Original Article

Access this article online
Quick Response Code:

Website: www.jehp.net
DOI: 10.4103/jehp.jehp_503_19

The effect of motivational interviewing on attitude and practice about type of delivery in primigravid women requesting elective cesarean section referring to comprehensive health services centers

Mansour Shakiba, Maryam Navaee[1], Yassamin Hassanzei[1]

Abstract:

BACKGROUND: Negative attitudes toward vaginal delivery are an important reason for pregnant women to undergo a cesarean section. Therefore, this study was performed to evaluate the effect of motivational interviewing on attitude and choice of primigravida women on type of delivery in requesting elective cesarean section.

MATERIALS AND METHODS: In this single-blind clinical trial, 120 primigravida women in 28–31 weeks of gestation with normal pregnancy determined by a multistage sampling were randomly chosen from ten health centers of Zahedan city in 2019 and were divided into two groups. Motivational interviewing was performed in four sessions within 90 min in the experimental group, and the control group received routine care service. Attitude (before and 1 month after the intervention) and performance (after delivery) were evaluated using a valid and reliable researcher-made questionnaire. The collected data were analyzed using different proportions, paired *t*-test, independent *t*-test, covariance analysis, and Shapiro–Wilk and the Chi-square methods.

RESULTS: There was a significant difference in the attitude of participants between the two groups after the intervention ($P = 0.001$). The mean difference of pre- and posttest was significant in relation to attitude scores in the two groups ($P = 0.001$), and the difference between the two groups was also statistically significant between the two groups in terms of delivery type ($P = 0.03$).

CONCLUSION: We conclude that motivational interviewing can be a useful tool to change the attitude and decrease the rate of unnecessary cesarean among pregnant women. It is recommended to examine the impact of this method on women from different societies who have various educational backgrounds and cultures.

Keywords:

Attitude, cesarean section, motivational interviewing, vaginal delivery

Department of Psychiatry, School of Medicine, Zahedan University of Medical Sciences, [1]Department of Midwifery, Pregnancy Health Research Center, Zahedan University of Medical Sciences, Zahedan, Iran

Address for correspondence:
Ms. Maryam Navaee, Department of Midwifery, Pregnancy Health Research Center, Zahedan University of Medical Sciences, Mashahir Street, Zahedan, Iran.
E-mail: helennavaee@gmail.com

Received: 01-09-2019
Accepted: 17-10-2019
Published: 28-02-2020

Introduction

The delivery mechanism is a spontaneous, noninterventional process that has been performed with its natural course for many centuries[1] and is the preferred method of delivery. Cesarean section is warranted by conditions such as maternal pelvic stenosis or ovarian enlargement, abnormal position of fetus in the uterus, and the decrease or change of fetal heart rate, as well as circumstances presenting a serious risk to the mother and her fetus,[2] all of which can be a cause of 1%–5% of cesareans.

How to cite this article: Shakiba M, Navaee M, Hassanzei Y. The effect of motivational interviewing on attitude and practice about type of delivery in primigravid women requesting elective cesarean section referring to comprehensive health services centers. J Edu Health Promot 2020;9:37.

Approximately 1%–5% of deliveries can be performed without any medical intervention.[3] However, the incidence of cesarean section has substantially increased worldwide over the past decades. The rate of cesarean delivery in the United States has increased from 7.5% to 3% of all deliveries during 1970–2007.[4] In Iran, the cesarean section rate was 40.7% in 2005 and was estimated to account for 50%–65% of all deliveries in 2010, which is 3–4 times higher than the global average. In recent years, the average rate of cesarean section in some private hospitals in the country has been estimated to be around 90%.[5,6]

