

# The Comparison of Knowledge and Attitude of Midwifery and Nursing Students towards Natural Childbirth and Cesarean Section

Zeinab Heidari (PhD)<sup>1</sup>, Shahnaz Kohan (PhD)<sup>2\*</sup>

<sup>1</sup> PhD Student in Reproductive Health, Student Research Center, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

<sup>2</sup> Assistant Professor, Nursing and Midwifery Care Research Center, Department of Reproductive Health, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

ARTICLE INFO	ABSTRACT
<i>Article type:</i> Original article	<b>Background &amp; aim:</b> Cesarean section (CS) rates have been increasing steadily, worldwide. The knowledge and attitude of health professionals towards natural childbirth and CS are important factors in selecting a mode of delivery. The purpose of this study was to determine the knowledge and attitude of midwifery and nursing students towards different modes of delivery. <b>Methods:</b> In this descriptive, analytical study, 73 junior students of nursing and midwifery from Isfahan School of Nursing and Midwifery were selected via census sampling. Data were collected using a questionnaire. For statistical analysis, student's t-test, Mann-Whitney and Pearson' correlation coefficient were performed, using SPSS version 18. <b>Results:</b> The results showed that the 74.20% of midwifery students had a high level of knowledge about natural childbirth and the majority of nursing students had moderate (52.40%) and high (40.5%) levels of knowledge about natural childbirth. Moreover, the 80.60% of midwifery students and 28.6% of nursing students had a high level of knowledge about CS. Also, 97% of midwifery students and 78.6% of nursing students had a positive attitude towards natural childbirth. Moreover the 93.5% of midwifery students had neutral attitude about CS, while 6.5% had a negative attitude towards CS. Also, 5% of nursing students had a positive attitude towards CS, while 95% had neutral attitude about CS. <b>Conclusion:</b> The majority of midwifery and nursing students in answer to questions about attitude towards CS, expressed neutral attitude. Therefore, it is important to discourage positive attitudes towards elective CS while training nursing and midwifery students.
<i>Article History:</i> Received: 28-Dec-2014 Accepted: 30-May-2015	
<i>Key words:</i> Attitude Cesarean Section Knowledge Midwifery Natural Childbirth Nursing Students	

► Please cite this paper as:

Heidari Z, Kohan S. The Comparison of Knowledge and Attitude of Midwifery and Nursing Students towards Natural Childbirth and Cesarean Section. Journal of Midwifery and Reproductive Health. 2015; 3(4):437-443.

## Introduction

Over the last decades, cesarean section (CS) rates have increased, worldwide, despite the recommendations of World Health Organization (WHO) to keep the rates below 10-15% (1). The high rate of CS is a great concern of medical communities in many countries (2). CS has been regarded as a global epidemic and is a source of concern for both healthcare professionals and researchers (3).

CS rates have continued to increase in the United States despite the national goals of Healthy People 2010, which aimed to reduce the

rate to 15%. According to a report by WHO, in the United States, 33% of childbirths were performed via CS in 2012 (4). Similarly, based on a report by WHO, 48% of all deliveries in Iran were performed via CS in 2012 (4). Overall, the rate of CS is high in our country (4). Another survey in south west of Iran showed the rising trend of CS from 51.6% in 2007 to 53.3% in 2010 (5).

In order to decrease this rate, it is necessary to determine the factors influencing the selection of a mode of delivery. CS has many adverse effects on the health of mothers and infants including their quality of life (6). The

\* Corresponding author: Shahnaz Kohan, Nursing and Midwifery Care Research Centre, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran. Email: kohan@nm.mui.ac.ir

most common indications for CS are fetal stress, failure to progress, previous CS experience, breech presentation and maternal request (7, 8). Also, factors such as maternal age, ethnicity, education and ideology may affect a woman's perceptions about modes of delivery. In fact, performing CS on maternal request is one of the most controversial topics in obstetrics (9, 10). In addition, attitudes toward CS among the staff and patients are of high significance (11).

In a study in Scotland, female obstetricians were asked about their personal choice for the mode of delivery. This study showed that 15.5% of specialists would choose elective CS (12). In Finland, CS rate was 15% among healthcare professionals, which was lower than the general population and other professionals including teachers. It was concluded that healthcare professionals have relatively conservative opinions about CS (13).

