003-1344-5300

ABSTRACT

Background and Objective: Maternal health literacy is a key and important factor in ensuring prenatal care, prenatal health, and the successful outcomes of this period. The aim of this study was to determine the predicting factors of prenatal care based on health and demographic factors in Balochistan pregnant women.

Materials and Methods: This analytical cross-sectional study was performed on 430 primigravida women referring to Balochistan urban health centers in Iran, who were selected by multi-stage cluster sampling, between June and September of 2017. The data collection tool was Health Literacy for Iranian Adults (HELIA) questionnaire, and a researcher-made questionnaire for measuring prenatal care. Data analysis was performed using descriptive statistics and binomial logistic regression analysis.

Results: The mean (standard deviation) of prenatal care behaviors and health literacy were 13.11 (2.18) of 22 and 65.97 (17.49) of 100, respectively. In this study, 17.3% (75 people) of pregnant women had low health literacy, 30.6% (132 people) had inadequate health literacy, 35.5% (153 persons) had adequate health literacy and 16.27% (70 people) had high health literacy. Among variables, only health literacy was predicting of prenatal care behaviors (P = 0.004, OR = 027/1), indicating that with 1 unit increase in this variable, prenatal care behaviors were 1.027 times higher.

Conclusion: Regarding the predictability of health literacy on prenatal care behaviors, it is essential to develop education program using health literacy strategies for improving prenatal care.

Paper Type: Research Article

Keywords: Health Literacy; prenatal care; Balochistan

Introduction

The purpose of prenatal care is to maintain healthy pregnancy in terms of physical and mental health for the mother, the infant and the family (1). Prenatal care special programs included diagnosis of high risk pregnancies, prevention of pregnancy complications, maternal and child health, care provision, nutrition, physical activity, and personal hygiene (2). Prenatal care is an effective intervention to improve pregnancy outcomes (2-3). As a result, there was a significant reduction in the birth of a premature and low birth weight infant among women who received prenatal care (2-4).

During 2013, approximately 800 women died in the world every day due to complications in pregnancy and childbirth. The risk of death due to pregnancy complications in developing countries is 23 times higher than in developed countries. In developing countries, 83% of pregnant women have received only one prenatal care (1). Prenatal care received in pregnant women was 36% in Mazandaran and 47% in pregnant women of Tabriz (5). This amount is 44% in pregnant women in Balochistan, Iran (6).

There are many factors contributing to prenatal care among pregnant women such as Health system factors (distance dimensions, cost, and quality of cares) and individual related factors including individual-social variables (economic status, level of education, lack of decision-making power, lack of awareness of the type and location of health services, and the lack of awareness of the need to the services) (7). Demographic variables such as age, level of literacy and household income level play a major role in prenatal care (8). Another important individual factor affecting prenatal care is the low level of health literacy among pregnant women, which makes them not to use the health services available for pregnant women (9).

According to the WHO definition, health literacy represents cognitive and social skills that determine the ability of individuals to acquire, understand and use health information in such a way as to preserve and maintain the ideal level of health (10). Health literacy in pregnant mothers include special knowledge and special social skills to diagnose prenatal risk symptoms, healthy lifestyle and proper nutrition during pregnancy and is effective on the outcome of pregnancy through improving the quality of prenatal health care (11). Several studies have shown that mothers with high levels of health literacy have less neonatal death and low birth weight. There was also a significant relationship between pregnancy outcomes (such as preterm labor, fetal death and birth weight), early onset Care, the number of mother's visits and the practice of health recommendations with maternal health literacy level (11). The results of research by Kharazi et al. showed that women with low level of health literacy started parental care at a later stage and the frequency of referral was inadequate (12). Mojoyinola study showed that pregnancy complications in pregnant women with higher levels of health literacy would be lower (13).

However, the results of the study showed that there is no relationship between the level of health literacy and self-care during pregnancy (14). Despite the importance of health literacy and the contradictory impact on prenatal care in Iran, especially in the Balochistan region, it seems effective to study the predicting variables on healthy behaviors during pregnancy; since they can influence

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the health of mothers and pregnancy outcomes in the area (15). Therefore, the present study was conducted to determine the predicting factors of prenatal care based on health literacy and demographic factors in pregnant women of Balochistan.