Cesarean section has several side effects for both mother and baby. The most important maternal complications include hemorrhage, suture site infection, and psychological problems. On the other hand, the fetus is at risk of respiratory problems, low Apgar score, and increasing neonatal death.[7] Two types of factors are involved in increasing rates of cesarean section, including cesarean section due to medical factors because of individual requests. Currently, about 5% of pregnant women in Iran prefer cesarean section for nonmedical reasons such as misconception and fear of labor pain.[8,9] The negative attitude toward vaginal delivery is a factor affecting the increasing rates of elective cesarean section. According to Sharifirad and Fathian, 70% of women have a negative attitude toward natural childbirth.[10] Attitude is, in fact, the inner view of an individual that presents as behavior with people, beliefs, viewpoints, and events. In the decision-making process, the attitude of the decision-maker plays a role in the assessment and interpretation of data, and education is effective if it leads to positive attitude change in women to choose the most appropriate, effective, and safe method for delivery.[11] Educating pregnant women to increase awareness and change attitudes about childbirth for maintaining and improving health of themselves and their fetus is among the services foreseen in prenatal care so that they choose the appropriate delivery method and not prefer cesarean section without due cause.[12] Researchers in Iran have been able to reduce the rate of cesarean delivery request by mothers using a variety of educational methods;[13] however, the high number of cesarean sections in the country as well as the effect of interventions to reduce the rate of cesarean section indicates the need for more serious measures.[14] On the other hand, the mother's satisfaction with delivery experience is largely dependent on her expectations and participation in choosing the type of delivery.[15] Undoubtedly, physicians' advice to mothers and relatives plays an important role in decreasing or increasing rate of cesarean section.[16] Despite the importance of women's participation in choosing the type of delivery, most studies show that women lack sufficient knowledge to make informed decisions about pregnancy care and delivery. Providing appropriate information and support can increase women's confidence in decision-making process.[17]

There are several educational methods for changing women's attitudes about the type of delivery.[18] For example, Ghazai *et al*. were able to reduce the fear rates of pain and childbirth through cognitive behavioral therapy, but the rate of delivery was not significantly different between the two groups of their research.[19] Yousefzadeh *et al*. also found that optimism training during pregnancy could lead to a positive attitude toward natural childbirth and decrease the rate of cesarean delivery from 43.8% to 15.6% (63). However, despite these educational interventions, we still observe unnecessary rates of cesarean section. Motivational interviewing is an approach to empower patients, which has been shown to cause positive changes in behavioral traits.[20] It is a client-centered, guided approach that focuses on discovering individuals' motivations to change behavior and resolve ambivalence. This approach focuses on helping individuals make a decision for the change instead of trying to affect patients' behavior by outside forces.[21] Motivational interviewing has been widely used in the field of health but with conflicting results.[22] For example, the results of a study by Naidu *et al*. showed that motivational interviewing changed the attitude of oral health practitioners and self-efficacy regarding fluoride intake as well as referral to the dentist of parents and preschool pediatric educators,[23] while the research by Walpole *et al*. indicated that motivational interviewing by itself did not have any effect on obese adolescents' weight loss and self-efficacy.[24] The findings of an investigation by Solomon *et al*. showed that motivational interviewing did not increase the commitment of osteoporosis patients to medication.[25] Rasouli *et al*. found that motivational interviewing increased awareness and motivation of pregnant women and changed their attitude to participate regularly in childbirth preparation classes.[26] Hence, it is reasonable to expect motivational interviewing alone to be effective for some clients and patients.[27]

Therefore, considering the high rate of unnecessary cesarean section and its risks for mother and infant and regarding the fact that no study has been conducted on the effectiveness of motivational interviewing on attitude and choice of delivery type in women undergoing elective cesarean section in Iran, we set out to investigate the effect of motivational interviewing on the attitude of primigravida women visiting general health-care centers on the type of delivery.

Materials and Methods

Design and participants

This study is a clinical trial conducted on 120 primigravida women referred to Zahedan Comprehensive Health

Services Centers in 2019 with IRCT20150727023370N5 IRCT ID. The sample size was 53 individuals in each group based on the cesarean section variable in the study of shahraki *et al*. (2014)[28] and the following formula. To ensure the adequacy of sample size and probable dropout, 60 individuals were assigned to each group and 120 individuals in total were examined.

$$52.3 = n = \frac{\left(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta}\right)\left[P_1(1-P_1) + P_2(1-P_2)\right]}{(P_1 - P_2)^2}$$

$Z_{1-\frac{\alpha}{2}} = 1.96$ $P_1 = 0.78$ $q_1 = 0.22$.

$Z_{1-\beta} = 0.85$ $P_2 = 0.96$ $q_2 = 0.04$.