In a study by Reime et al., midwives strongly disagreed with the increasing rate of CS for improving childbirth; also, women had the right to choose elective CS without obstetric indications. In fact, obstetricians showed an attitude opposite to midwives. As most midwives stated, the attitude and personal experience of women play important roles in childbirth, while many obstetricians disagreed (14).

Also, a study by Gunnervik et al. showed that midwives considered a CS rate of 11.5% to be reasonable, whereas midwives believed that women have the right to select elective CS (15). Moreover, in a study by Stoll K. et al. on the attitudes of university students towards vaginal delivery and CS, most women and men responded that they preferred natural childbirth, while 9% stated otherwise (16).

Few studies have focused on the attitudes and knowledge of midwives and nursing students towards elective CS, and most of these studies have focused on obstetricians' and gynecologists' attitudes. In addition, there are debates on this subject among other medical groups involved in health care. Therefore, it is important to survey the knowledge and attitudes of nursing and midwifery students towards natural childbirth and CS (15).

Since one of the important factors for selecting a mode of delivery is the attitude of mothers and healthcare staff, we can make

changes by raising awareness and encouraging a reasonable attitude (9, 13). The mindset, knowledge and attitude of healthcare teams are often viewed as factors which should be considered in improving the quality of preventive delivery care (17). Although these factors have been previously noted, the significance of the relationship between knowledge, attitudinal characteristics and preventive care services has not been fully examined.

Unfortunately, no comprehensive study has been conducted on the knowledge and attitudes of midwifery and nursing students towards different modes of delivery. Considering the fact that these students are young educated individuals, who can influence others' attitudes via counseling, we designed this study to evaluate the attitudes of these students as important sources of information.

We selected third-year students since they have passed theoretical and practical courses and are ready to enter training. The purpose of this study was to assess the knowledge and attitude of junior students of nursing and midwifery towards modes of delivery at Isfahan University of Medical Sciences.

## Materials and Methods

This descriptive, analytical study was conducted at the School of Nursing and Midwifery (Isfahan University of Medical Sciences) in 2013. Junior students of nursing and midwifery were included in this study (n=73). The exclusion criterion was unwillingness to participate in the study.

Data were collected using a self-administered questionnaire. The questionnaire included demographic characteristics (e.g., age, sex, field of study, marital status, number of children and previous modes of delivery), 24 statements regarding subjects' knowledge about CS and natural childbirth and 21 statements about subjects' attitudes towards CS and natural childbirth.

Subjects' knowledge was evaluated as follows: incorrect (score 0), don't know (score 0) and correct (score 1). Items related to subjects' attitudes were scored on a 5-point Likert scale (1-5), ranging from strongly agree to strongly disagree. Subjects' scores on knowledge about natural childbirth and CS were graded as follows:

9-12 (good), 5-8 (medium) and 0-4 (weak). For evaluating subjects' attitudes, scores 1-16 were regarded as negative, 17-33 as neutral and 34-50 as positive attitude towards natural childbirth. Also, scores 1-18 were regarded as negative, 19-37 as neutral and 38-55 as positive attitude towards CS.

The questionnaire was designed with regard to the aim of the study, previous questionnaires (e.g., the questionnaire used by Chong and Mongelli) (18) and expert opinion. To determine the validity of the questionnaire, content validity was applied. The questionnaire was prepared after performing internet and library search and literature review. The content of the questionnaire was confirmed by eight reproductive health and midwifery specialists.

To determine the reliability of the questionnaire, test-retest was applied. For confirming its reliability, the questionnaire was

completed by 15 students in two stages during a two-week interval. Overall, 80% of responses were similar; thus, its reliability was confirmed. Also, in order to evaluate its internal consistency, Cronbach's alpha was calculated ( $\alpha=0.76$ ).

For data analysis, SPSS version 18.0 was applied. Student's t-test was used for evaluating mean differences. Also, Mann-Whitney U test was used for data not normally distributed. Pearson's test was used for determining the correlation between continuous variables. P-value less than 0.05 was considered statistically significant.

The present study was approved by Nursing and Midwifery Care Research Center, affiliated to Isfahan University of Medical Sciences (No.: 292217). Informed consents were obtained from all participants before distributing the questionnaires.