Materials and Methods

This analytical cross-sectional study was performed on 430 primigravida women referring to urban health centers in Balochistan, Iran from June to September of 2017. the statistical population of the study consisted of all primigravida women referring to Balochistan urban health centers (south east of Iran). The sample size with 95% confidence and the maximum 5% error estimate based on the formula was 384, which was increased to 430 with an estimated 12% probability drop. the P was 0.5 due to the inaccessibility of an adequate level of health literacy .

$$n = \frac{Z^2 \cdot P(1-P)}{d^2}$$

Cluster Sampling was done and samples were randomly selected. In this way, out of 43 urban health centers were randomly selected. Then, from each urban health center, 10 primigravida women were randomly selected from the list of pregnant women in the center. From 43 urban health centers, 430 samples were selected. Sample selection criteria were: being primigravida, 18 to 35 years old, having reading and writing ability, having a care case in health centers and gestational age in the second quarter. Sample exclusion criteria include: people with vision and hearing problems and pregnant women requiring special care for pregnancy.

This study was approved by the Ethics Committee of the Faculty of Medical

Sciences Tarbiat Modares University of Tehran. Participants were assured that their information would be kept secret and disseminated in a general way, and will be used only for the purposes of the research. Written consent was obtained from each participant. All questionnaires were completed in a self-reported way in the community hall of the urban health center.

Demographic (age, occupation, insurance, education level and income), health literacy and prenatal care behaviors questionaries' were used for collecting information.

A. Demographic questionnaire: Demographic data included 5 questions: age, education level, occupation, monthly income and health insurance status.

B. Health literacy for Iranian adults (HELIA) questionnaire: This tool was used to measure the level of health literacy in this study, which was designed in 2014 by Montazeri et al. (16).

The questionnaire has 33 items (5 options) and measures Iran's urban health literacy (18 to 65 years) in five dimensions of reading, analyzing, access, understanding and decision-making skills. In Montazeri et al. (16) study, the validity of the questionnaire has been confirmed by exploratory factor analysis. Also, the Cronbach alpha was reported to be 0.72-0.89. Psychometricity of the HELIA questionnaire in the urban population of Balochistan region indicated the proper internal consistency of the items (Cronbach's alpha was 785/0 to 9/0). Also, based on the results of the confirmatory factor analysis, the questionnaire has a desirable structure validity (17). The advantages of this questionnaire include: being short and concise, covering various dimensions of health literacy and its plain and general language. Its recent attribute has caused a lack of belonging

to the special occupation, education, and age groups and can be applied to all different population groups and determine the level of health literacy accurately.

The number of items and the minimum and maximum points for health literacy dimensions respectively included: 4 items for reading range from 4 to 20, 6 items for access ranged from 30 to 60, 7 items for understanding ranged from 7 to 35, 4 items for analyzing ranged from 4 to 20 and 12 items for the decision and behavior ranging from 12 to 60. The total number of items was 33, and the minimum and maximum points were 33 and 165 respectively. To calculate the total score, the scores of all health literacy dimensions (based on the range of 0 to 100) were summed up and were divided into the number of health literacy dimensions (5). The ranking of health literacy levels based on the HELIA questionnaire is 0 to 50 is low, 50-166 is inadequate, 66.1 to 84 is adequate and 84.1 to 100 is high (16).

C. Prenatal care behaviors questionnaire: Prenatal care behaviors measuring tool include all prenatal care that a pregnant woman needs during pregnancy, including pregnancy tests, supplements, weight measurements, blood pressure, performing ultrasound, oral health, physical activity, proper nutrition, vaccination, and so on. This tool consists of 11 questions with 3-point Likert scale (always, rarely and never). For example, during pregnancy, which of the following measures have you taken? 1. Required pregnancy tests; 2. Regular use of reinforcing pills (iron, multivitamins, folic acid), and 3-blood pressure measurement. The minimum and maximum points of the questionnaire for caring behaviors were 0 and 22 respectively (score less than 7 was poor, scores between 7-14 was moderate,

and higher than 14 was considered as good). The reliability of the questions was based on the test-re test between 0.86 and 0.86 and the content validity of the tool was 0.86-0.89.