Multistage sampling was performed in this research. First, Zahedan health centers were divided into five groups (clusters) including North, South, East, West, and Center, and then from each of the five aforementioned areas, two centers were randomly selected according to the required sample size. In the second cluster, again one center was selected as the intervention group and the other as the control group, with the names of Groups A (motivational interview) and B (control group) written on two sheets in one box, and the names of centers A and B were written on two other sheets and placed in another box. Then, by drawing lots, a sheet was selected from each box, the first selected center was assigned to the first group, and the remaining center in each cluster was assigned to the other group. Subsequently, after referring to each center and coordinating with the clinician, the samples were selected by simple random sampling from among the mothers satisfying inclusion criteria. To complete the research units in each cluster (5–10 persons in each group), the list of primigravida women was extracted by referring to maternal care registries or integrated health systems in maternal and child health units. The name and case number of primigravida women who were in weeks 28–3 of pregnancy were then recorded, their family or electronic files were checked, and the individuals were selected if they satisfied the primary inclusion criteria. The following question was asked from the participants in a phone call to assess their tendency for the type of delivery: "What kind of delivery would you prefer if there were no medical prohibition?" If the women preferred cesarean delivery, they were asked to attend training sessions in case they desired. Then, if the units in each group reached a minimum number, the research units would be contacted and asked to come to the health center on a specific day and hour to attend the motivational session. Inclusion criteria were as follows: 18–35 years of age, literacy, no midwifery indication for cesarean section, 28–31 weeks of gestation, singleton pregnancy, live fetus and cephalic presentation, normal amniotic fluid status and placenta position, specific maternal body mass index (BMI) range ($18.5 < BMI < 29$), lack of infertility history, absence of medical conditions such as cardiovascular disease, lack of natural delivery contraindication such as history of hip fracture, and tendency to elective cesarean section. Exclusion criteria included more than one case of absence in sessions, preterm labor, fetal death, and symptoms of fetal distress.

Data collection tools of this research included demographic information-pregnancy questionnaire, questionnaire of pregnant women's attitude toward delivery type, and decision-making information form before and 1 month after the intervention. Demographic-pregnancy information form had 16 questions such as age, work experience, education, income, spouse occupation, and fetus sex. The attitude questionnaire consisted of 22 questions with 5-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree). Scoring in questions 21, 19, 17, 15, 13, 11, 10, 7, 5, 4, and 2 was from 5 and strongly agree option to 1 and strongly disagree option, and in other questions, scoring was in an opposite manner from 5 and strongly disagree to 1 and strongly agree, with lowest and highest scores of 22 and 110, respectively. The closer the score to 110, the more positive attitude toward vaginal delivery and the closer to 0, the more positive attitude to cesarean section. The questionnaire was completed by the pregnant woman before and 1 month after the intervention. Content validity of this questionnaire was evaluated by Navaee *et al*. (2011), and its reliability was assessed and confirmed by split and clustering method, Cronbach's alpha coefficient for each half ($\alpha = 0.94$).[29] In the present study, the reliability of questionnaire was determined by internal consistency with Cronbach's alpha of 0.90. Another tool used in this study was the registration form of pregnant women (the type of delivery performed), which was inquired from the research units by telephone after delivery.

The participants of the intervention group were divided into small groups of 5–10 individuals. After referral and before completing the demographic-pregnancy questionnaire, an attitude questionnaire of pregnant women about preferred type of delivery was submitted to them and they were requested to answer all the questions. In this study, motivational interviewing was done by a postgraduate student in midwifery counseling who was trained by the research consultant (a PhD holder in counseling and guidance) who approved the intervention in the motivational interviewing group. Then, the intervention group underwent four 90-min sessions of motivational interviewing based on the prepared table of contents, and the control group received only routine prenatal care. The researchers also considered a strategy to encourage women in the

intervention group to continue research by presenting a booklet on childbirth preparation and relaxation as well as breathing exercise images to them. One month after the intervention, the same questionnaires were resubmitted to pregnant women of both the groups to be completed. It should be noted that one center of each cluster was randomly assigned to the intervention group and the other center to the control group to control the information dissemination among the research units.

