

Related factors to choose normal vaginal delivery by mothers based on Health Belief Model

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ABSTRACT

Background: Normal vaginal delivery (NVD) is the best method of delivery, but its rate is decreasing. Results of many studies have shown that the risk of cesarean section (CS) for both mother and child is more than that of NVD. The World Health Organization's (WHO) goal was to achieve a CS rate of 15% in 2010, but this rate in most of the developing countries is over than 50%. In this study, we try to determine the related factors influencing the method of delivery selection by mothers in Yazd city, Iran, based on Health Belief Model (HBM). **Materials and Methods:** This was a cross-sectional study done on 130 pregnant women who presented in four clinics of Yazd. The mothers were in 32–37 weeks of gestational age. Samples were selected by simple randomized method. Data were collected by questionnaire by interviewing and then analyzed by analysis of variance (ANOVA) and *t*-test. **Results:** Mean age of samples was 42.23 ± 4.52 years. Eighty-four (64%) women were primigravids and 49 (37.7%) mothers were multigravids. Of them, the method of delivery in previous pregnancy was NVD in 29 (22.3%) and CS in 20 (14.3%). In their present pregnancy, the method of delivery was NVD in 88 (67.7%) and CS in 42 (32.3%). The Pearson test showed a significant correlation between perceived barriers and behavior ($P=0.012$). Also, there was significant relationship between perceived susceptibility and behavior ($P=0.03$). There was no significant relation between other variables (perceived benefits and perceived severity). **Conclusion:** Based on the results of this study, perceived susceptibility and perceived barriers were related to behavior significantly, so we must educate mothers using HBM to influence their behavior toward selecting NVD as their delivery method.

Key words: Cesarean section, health belief model, normal vaginal delivery

INTRODUCTION

Normal vaginal delivery (NVD) is the best way of delivery

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most of the times. But unfortunately, because of increased cesarean section (CS), its rate is decreasing.^[1] Of course, NVD has some contraindications like cephalo-pelvic disproportion (due to maternal or fetal problems), abnormal presentations of fetus, late or variable decelerations, sever hemorrhage, sever preeclampsia, and non-progression of delivery. But this situation only constitutes 10–15% of all deliveries; 85–90% of the deliveries can be done naturally by NVD.^[2]

CS has more complications such as endometritis, fever, wound infection, abdominal infections, bleeding, anesthesia-related complications, injuries to ureter during surgery, emboli, and increased mortality, and also it is expensive.^[3,4] Because of lack of knowledge about these complications, the tendency to do CS is increasing. With education and increasing the knowledge of families about these complications and thus preventing

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unnecessary elective CS, we can increase the rate of NVDs and improve the level of mothers' and children's health.^[5]

Unfortunately, today, the rate of CS is more than 15% in most of the countries; somehow, in the western countries, till 1998, the rate of CSs was 25% which became 21% in 2000. The rate of CS in developing countries is higher than this. In Iran, based on the latest reports, in 2007, the CS section showed a rate of 43.3%.^[6] this data shows there is difficult to reach the goal of WHO till 2010.^[7] Mortality rate due to CS is 2–3 times more and morbidity is 5–10 times more than those due to NVD.

Data show that wound infection is 4.7% in elective CS and 24.2% for emergence CS.^[8] Elliot reported that first minute APGAR in CS delivery children is lower than that in the children delivered by NVD.^[9] Also, transient tachypnea is higher in newborn delivered by CS by 4.5 times in contrast with that in newborn delivered by NVD.^[10]

One of the most important reasons for CS deliveries is request by the mothers.^[11] The data of some studies showed that a high percentage of CS were without medical indications and unnecessary.^[12]

Among the several behavior-directed models, Health Belief Model (HBM) can specify the perception of a person about the intensity of complications of unhealthy behaviors (perceived severity), perception of the capacity to catch disease and its complications (perceived severity), and determining the benefits of having healthy behavior in the patient's opinion (perceived benefit) and barriers (perceived barriers) that can influence healthy behavior. Determining these issues can help health researchers to assess the future behavior of a person. This model is based on Psychological and Behavior theory.^[13] HBM focuses on prevention of occurrence of diseases and is one of the most précised and important instruction that can show the relationship between health-related beliefs and behavior^[14] [Figure 1].

MATERIALS AND METHODS

In this cross-sectional study, we chose 130 pregnant women in 32–37 weeks of gestational age. Four governmental clinics in Yazd city, Iran, were chosen, and in every clinic, the case was extracted by simple randomized sampling.