**Table 1.** Distribution of scores on knowledge about natural childbirth in midwifery and nursing students

NO	Statement	Correct answer by Midwifery students	Correct answer by Nursing students
		N (%)	N (%)
1	Infants born via vaginal delivery are cleverer than those born via CS.	14(45.16)	24(57.14)
2	Bleeding after natural childbirth is less than CS.	30(96.77)	37(88.09)
3	CS leads to higher mortality and morbidity rates, compared to natural childbirth.	23(74.19)	29(69.04)
4	Risk of infection after CS is greater than natural childbirth.	27(87.06)	33(78.57)
5	Risk of abdominal adhesions after CS is greater than natural childbirth.	31(100.00)	33(78.57)
6	Risk of gastroesophageal reflux into the lungs after CS is lower than natural childbirth.	22(70.96)	20(47.61)
7	Risk of deep vein thrombosis after natural childbirth is lower than CS.	27(87.06)	32(76.19)
8	Risk of damage to the urinary tract after natural childbirth is lower than CS.	10(32.25)	22(52.38)
9	Neonatal respiratory problems after CS are fewer than natural childbirth.	21(67.74)	27(64.28)
10	Pain after CS is more than natural childbirth.	28(90.32)	36(85.71)
11	CS is required for tubal ligation after delivery.	26(83.87)	20(47.61)
12	Natural childbirth can be selected after a previous CS.	31(100.00)	16(38.09)

## Results

This study comprised of 73 subjects including 31 midwifery and 42 nursing students (28 females and 14 males). The mean age of the subjects was  $21 \pm 4.50$  years ( $20.93 \pm 0.73$  and  $23.61 \pm 5.70$  years in midwifery and nursing students, respectively). There was no significant difference between the groups in terms of demographic characteristics.

According to the results, the mean score of knowledge about natural childbirth was  $8.94 \pm 2.10$  ( $9.22 \pm 0.27$  in midwifery students and  $7.95 \pm 0.35$  in nursing students) and the mean score of knowledge about CS was  $7.93 \pm 2.66$  ( $9.67 \pm 0.22$  in midwifery students and  $6.64 \pm 0.41$  in nursing students).

The mean score of attitude towards natural childbirth was  $40 \pm 5.24$  ( $40.96 \pm 4.05$  in midwife-

ry students and  $38.14 \pm 5.72$  in nursing students) and the mean score of attitude toward CS was

$27 \pm 4.85$  ( $25.80 \pm 4.85$  in midwifery students and  $29 \pm 4.44$  in nursing students).

**Table 2.** Distribution of scores on knowledge about CS in midwifery and nursing students

NO	Statement	Correct answer by Midwifery students	Correct answer by Nursing students
		N (%)	N (%)
1	In CS, bone fractures during birth do not occur.	27(87.06)	21(50.00)
2	Anesthetic medications in CS can pass to the infant and may cause depression.	24(77.41)	34(80.95)
3	Infants born by CS need longer hospital stay.	16(51.61)	12(28.57)
4	In case of breach presentation, CS must be performed.	26(83.87)	12(28.57)
5	Risk of placenta previa in future pregnancies after CS is greater than natural childbirth.	28(90.32)	18(42.58)
6	CS can compromise future obstetric performance.	28(90.32)	24(57.14)
7	Quality of life after CS is higher than natural childbirth.	24(77.41)	27(64.28)
8	CS is more risky than natural childbirth.	27(87.06)	23(54.76)
9	Hospital stay is longer after CS.	31(100.00)	37(88.09)
10	Pelvic floor damage and genital prolapse are more prevalent in natural childbirth, compared to CS.	13(41.93)	13(30.95)
11	Undergoing CS more than three times is usually not advisable.	28(90.32)	25(59.52)
12	Mothers need more help in breastfeeding after CS, compared to natural childbirth.	28(90.32)	33(78.57)