In motivational interview group sessions, open-ended questions were asked followed by closed-ended ones to assess the current behavior of pregnant women as follows: What do you know about childbirth or would you like to learn about it? Have you ever tried to get information about childbirth or become ready for childbirth? If you have information about childbirth, what are some of its potential benefits? What makes you ready for childbirth? In addition, concerns, questions, awareness, and stages of behavior change in pregnant women were identified. Mothers were encouraged to set clear, attainable goals in preparation for childbirth. In addition, they were asked to declare their strategies for overcoming barriers of preparation for delivery and even talk about their previous successes (overcoming other barriers to pregnancy). The counselor helped pregnant women prepare for childbirth and express their concerns, hesitations, and concerns, as well as boosting women's inner motivation by making a positive relationship with them. Through empathy and self-efficacy, active listening and acceptance were created in women. A summary of the main issues was then discussed, including benefits of natural childbirth and cesarean section as well as relaxation techniques to reduce labor pain such as respiratory techniques and guided visualization. During the consultation, the counselor tried to find an incentive to change what the mothers thought about themselves. The interviewers always remembered to avoid interfering with previous prejudices, views, and knowledge about mothers' behavior. They also prevented the respondents from being questioned and marginalized as much as possible and encouraged pregnant women to give birth without imposition, coercion, personal reasoning, or direct persuasion.

The Ethics Committee of Zahedan University of Medical Sciences (Zahedan, Iran) approved this study (code No.: ir.zaums.rec.1397.294). Permissions for conducting the study were obtained from Zahedan Faculty of Nursing and Midwifery and presented to relevant authorities. The participants were briefed about the study objectives, voluntary participation, and withdrawal and were ensured of the confidentiality of their data. Moreover, we strived to protect participants' rights in the study according to the Declaration of Helsinki. Written informed consent was obtained from all the participants.

After collection and encoding, the data were analyzed by SPSS 16 software (SPSS Inc. Chicago, IL, USA). Kolmogorov–Smirnov test was used to review the normal distribution of data. Frequency, percentage, mean, and standard deviation were determined by descriptive statistics. Paired *t*-test was used to compare the means in each group, and an independent *t*-test was employed to compare the means of intervention and control groups as well as changes before and after the intervention. Chi-square test was used to compare the frequency of qualitative variables in the two groups, and covariance analysis determined the effectiveness of motivational counseling with simultaneous control of some confounding variables. The significance level in this study was set at 0.05.

Results

The results of Kolmogorov–Smirnov test illustrated that numerical variables had a normal distribution. One-hundred twenty pregnant candidate women for the cesarean section participated in this research. The mean age of women in intervention and control groups was 23.91 and 25.36 years, respectively. In terms of household income, the majority of intervention group (80%) and the control group (66.7%) had sufficient income. With regard to occupation, most research units were housewives in both the groups (86.7% of the intervention group versus 78.3% of control group). In view of the pregnancy type, the majority of the intervention group (93.3%) and control group (98.3%) had opted to become pregnant. There was no significant difference in demographic characteristics between the two groups ($P > 0.05$) [Table 1].

The results showed that the mean attitude score of pregnant women before the intervention in intervention and control groups was 60.16 ± 8.94 and 63.93 ± 10.03, respectively, which was 89.48 ± 8.82, 89.48 ± 8.82, and 62.68 ± 11.68 after the intervention and indicated a change. The mean change in attitude score of pregnant women in the intervention group was 20.31 ± 8.79 and was − 1.25 ± 9.38 in the control group, which was statistically significant ($P = 0.0001$). Independent *t*-test showed that the mean attitude score of pregnant women applying for elective cesarean section was significantly different between the intervention and control groups before ($P = 0.003$) and after ($P = 0.0001$) motivational interview. Paired *t*-test also indicated that the mean score of pregnant women in the intervention group in posttest was significantly different from the pretest ($P = 0.0001$) [Table 2].

The results of covariance analysis to control for the significant effect of pretest scores showed that the mean attitude score of pregnant women applying for elective

Table 1: Between-group comparisons regarding participants' demographic characteristics

Characteristics	Group		*P*
	Control, *n* (%)	Intervention, *n* (%)	
Household income			
Less than adequate	20 (33.3)	12 (20)	0.09*
At a sufficient level	40 (66.7)	48 (80)	
Total	60 (100)	60 (100)	
Job			
Employed	47 (78.3)	52 (86.7)	0.23*
Housewife	13 (21.7)	8 (13.3)	
Total	60 (100)	60 (100)	
In terms of pregnancy type			
Wanted	59 (98.3)	1 (1.7)	0.36**
Unwanted	56 (93.3)	4 (6.7)	
Total	60 (100)	60 (100)	
The most important person in decision-making			
Doctor	23 (38.3)	14 (23.3)	0.31*
Husband	19 (31.7)	24 (40)	
Mother	10 (16.7)	10 (16.7)	
Others	8 (13.3)	12 (20)	
Total	60 (100)	60 (100)	
Age	25.36±4.89	23.91±4.46	0.09***