Data were collected by a questionnaire that contained 63 questions which were categorized in four sections. The questionnaire included: 11 demographic questions (first part), 2 behavior-related questions (second part), 23 questions about knowledge (third part), and the fourth part contained questions about the variables of HBM [perceived susceptibility, benefits, and barriers (5 questions each), perceived severity 7 questions, and guide for action 5 questions].

Some of the knowledge questions had four choices and some had three (right, false, I don't know) and the level of

knowledge was evaluated by counting the right choices. Each question had only one right answer and the range of scores in the knowledge part was from 0 to 23, which was categorized into three parts: Weak knowledge (score between 0 and 7), moderate knowledge (score between 8 and 14), and good knowledge (score between 15 and 23).

Questions about perceived susceptibility, barriers, benefits, and severity were categorized using 5-part Likert criteria between 1 and 5, and the range of scores for perceived susceptibility, barriers, and benefits was 5–24, for perceived severity the range was 7–35, and the guide scores were between 0 and 5.

Reliability of questionnaire was confirmed in a pilot study in the same community and alpha chronbach for different sections of questionnaire calculated 0.7–0.8. For determining the validity of the questionnaire, the opinion of the health educators and gynecologists of our university was used.

All data were transferred to SPSS software and analyzed by analysis of variance (ANOVA), Tukey's, and *t*-test. The level of significance was $P < 0.05$.

RESULTS

We studied 130 pregnant women presenting at four clinics in Yazd city, Iran. The mean age of cases was 24.3 ± 4.52 years, ranging between 16 and 38 years. Eighty-one women (63.3%) were primigravids and 49 (37.7%) were multigravids. Of them, 29 (22.3%) had NVD and 20 (14.3%) had CS in their previous deliveries. In their present pregnancy, follow-up of patients revealed that 88 (67.7%) women delivered by NVD and 42 (32.2) by CS. 98.8% of the patients were housewives and only 1.5% were workers. 16.9% had academic degrees, 46.2% were graduates from high school, and 36.9% had primary and guidance school education. Among their spouses, 13.2% had academic degrees, 43.8% had graduated from high school, and 43% had primary and guidance school education.

Mean knowledge scores of mothers in delivery methods was 11.31 ± 2.98 a parenthesis [Table 1]. Knowledge of 15 (11.5%) women was weak, 101 (77.7%) women was moderate, and 14 (10.8%) women was good. Mean scores of knowledge did not show significant relationship with the level of education, the working status of women, and their husbands' education level. Also, there was no significant relationship between the knowledge scores in NVD preferred women and in those who had chosen CS. 63.3% of patients had no knowledge about the possibility of pain management during NVD.

There was no significant relationship of the mean scores of HBM variables (perceived severity, perceived susceptibility, perceived barriers, and perceived benefits) and behavior with mothers' ages in Pearson test. With regard to the variables related to working status of mothers and graduation of mothers and their husbands, there was no significant relationship in Tukey's test.

But in Pearson test, we found a significant relationship between the mean scores of perceived barriers and the mean scores of behavior ($P=0.012$). Also, relevance between the mean scores of perceived susceptibility and behavior was significant ($P=0.001$). Other variables (perceived benefits and perceived severity) had no significant relationship.

In *t*-test, we found a significant correlation between previous delivery method and behavior ($P=0.001$). We also discovered relevance between mean scores of perceived susceptibility ($P=0.001$) and perceived barriers ($P=0.03$) with the previous delivery method. Mean scores of perceived susceptibility in persons who had NVD in their previous pregnancies were

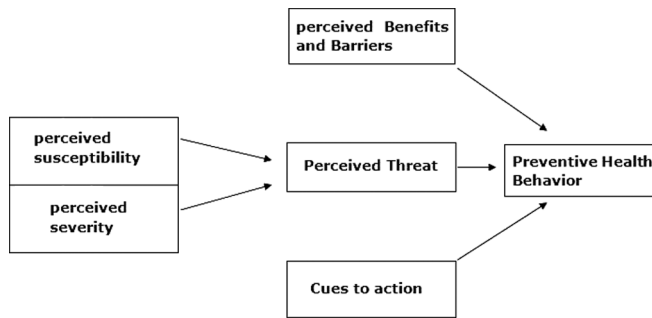


Figure 1: Health belief model

Table 1: Mean scores and SD for HBM variables and behavior of delivery method selection			
Variables	n	Mean	SD
Knowledge	130	11.31	2.98
Perceived susceptibility	130	15.21	2.64
Perceived severity	130	20.15	4.15
Perceived barriers	130	17.27	3.13
Perceived benefits	130	20	2.82
Behaviors	130	1.67	0.5