**Table 3.** Distribution of scores on attitude towards natural childbirth in midwifery and nursing students

No	Statement	Midwifery students		Nursing students	
		SA* N(%)	SD** N(%)	SA N(%)	SD N(%)
1	Natural childbirth has a lower overall morbidity risk, compared to CS.	28(90.32)	0(0.00)	30(71.42)	0(0.00)
2	Natural childbirth forms a better emotional bonding between mother and child.	28(90.32)	0(0.00)	29(69.04)	0(0.00)
3	Natural childbirth is a natural process.	29(93.54)	0(0.00)	29(69.04)	0(0.00)
4	Seeing the neonate immediately after natural childbirth is enjoyable for the mother.	29(93.54)	0(0.00)	31(73.80)	1(2.38)
5	The risk of maternal morbidity and mortality in natural childbirth is greater than CS.	0(0.00)	12(38.70)	1(2.38)	8(19.04)
6	Considering the risks of anesthesia in CS, natural childbirth is preferable.	23(74.19)	0(0.00)	22(52.38)	0(0.00)
7	Natural childbirth is associated with intolerable labor pain and stress.	0(0.00)	9(29.03)	9(21.42)	7(16.66)
8	Lack of personnel support at delivery rooms leads to fear of natural childbirth.	20(64.51)	0(0.00)	12(28.57)	2(4.76)
9	Natural childbirth will ruin a woman's sex life.	7(22.58)	7(22.58)	4(9.52)	4(9.52)
10	CS is better for retaining sexual function and body image.	0(0.00)	12(38.70)	6(14.28)	6(14.28)

\* SA, Strongly Agree; \*\* SD, Strongly Disagree

**Table 4.** Distribution of scores on attitude towards CS in midwifery and nursing students

No	Statement	Midwifery students		Nursing students	
		S* N (%)	SD** N (%)	SA N (%)	SD N (%)
1	CS causes abdominal deformities.	20(64.51)	0(0.00)	8(19.04)	1(2.38)
2	CS has a minimized risk of fetal distress and emergency cases.	2(6.45)	7(22.58)	7(16.66)	9(21.42)
3	CS has become the gold standard for delivery in private	1(3.22)	10(32.25)	0(0.00)	9(21.42)

	practice in many countries				
4	A person with financial problems prefers CS.	3(9.67)	4(12.90)	6(14.28)	2(4.76)
5	CS reduces the risk of pelvic floor damage.	2(6.45)	5(16.12)	1(2.38)	1(2.38)
6	CS is not painless.	19(61.29)	1(3.22)	16(38.09)	1(2.38)
7	For tubal ligation after delivery, CS is preferred to natural childbirth.	3(9.67)	7(22.58)	10(23.80)	1(2.38)
8	Length of hospital stay is longer in CS, compared to vaginal delivery.	24(77.41)	1(3.22)	24(57.14)	0(0.00)
9	CS is better and more modern than natural childbirth.	3(9.67)	9(22.03)	3(7.14)	5(11.90)
10	Since rich women choose CS, I choose it, as well.	6(19.35)	3(9.67)	5(11.90)	2(4.76)
11	CS prevents neonatal death.	3(9.67)	12(38.70)	1(2.38)	5(11.90)

\* SA: Strongly Agreed 2. SD: Strongly Disagreed

Midwifery students had moderate (25.80%) and high (74.20%) levels of knowledge about natural childbirth (Table 1). They also had moderate (19.4%) and high (80.60%) levels of knowledge about CS (Table 2). Nursing students had low (7.10%), moderate (52.40%) and high (40.50%) levels of knowledge about natural childbirth (Table 1). They also had low (23.80%), moderate (47.60%) and high (28.60%) levels of knowledge about CS (Table 2). There was a significant difference between nursing and midwifery students in terms of knowledge about natural childbirth and CS ( $P < 0.001$ ).

According to the results, 97% of midwifery students had a positive attitude towards natural childbirth, while 3% had neutral attitude in this regard. Overall, 78.60% of nursing students had a positive attitude towards natural childbirth, while 21.40% expressed neutral attitude about natural childbirth (Table 3). There was a significant difference between nursing and midwifery students regarding the mean score of attitude towards natural childbirth ( $P < 0.001$ ).

As the results indicated, 93.50% of midwifery students had neutral attitude about CS and 6.50% had negative attitudes towards CS. Also, 5% of nursing students had a positive attitude towards CS, while 95% had neutral attitude (Table 4). There was a significant difference between nursing and midwifery students regarding the mean score of attitude towards CS ( $P < 0.001$ ).

There was a significant correlation between the level of knowledge about natural childbirth and CS and attitude towards natural childbirth and CS ( $P = 0.01$ ). Also, a positive correlation was observed between the level of knowledge

about natural childbirth and attitude towards natural childbirth ( $r = 0.30$ ). Moreover, a negative correlation was observed between the level of knowledge about CS and attitude towards CS ( $r = -0.39$ ).