After collecting data, they were entered into SPSS version 18. To analyze the data, descriptive statistics including frequency distribution, mean and standard deviation were used to describe the data. Spearman correlation coefficient was used to calculate the correlation of the studied variables. Binomial logistic regression was used to evaluate the predictability of the variables. Qualitative variables of education level and occupation were entered into the model in dummy coding way. All variables were entered into the model at once and examined by the dependent variable. The significance level in the tests was considered 0.05.

Results

The mean (standard deviation) age of the subjects was 22.33 (15.4) years with a minimum of 18 and a maximum of 35 years. The mean (standard deviation) of prenatal care behaviors in pregnant women was 13.11 (2.18) out of 22. 67% (291) of pregnant women had higher than moderate levels of prenatal care.

The mean (standard deviation) of health literacy rate in pregnant women was 65.97 (17.49) out of 100. The mean (SD) of the health literacy score in different dimensions of reading was 58.51 (25.83), access was 65.36 (23.45), understanding was 71.09 (6.11), analyzing was 61.65 (25.70) and decision making was 73/24 (19/50). 47.9% (207) of the pregnant women had low and inadequate health literacy levels. Also, 35.3% (153) had adequate health literacy and 16.07% (70) had a high level of health literacy. 94% (404) of

pregnant women reported that they were not working. Table 1 shows other demographic characteristics of the participants in the study.

Table 1. Frequency distribution of demographic characteristics of primigravida Women referring to urban health centers of Balochistan region in 2017 (n = 430)

Variables		Numbers	Percentages
occupation	Housewife	404	94
	Employed	26	6
Insurance status	Yes	410	4/95
	No	20	6/4
Education level	Elementary and Middle school	190	2/44
	High school	154	8/35
	University	86	20
Family monthly income	Less than 500 thousand Tomans	246	2/57
	Between 500 thousand to 1 million Tomans	138	1/32
	Between 1 and 2 million Tomans	42	8/9
	More than 2 million Tomans	4	9/0

Among the variables of health literacy and demographic factors, there was only a significant relationship between health literacy and prenatal care behaviors (r = 0.218, p <0.001). Also, there was a significant relationship between education and occupation of pregnant women with their level of health literacy (P< 0.05). There was no significant relationship between age, insurance, and income level with the variables of health literacy level and prenatal care behaviors (P> 0.05). The results of the relationship between the other variables are presented in Table 2.

Table 2. Matrix of health literacy correlation coefficient and demographic factors with prenatal care behaviors in pregnant women of Balochistan

	Age	Education		Insurance	Income	Health Literacy	Prenatal care behaviors
Age	1						
Education	r=0/116 P=0/089	1					
Occupation	r=0/267** p<0/001	r=0/251** p<0/001	1				
Insurance	r=0/221** p<0/001	r=0/052 p=0/448	r=0/035 p=0/610	1			
Income	r=0/101 p=0/139	r=0/282** p<0/001	r=0/277** p<0/001	r=0/163* p=0/016	1		
Health Literacy	r=0/088 p=0/197	r=0/279** p<0/001	r=0/138* p=0/043	r=0/003 p=0/963	r=0/122 p=0/075	1	
Prenatal Care Behaviors	r=00/125 p=0/067	r=0/086 p=0/209	r=0/003 p=0/964	r=0/055 p=0/423	r=0/105 p=0/143	r=0/218** p<0/001	1

Spearman correlation test, * representing p<0/05, ** representing p<0/01

In order to determine the predicting factors for prenatal care, Binomial Logistic regression analysis were used to control the possible confounding factors. Based on the logistic regression model, among all variables influencing prenatal care behaviors, only the health literacy variable had a positive effect on the dependent variable of prenatal care behaviors, so that the level of health literacy increased the level of prenatal care behaviors around 1.20 times. The variables of insurance status, age, education, occupation and income did not affect the prenatal care behaviors. Prenatal care behaviors are presented in two ways, with code (0) means average and code (1) representing good. The area under the curve of the ROC chart was (0.795-0.895) with a 95% confidence interval. The Hosmer-Lemeshow goodness-of-fit test was 808.0 (Table 3).