Table 2: Source of obtaining information by pregnant women about delivery methods' specifications		
Source of information	n	Percent
Physician	63	48.5
Health workers	45	34.6
Husband	38	29.2
Mother	55	42.3
Mass media	53	40.8
Friends and families	53	40.8

Table 3: Mean and SD for HBM variables and previous delivery method										
Methods of previous delivery	Primigravid			NVD			CS			P
	Variables	n	Mean	SD	n	Mean	SD	n	Mean	
Knowledge	81	11	3.15	29	11.75	2.48	20	11.95	2.85	>0.05
Perceived severity	81	20.5	4.21	29	19.82	4.09	20	19.2	3.98	>0.05
Perceived susceptibility	81	15.9	2.07	29	15.58	2.39	20	11.9	2.67	0.001
Perceived barriers	81	17.29	3.26	29	18.03	2.73	20	15.7	2.73	>0.05
Perceived benefits	81	20.19	4.07	29	19.45	2.48	20	19.6	2.18	0.001
Behaviors	81	1.76	0.45	29	1.89	0.3	20	1	0.32	0.001

higher and those of perceived barriers were lower than in primigravids or in those who had previous CS history [Table 2].

With regard to the rate and percentage of sources through which women got their information about delivery methods, 48.5% had gotten their information from their physicians, 42.3% from their mothers, 40.8% from media, 34.6% from health staffs, 29.9% from their husbands, and 40.8% from their relatives and friends [Table 3].

DISCUSSION

This study shows that 59% of multigravid mothers had delivered by NVD and 41% by CS in their previous pregnancy; in their present pregnancy, 67.7% of the mothers delivered by NVD and 32.3% by CS. This shows that the rate of CS had decreased. The data match with the surveys conducted in US which showed a decrease in CS rate from 25% in 1998 to 21% in 2000.^[9]

In our study, the NVD rate was more than that reported in another study performed in Shahrood (56.6% NVD and 43.4% CS).^[15] But in both the studies, the CS rates were more than the accepted international rates (20–22%).

In a study conducted in Tehran by Mohammadian *et al.*, the CS rate was reported as 66.5% that is not in accordance with our study result.^[16]

There was no significant relation between knowledge of women about the method of delivery (NVD or CS) and selection of the method; in fact, mothers who had chosen NVD did not have more knowledge compared with who had chosen CS. This data shows that some factor other than knowledge has an influence on the mother's attitude to delivery method selection. This result is similar to that reported in Amidi *et al.*'s study.^[17]

In our study, 10.8% of the women had good, 77.7% had moderate, and 11.5% had weak level of knowledge. In another similar study conducted in Tehran, the knowledge levels of good, moderate, and weak were 2.2%, 67.3%, and 30.5%, respectively, which are close to our results.^[18] Cleeton reported that 15.4% of his research participants had good knowledge about the benefits and defects of CS.^[19]

In the present study, we found significant correlation between

perceived susceptibility and behavior. This result is similar to the reports of Gielen^[20] and Marshal.^[21] In our study, perceived barriers and perceived severity had significant relationship with behavior; this also was confirmed by Champion^[22] and Marshal.^[21] We confirmed the results of Marshal^[21] that showed significant relationship between cues to action and behavior.

Physicians were the most important source for getting information (48.5%). This shows the key role of physicians in this issue and is in accordance with other reports.^[23] Husbands were less important source of obtaining information (29.9%). This shows the low level of their knowledge about pregnancy and the methods of delivery. More educational programs for husbands are needed and their role in relaxing their wives for having a successful NVD is important. The source of information of mothers about delivery methods was by non professional persons that can be the cause of low knowledge in our study. A study conducted by Melender showed that absence in classes of readiness for delivery in primigravid women was related to anxiety and scare of NVD, and resulted in request for CS.^[24] Therefore, it is necessary to spread education by midwives and other health staffs based on mothers' educational needs.

64.3% of our cases had no knowledge about the possibility of pain management in NVD, which shows the need for schematization and implementing educational programs aiming at this issue.

CONCLUSION

Based on the results of this study, it is concluded that perceived susceptibility and perceived barriers were related to behavior significantly. Therefore, health system policy makers must prepare educational programs based on HBM and using mothers' participation to decrease and manage complications and costs of delivery.

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