*The results of the Chi-square test, **Fisher's exact test, ***The results of the independent-sample *t*-test

Table 2: Comparison of mean and standard deviation of attitude in pregnant women applying for elective cesarean section before and after motivational interview in intervention and control groups

Group	Time, mean±SD		Changes, mean±SD	Paired *t*-test (*t*, df, *P*)
	Before intervention	After intervention		
Intervention	60.16±8.94	89.48±8.82	20.31±8.79	17.9, 59, 0.0001
Control	63.93±10.03	62.68±11.68	−2.68±11.6	1.04, 59, 0.3
T-test (*t*, df, *P*)	3.01, 118, 0.003	14.18, 118, 0.0001	13.06, 118, 0.0001	

SD=Standard deviation

Table 3: Covariance analysis results of attitude score in pregnant women applying for elective cesarean section after a motivational interview with pretest effect control

Change sources	SS	Df	MS	*F*	Significant	Effect size	Test power
Pretest	4374.17	1	4374.17	61.88	0.0001	0.34	1
Group	15312.88	1	15312.88	216.64	0.0001	0.64	1
Errors	8269.79	117	70.68				
Total	728,832	120					

SS=Sum of square, MS=Mean of square

Table 4: Frequency distribution of pregnant women applying for elective cesarean section according to the delivery method in intervention and control groups

Refer	Group		Chi-square test results (χ^2, df, *P*)
	Control, *n* (%)	Intervention, *n* (%)	
Cesarean section	27 (45)	16 (26.7)	4.38, 1, 0.03
Natural	33 (55)	44 (73.3)	
Total	60 (100)	60 (100)	

cesarean section after the intervention was statistically significant ($P = 0.0001$), which means that motivational interviewing in the intervention group could change the mean score of pregnant women underdoing elective cesarean section [Table 3].

According to Table 4, 26.7% of the pregnant women were subjected to the elective cesarean section in the intervention group and 45% of the control group underwent a cesarean section. The results of Chi-square test showed that the two groups were significantly different in terms of delivery ($P = 0.03$).

Discussion

This study aimed to determine the effect of motivational interviewing on attitude and practice of primigravida women referring to comprehensive health centers of Zahedan about requesting elective cesarean sections to deliver their babies.

The findings of this study showed that motivational interviewing can change the mean score of pregnant women applying for the elective cesarean section which was in agreement with the study of shahraki *et al*.[28] The findings of Shahraki *et al*. investigation entitled "Effect of Training on Theory of Programmed Behavior Concerning Type of Pregnancy" showed a significant difference in the attitude scores of the intervention and control groups after the intervention. However, the effect of the present study in improvement of attitude among primigravida women was higher than Shahraki's study. In the intervention group of Shahraki's study, the mean score change was 2.8, which was 20.31 in our research. The sampling place was different between our study with that of Shahraki *et al*., which was health centers in this study and thus included people of different cultural, economic, and social levels, while in Shahraki *et al*., sampling was done in the office of specialists.

Another difference was in the sampling method, which was probabilistic and completely random in the present study, while it was not probabilistic in Shahraki's research. Other differences include questionnaire type, number of pregnancies, and training sessions. There were four 90-min sessions in our study, while in the study of Shahraki, women were provided with educational booklets before the training session, which was followed by the 60-min training session. One of the similarities between the two studies is that both were conducted in the city of Zahedan.

The results of a study by Rasouli *et al*. entitled "Impact of Motivational Interview on Attitude of Pregnant Women to Participate in Delivery Preparation Classes" were also consistent with ours[26] and indicated a significant difference in mean scores of the two groups after the intervention. However, the effect of the present study on attitude change of pregnant women was greater than Rasouli's study (33.75% vs. 17.05%). One of the possible reasons for this difference is the culture of the community in the two studies because Rasouli *et al*. conducted a study in Northern Iran, and the present study was performed in Southeastern Iran. Other differences include gestational age (in Rasouli study: 16–19 weeks), number of sessions (Rasouli study: two 120-min sessions), type of questionnaire, and use of educational booklet (in Rasouli study).