Table 3.Results of Logistic regression analysis of predicting factors for prenatal care behaviors in primigravida Women referring to urban health centers of Balochistan region in 2017

Model Variables	Standardized regression coefficient	Significance level	Upper bound	Lower bound
Health Literacy	1/02	0/004	1/05	1/02
Insurance	0/94	0/884	1/18	0/39
Age	1/02	0/275	1/07	0/96
Education		0/380		
Education (1)	1/39	0/485	1/31	0/88
Education (2)	0/84	0/738	1/25	0/78
Education (3)	1/74	0/253	1/43	0/98
Occupation	0/46	0/253	1/21	0/67
Income		0/351		
Income(1)	1/23	0/712	2/04	0/97
Income(2)	0/48	0/501	1/18	0/84
Income(3)	1/57	0/750	3/04	0/69

Test Type: Logistic Regression

Discussion

The prenatal care status was poor for one third of pregnant women under this study. Another study by Izadirad et al. (18) in the Balochistan region on pregnant women also showed that 46% of pregnant women are prone to poor level of prenatal care.

In line with the study on prenatal care in Zahedan by Zhianian et al., the results of this study showed that prenatal care is at a low level (6). It seems that due to the low level of health literacy, pregnant women did not have enough information on all prenatal care and the place of delivery, as well as their access to educational resources is too low in the Izadirad study (18). The results of this study showed that the level of health literacy in pregnant women of Balochistan is low. Other domestic studies also reported low health literacy in the urban community of Iran, especially women in the Balochistan region (19-21). Foreign studies have reported a low level of health literacy among pregnant women (22). The results of this study showed that the level of reading and analyzing dimensions were moderate among eligible participants, while dimensions of access to

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information, understanding and decision making were more than moderate. The results of various studies in different countries of the world have generally reported a wide range of inadequate health literacy. In a systematic review conducted by Paasche-Orlow et al., about 46% had a moderate and low level of health literacy (23). Based on the results of the study by Afshari et al., using the Iranians Health Literacy Questionnaire in Tuyserkan, 44.6% of the participants were moderate in accessing to information, 54.4% of participants were poor in understanding the information and 64.9% were moderate in Judging and analyzing. Also, 88.8% were moderate in using information (24). It seems that the reasons for low level of health literacy in pregnant women may be due to their low level of awareness, and inadequate educational resources, inappropriate information from the Internet and other virtual networks in which the accuracy of the information is not controlled, the lack of attention of health care personnel to the issue of health literacy (19-21), the traditional training, and the lack of implementation of health literacy promotion strategies (Feedback, using images and graphs and asking questions open) in health centers.

In this study, health literacy is the only variable which predicts prenatal care behaviors. In line with the results of this study, there was no relationship between prenatal care with age, maternal education, mother's occupation and place of residence in the study of Kharazi et al. (12), but There was a significant relationship between the mean of health literacy and the variables of the onset of prenatal care and the number of prenatal care services. In the Kimberly et al review (25), there was a significant relationship between prenatal care services and maternal health

literacy level, which was in agreement with the results of this study. Solhi also introduced the role of increasing maternal health literacy level in enhancing the coverage of prenatal care services (26). In the study of Mojoyinola, there was a significant relationship between the health literacy of pregnant mothers and prenatal care (13). In the study of Ashraf-Ganjoei et al., women with low level of health literacy started prenatal care much later and their intake was insufficient (27).

Many unsatisfactory health outcomes result in inadequate health literacy; as inadequate health literacy predicts fewer health behaviors, higher hospitalization rates, and poorer health status (28). However, the study results conducted by Sajjadi et al. showed that there is no relationship between the level of health literacy and self-care during pregnancy (14). It seems that the reason for the lack of meaningful relationship in Sajjadi et al study is offering prenatal care home-to-home by Health Volunteers. Home-to-home care has prevented health literacy from selectively, and all women received care relatively equal. However, in this study pregnant women referred to health centers for prenatal care and Home-to-home care services was not presented by Health Volunteers. It seems that the level of maternal health literacy can be effective in prenatal care quality and demands. Also, the difference in the type of questionnaire (the adult functional health literacy questionnaire in Sajjadi et al., Compared to the HELIA questionnaire in this study) may be one of the causes of the difference in results.

In line with the results of this study, recent research has shown that health literacy is a better predicting than education, socioeconomic status, occupation, race or

gender for health condition (29). It seems that this present study does not predict the prenatal care behaviors because of the inaccessibility to related educational resources and the provision of inadequate and disproportionate education by health care personnel. Despite the fact that in many studies, significant statistical relationship with prenatal care behaviors were approved (2, 12). Due to the fact that the majority of pregnant women were housewives with poor income, jobs and income were significant predictor of prenatal care behaviors.

Regarding the vital role of health literacy in health education and health promotion and as a means to improve health outcomes and reducing inequity in health, addressing the issue of health literacy and efforts to raise the level of health literacy in the community is indispensable [12]. To increase the maternal health literacy level, special attention should be paid to training the health system staff. Also, the emphasis on health literacy strategies is suggested as well as following strategies recommended: strengthening staff communication with mothers, reviewing high dependence on written materials and using images and graphs, the provision of open questions to assess the understanding of pregnant women and correcting if necessary, using the midwife and native health expert who are familiar with the cultural and social characteristics of pregnant women, and getting full support through collaboration with other society sections, such as: mass media and Ministry of Education, in order to design comprehensive plans for upgrading the health literacy level of pregnant mothers.

One of the limitations of this research is collecting information through self-reporting questionnaire. In addition, the cross-sectional nature of this study is one of the other limitations. It is suggested that interventional studies should be designed to determine the causal relationships between health literacy and prenatal care behaviors. Also, reviewing the skill effects, cultural backgrounds of pregnant mothers and the characteristics and skills of the health system staff on prenatal care behaviors is suggested in future studies.

The strengths of this study was extracting some of prenatal cares (supplementations use, number of visits and care received, vaccination) from the maternal care case, and the use of HELIA's questionnaire with more measuring capability (reading, access, understanding analyzing and decision making skills and application of health information) according to the cultural and social characteristics of the target group compared to other health literacy tools.

Conclusion

The results of this study indicate the predicting power of health literacy on prenatal care behaviors. Therefore, educational intervention based on health literacy enhancement strategies in pregnant women is recommended to improve prenatal care.

Acknowledgement

References

1. Roozbeh N, Nahidi F, Hajiyan S. Barriers related to prenatal care utilization among women. Saudi Med J 2016; 37(12): 1319–1327.

2. Bostani Khalesi Z, Rafat F, Pakseresht S. Relationship between adequacy of prenatal care utilization index and neonatal outcomes. J Holist Nurs 2015; 25(76): 8-15.

3. Centers for Disease Control and Prevention. Core State Preconception Health Indicators Pregnancy Risk Assessment Monitoring System and Behavioral Risk Factor Surveillance System, 2009. Morb Mortal Wkly Rep 2014; 63(3): 1-62.

4. Kim J, Chagarlamudi H, Patil S, Bray E. Gestational Weight Gain and Pregnancy Risk Factors among Low Income women. The FASEB Journal 2017; 31(1): 789-97.

5. Jabbari-Beyrami H, Alizadeh M, Bakhshian F, Khanlarzadeh E, Heidari F, Khamnian Zh. Adequacy of prenatal care and its association with pregnancy outcomes: A comparison of indices in Tabriz, Iran. J Anal Res Clin MED 2015; 3(1): 12-6.

6. Zhianian A, Zareban I, Ansari-Moghaddam A, Rahimi S. Improving Self-care Behaviors in Pregnant Women in Zahedan: Applying Self-efficacy Theory. Caspian J Intern Med 2015; 1(1): 18-26.

7. ShamshiriMilani H, Khazaie F, Rassouli M, Ramezankhani A. Explanation of women's and family health care personnel's perception of the barriers of pre-pregnancy care coverage: a qualitative study. Journal of Health in the Field 2016; 4(3): 18-27.

8. Pandey S, Karki S. Socio-economic and Demographic Determinants of Antenatal Care Services Utilization in Central Nepal. IJMA 2014; 2 (2): 212-19.

9. Jody RL, Henrietta OD, Carol JB,Tanima B, Richard MK. Improving health literacy through group antenatal care: a prospective cohort study. BMC Pregnancy and Childbirth 2017; 17 (228): 1-9.

10. World Health Organization. Health promotion glossary. Geneva [Switzerland]: World Health Organization; 1998. Available at: http://www.who.int/healthpromotion/about/HPG/en/.Accessed May 6, 2016

11. Kharazi SS, Peyman N, Esmaily H. An Evaluation of the Validity and Reliability of the Maternal Health Literacy and Pregnancy Outcome Questionnaire. J Health Syst Res 2017; 12(4): 512-9.