Nevertheless, the findings of the present study were not consistent with Gingrich entitled "Impact of Motivational Interviewing in Improved Attitude toward Sports."[30] Possible reasons for this difference are the age and location of research units. The age of study units in the mentioned research was 18–24 years old; they studied in college and were not so much concerned about their health and that of their fetuses as our study units. On the other hand, the duration of training in Gingrich study was short so that the training was conducted in three 10–20-min sessions. In addition, according to Gingrich, posttest should be performed in a longer period than pretest to assess attitude change.

The findings of the present study on the attitude variable were consistent with some other studies. In an investigation by Amidi and Akbarzadeh[13] and Besharati *et al*.,[31] the mean score of attitude was increased after the study. However, although in the study of Toughyani *et al*., education significantly increased the knowledge and performance of the individuals, it did not affect attitudes, which may be due to the different contents of education in the present research with other studies.[32] In the present investigation, educational sessions were conducted with an emphasis on pregnant women's attitude, which could be a reason for the significance of attitude score in this study.

In terms of performance variable, 77.3% of the pregnant women of our research in the intervention group and 55% in the control group delivered in the normal way, and the two groups were significantly different in terms of delivery type (P = 0.03). Numerous studies using different educational methods have revealed the effect of education on promoting normal vaginal delivery in pregnant women. For instance, the study by Kazemzadeh *et al*. showed that training health workers and providing trainings to mothers in health centers reduced the rate of elective cesarean delivery during the project. In the above-mentioned research, the elective cesarean section in pregnant women decreased by 50% in the intervention group compared to the untrained group.[33] Shahraki's investigation also showed that 22% and 4% of the women in the intervention (education based on the theory of planned behavior) and control groups had normal delivery, respectively, and the difference was statistically significant.[26] Moreover, the results of this study were in agreement with the findings of Saisto *et al*.[34] but not with Ghaffari *et al*.[35] and Navaee *et al*.[36] The advantages of our investigation over other studies were that all research units were primigravida women, the study was conducted on elective cesarean section candidates, and motivational interviewing had a more prominent effect on attitude and thereby the type of delivery.

In terms of performance, DiIorio *et al*. have shown that motivational interviewing techniques could improve adherence to treatment regimens.[37] Wilhelm *et al*. found that the counseling approach was helpful in increasing the mean number of days that infants were breastfed.[38]

According to the World Health Organization, the current incidence of cesarean section in Iran is 50%–60%,[6] which is far higher than the acceptable incidence rate of 15%.

Similar to many other countries, the rising rate of cesarean section is a fundamental problem in Iran.[39] Fortunately, the present study managed to reduce the frequency of elective cesarean sections by positively changing attitudes. Motivational interviewing is a client-centered approach focusing on fostering the intrinsic motivation of individuals for change, which can increase awareness and improve the attitudes of women who are about to give birth by detecting worries, cares, and informational needs. Adoption of the right decisions in families about issues related to reproductive health requires sufficient knowledge and correct insight, which cannot be achieved without counseling.[26] By strengthening intrinsic motives, motivational interviewing corrects misconceptions, eliminates uncertainties of individuals, and directs them toward choosing a safe method of delivery.

Limitation

Findings of the study can only be extrapolated on urban women who attend antenatal services, and there is a possibility of recall bias among the study participants. Different findings may be observed if the study is conducted in other places due to different cultural practices, norms, and beliefs.

The most important limitation of the present research was the lack of participation of spouses and other people who could be effective in choosing the delivery method such as specialists and service providers. In future studies, it is suggested that the impact of motivational interviewing on spouses and other people involved in choosing the type of delivery for pregnant women to be investigated. Further studies of motivational interviewing to change attitudes of multiparous women and women with a history of cesarean section can also be conducted.

Conclusion

The current study concluded that motivational interviewing demonstrates hopeful results as an approach to increase positive attitudes toward vaginal delivery and reduce the choice of cesarean delivery. Moreover, good cooperation between pregnant women and health team members has an impact on patients' motivation to prefer vaginal delivery. It is recommended to examine the impact of this method on women from different societies with various educational backgrounds and cultures.

Acknowledgment

This article is a part of a master's thesis in obstetric counseling at the Faculty of Nursing and Midwifery of Zahedan University of Medical Sciences, which was confirmed by the 8963 Code of Ethics at Zahedan University of Medical Sciences. The authors would like to express their gratitude and appreciation to all the participating in the study as well as to the midwives working in health-care centers and pregnant women in the city of Zahedan.

Financial support and sponsorship

The Research Deputy on Zahedan University of Medical Sciences supported this study.