12. Kharazi SS, Peyman N, Esmaily H. Association between maternal health literacy level with pregnancy care and its outcomes. IJOGI 2016; 19(37): 40-50.

13. Mojoyinola JK. Influence of Maternal Health Literacy on Healthy Pregnancy and Pregnancy Outcomes of Women Attending Public Hospitals in Ibadan, Oyo State, Nigeria. AFRREV 2011; 5(3): 28-39.

14. Sajjadi H, Hosseinpour N, Sharifian Sani M, Mahmoodi Z. Association between Health Literacy and Life Style in Married Rural Women in Izeh, Iran. Journal of Health 2016; 7(4): 479- 89.

15. Safari –Moradabadi A, Aghamolaei T, Ramezankhani A, Dadipoor S. The Health Literacy of Pregnant Women in Bandar Abbas, Iran. J Sch Public Health Inst Public Health Res 2017; 15 (2): 121-32.

16. Montazeri A, Tavousi M, Rakhshani F, Azin SA, Jahangiri K, Ebadi M, et al. Health Literacy for Iranian Adults (HELIA): develoment and psychometric properties. Payesh 2014; 13(5): 589-600.

17. Zareban I, Izadirad H, Araban M. Psychometric evaluation of health literacy for adults (HELIA) in urban area of Balochistan. Payesh 2016; 15)6): 669-76.

18. Izadirad H, Niknami Sh, Zareban I, Hidarnia AR. Investigating Women's Pregnancy Care Behaviors Based on the Health Belief Model and Social Support Patterns in Pregnant Women Referring to Health Centers Covered. PCNM 2017; 7(1): 59-66.

19. Izadirad H, Zareban I. The Relationship of Health Literacy with Health status, Preventive Behaviors and Health services Utilization in Baluchistan, Iran. J Educ Community Health 2015; 2(3): 43-50.

20. Zareban I, Izadirad H, jadgal K. Evaluation of health literacy, health status and health services utilization in women in Baluchistan region of Iran. Jhl 2016; 1(2): 71-82.

21. Amiresmaili M, Nekoei Moghadam M, Saberi anari SH, Sadeghi A, Saber M,Taheri G, et al. Study of health literacy level of women referring to health centers-2010. J North Khorasan Univ Med Sci 2013; 5(3): 1071-8.

22. Jacqueline MH, Jessica YL, Kimon D, Diane B, William F, Vann J. Oral health literacy and knowledge among patients who are pregnant for the first time. JADA 2012; 143(9): 972-80.

23. Paasche-Orlow MK, Parker RM, Gazmararian JA, Nielsen-Bohlman LT, Rudd RR. The preva-lence of limited health literacy. J Gen Intern Med 2005; 20(2): 175-84.

24. Afshari M, Khazaei S, Bahrami M, Merati H. Investigating Adult Health Literacy in Tuyserkan City. JECH 2014; 1(2): 48-55.

25. Kimberly AK, Michelle VB, Rachel O, Stacy CB. Health Literacy and Women's Reproductive Health: A Systematic Review. J Womens Health 2016; 25(12): 1237–55.

26. Solhi M, Abbasi K, Ebadi Fard Azar F, Hosseini A. Effect of Health Literacy Education on Self-Care in Pregnant Women: A Randomized Controlled Clinical Trial. IJCBNM 2019;7(1):2-12.

27. Ashraf-Ganjoei T, Mirzaei F, Anari-Dokht F. Relationship between prenatal care and the outcome of pregnancy in low-risk pregnancies. Open J Obstet Gynecol 2011; 1(3): 109-12.

28. Panahi R, Ramezankhani A, Tavousi M, Osmani F, Ghazanfari E, Niknami Sh. Evaluation of Health Literacy and its Influencing Factors on Dormitory Students of Shahid Beheshti University of Medical Sciences in Tehran. JECH 2016; 3(3): 30-6

29. Panahi R, Ramezankhani A, Tavousi M, Koosehloo A, Niknami Sh. Relationship of Health Literacy with Knowledge and Attitude toward the Harms of Cigarette Smoking among University Students. J Educ Community Health 2016;3(4): 38-44.