Conflicts of interest

There are no conflicts of interest.

References

1. Sharifirad GR, Fathian Z, Tirani M, Mahaki B. Study on behavioral intention model (BIM) to the attitude of pregnant women toward normal delivery and cesarean section in province of Esfahan-Khomeiny Shahr-1385. Journal of Ilam University of Medical Sciences. 2007: 15 (1): 19-23
2. Garmaroudi G, Eftekhar H, Batebi A. Factors that affect cesarean among pregnant women. Payesh J 2002;1:45-9.
3. Afshari A, Ghafari M. A survey on selection of delivery method by nulliparous pregnant women using health belief model in Semirom, Iran, 2012. Iran J Obstet Gynecol Infertil 2013;16:22-9.
4. Shakeri M, Mazloumzade S, Mohamaian F. Factors affecting the rate of cesarean section in Zanjan maternity hospitals in 2008. ZUMS J 2012;20:98-104.
5. Badakhsh MH, Seifoddin M, Khodakarami N, Gholami R, Moghimi S. Rise in cesarean section rate over a 30-year period in a public hospital in Tehran, Iran. Arch Iran Med 2012;15:4-7.
6. Azami-Aghdash S, Ghojazadeh M, Dehdilani N, Mohammadi M, Asl Amin Abad R. Prevalence and causes of cesarean section in Iran: Systematic review and meta-analysis. Iran J Public Health 2014;43:545-55.
7. Darvishi E, Mortazavi S, Nedjat S, Naieni KH. Experiences of women and gynecologists on the choice of delivery method: A qualitative research. J Health Syst Res 2012;8:59-68.
8. Bahonar A, Shaebani A, Aghajani M. Determinants of cesarean and its trend in Damghan, Iran. Iran J Epidemiol 2010;6 (1):33-8.
9. Macones G. Clinical outcomes in VBAC attempts: What to say to patients? Obstet Anesth Dig 2009;29:9-10.
10. Sharifirad G, Fathian Z. Survey of pregnant women view than vaginal and cesarean delivery based on behavioral intention model. J Illam Univ Med Sci 2007;1:19-23.
11. Etghaee M, Noohi A, Khajepoor M. Investigating the attitude towards labor pain and choose the mode of delivery in pregnant women referred to health care centers in Kerman. J Nurs Midwifery Kerman 2009;41:10-36.
12. Fisher C, Hauck Y, Fenwick J. How social context impacts on women's fears of childbirth: A Western Australian example. Soc Sci Med 2006;63:64-75.
13. Amidi M, Akbarzadeh K. The effects of health education on pregnant woman's knowledge and attitude on cesarean section. J Ilam Univ Med Sci 2005;13:17-25.
14. Fathian Z, Sharifirad GR, Hasanzadeh A, Fathian Z. Study of the effects of behavioral intention model education on reducing the cesarean rate among pregnant women of Khomeiny-Shahr, Isfahan, in 2006. Zahedan Journal of Research In Medical Sciences (Tabib-E-Shargh): 2007: 9 (2):123-131.
15. Bani S, Rasouli AS, Shams TG, Ghoojazadeh M, Poor SH. Preferrenced perpetrators of delivery about their delivery and type of delivery offered to pregnant women. J Nurs Midwifery Tabriz 2012;5:629-35.

16. Bagheri A, Masudi N, Zade FA. Determine factors of influencing choice of delivery by pregnant women in Kashan city. J Sci Res Faiz 2011;2:146-53.
17. Gee RE, Corry MP. Patient engagement and shared decision making in maternity care. Obstet Gynecol 2012;120:995-7.
18. Escott D, Slade P, Spiby H. Preparation for pain management during childbirth: The psychological aspects of coping strategy development in antenatal education. Clin Psychol Rev 2009;29:617-22.
19. Ghazaie M, Davoodi I, Neysi A, Honarmand MM, Nejad SB. The effectiveness of cognitive-behavioral therapy on fear of childbirth, fear of pain, self-efficacy of childbirth and tendency to caesarean in nulliparous women. Iran J Obstet Gynecol Infertil 2016;19:1-12.
20. Rollnick S, Miller WR, Butler CC, Aloia MS. Motivational Interviewing in Health Care: Helping Patients Change Behavior. Vol 5.: Taylor and Francis; 2008. p. 203.
21. Rollnick S. Motivational Interviewing: Preparing People for Change. English: 2nd ed. New York: Guilford Press; 2002.
22. Martins RK, McNeil DW. Review of motivational interviewing in promoting health behaviors. Clin Psychol Rev 2009;29:283-93.
23. Naidu R, Nunn J, Irwin JD. The effect of motivational interviewing on oral healthcare knowledge, attitudes and behaviour of parents and caregivers of preschool children: An exploratory cluster randomised controlled study. BMC Oral Health 2015;15:101.
24. Walpole B, Dettmer E, Morrongiello BA, McCrindle BW, Hamilton J. Motivational interviewing to enhance self-efficacy and promote weight loss in overweight and obese adolescents: A randomized controlled trial. J Pediatr Psychol 2013;38:944-53.
25. Solomon DH, Iversen MD, Avorn J, Gleeson T, Brookhart MA, Patrick AR, *et al*. Osteoporosis telephonic intervention to improve medication regimen adherence: A large, pragmatic, randomized controlled trial. Arch Intern Med 2012;172:477-83.
26. Rasouli M, Sokhan GA, Keramat A, Khosravi A, Fooladi E, Mousavi SA. The impact of motivational interviewing on participation in childbirth preparation classes and having a natural delivery: A randomised trial. BJOG 2017;124:631-9.
27. Ghasemi H, Heidary H, Ghasemi N, Dehghani S. The evaluation of the effectiveness of motivational interviewing on lifestyle changes in female addicts under way for recovery. Res Addict 2015;8:25-34.
28. Sanavi FS, Navidian A, Rakhshani F, Ansari-Moghaddam A. The effect of education on base the theory of planned behavior toward normal delivery in pregnant women with intention elective cesarean. Bimonthly J Hormozgan Univ Med Sci 2014;17:531-9.
29. Abedian Z, Navaee M, Sani HJ, Arani A, Ebrahimzadeh S. Comparing the effect of two teaching methods, role playing and lecture on Primigravida women's knowledge, attitude and performance according to delivery mode. Iran J Obstet Gynecol Infertil 2012;15:26-34.
30. Gingrich AM. Effects of Motivational Interviewing on Improving Attitude toward Exercise in College Students; 2008.
31. Besharati F, Hazavehei S, Moeini B, Moghimbeigi A. Effect of educational interventions based on theory of planned behavior (TPB) in selecting delivery mode among pregnant women referred to Rasht health centers. ZUMS 2011;19:94-106.
32. Toughyani R, Ramezani MA, Izadi M, Shahidi S, Aghdak P, Motie Z, *et al*. The effect of prenatal care group education on pregnant mothers' knowledge, attitude and practice. Iran J Med Educ 2008;7:317-24.
33. Kazemzadeh M, Pouralajal J, Ghazanfarzadeh B, Ghahramani M. Promotion of safe labor through training healthcare workers and pregnant women to reduce cesarean rate in Malayer (2004-2005). J Med Counc Islam Repub Iran 2007;25:149-53.
34. Saisto T, Toivanen R, Salmela-Aro K, Halmesmäki E. Therapeutic group psychoeducation and relaxation in treating fear of childbirth. Acta Obstet Gynecol Scand 2006;85:1315-9.
35. Ghaffari M, Sharifirad G, Akbari Z, Khorsandi M, Hassanzadeh A. The health belief model based education and reduction of cesarean among pregnant women: An interventional study. Health Syst Res 2011;7:200-8.
36. Navaee M, Abedian Z. Effect of role play education on primiparous women's fear of natural delivery and their decision on the mode of delivery. Iran J Nurs Midwifery Res 2015;20:40-6.
37. DiIorio C, Resnicow K, McDonnell M, Soet J, McCarty F, Yeager K. Using motivational interviewing to promote adherence to antiretroviral medications: A pilot study. J Assoc Nurses AIDS Care 2003;14:52-62.
38. Wilhelm SL, Stepans MB, Hertzog M, Rodehorst TK, Gardner P. Motivational interviewing to promote sustained breastfeeding. J Obstet Gynecol Neonatal Nurs 2006;35:340-8.
39. Gibbons L, Belizan JM, Lauer JA, Betran AP, Merialdi M, Althabe F. The global numbers and costs of additionally needed and unnecessary caesarean sections performed per year: Overuse as a barrier to universal coverage. World Health Rep 2010;30:1-31.