## Discussion

The majority of subjects in this study had positive attitudes towards natural childbirth, while 5% of nursing students had a positive attitude towards CS. These findings were similar to the results reported in other studies, which indicated the preference of natural childbirth in women (19, 20).

The results reported by Stoll K. et al. showed that most university students preferred natural childbirth, while 9% preferred CS. The reasons for preferring a specific mode of delivery were similar in male and female participants. In fact, confidence in natural childbirth emerged as a significant predictor of preference for vaginal delivery in women (16).

The current findings showed that 97% of midwifery students and 78.60% of nursing students had positive attitudes towards natural childbirth, whereas Koken et al. showed that natural childbirth was favored by 48.1% of healthcare providers and 69.6% of the public group. Overall, 45.3% of healthcare providers and 20.6% of the public group had undergone CS without any medical indications. Moreover, Turkish healthcare providers had a higher preference for CS, compared to the public. In both groups, the attitude towards CS on demand was positive (21).

Another study in Finland showed that CS rate was 15% among healthcare professionals, which



was lower than that reported in the general population and other professionals including teachers. Health professionals had relatively conservative opinions and less regard for CS (13). In the current study, the majority of students had neutral attitude toward CS and 5% of nursing students had a positive attitude towards CS.

According to a study by Gunnervik et al. in Sweden, midwives working at antenatal care clinics believed that women have the right to choose elective CS and considered this procedure as the best choice for women with fear of birth; however, midwives working at labor wards did not hold such opinions, regardless of their working experience or age (15). The present findings showed that students with a higher level of knowledge about natural childbirth were more likely to have a positive attitude towards natural childbirth. Also, an Italian study showed that women with lower education preferred CS (22).

The level of interaction between mothers and care providers influences the decision regarding the mode of delivery (23). In fact, the beliefs and attitudes of healthcare providers might affect women's request for CS (14). Generally, midwives and nurses are important caregivers for women. In many countries, midwives are the main healthcare providers at perinatal care units and labor wards (15).

The rate of CS can be minimized by increasing knowledge and discouraging mothers and health workers about elective CS. Ensuring mothers and health professionals about the benefits and fewer complications of natural childbirth can decline the rate of CS. Therefore, it is important to determine the attitudes of healthcare providers (such as midwifery and nursing students) in order to understand this growing worldwide concern.

The findings of this study indicated that the majority of students had high and moderate levels of knowledge about both natural childbirth and CS; however, in answer to questions about attitudes towards CS, they expressed neutral attitude. Therefore, it is important to encourage negative attitudes towards elective CS while training nursing and midwifery students.

This study for the first time assessed the knowledge and attitude of junior students of nursing and midwifery towards natural

childbirth and CS in Iran. A limitation of this study was that all medical students were not evaluated. Therefore, further research is required to assess and compare the knowledge and attitude of medical university students to gain an insight into common beliefs about modes of delivery in Iranian university students.

### Conflict of Interest

The authors declare no conflicts of interest.

### References

1. Betrán AP, Merialdi M, Lauer JA, Bing-Shun W, Thomas J, Van Look P, et al. Rates of caesarean section: analysis of global, regional and national estimates. *Paediatric and Perinatal Epidemiology*. 2007; 21(2):98-113.
2. Aali BS, Motamedi B. Women's knowledge and attitude towards modes of delivery in Kerman, Islamic Republic of Iran. *Eastern Mediterranean Health Journal*. 2005; 11(4):663-672.
3. Walker SP, McCarthy EA, Ugoni A, Lee A, Lim S, Permezel M. Cesarean delivery or vaginal birth: a survey of patient and clinician thresholds. *Obstetrics & Gynecology*. 2007; 109(1):67-72.
4. Organization WH. World health statistics 2014. Geneva, Switzerland. World Health Organization; 2014.
5. Maharlouei N, Moalae M, Ajdari S, Zarei M, Lankarani KB. Cesarean delivery in south-western Iran: Trends and determinants in a community-based survey. *Medical Principles and Practice*. 2012; 22(2):184-188.
6. Majzoobi MM, Majzoobi MR, Nazari-pouya F, Biglari M. Comparing Quality of Life in Women after Vaginal Delivery and Cesarean Section. *Journal of Midwifery and Reproductive Health*. 2014; 2(4):207-214.
7. Kolås T, Hofoss D, Daltveit AK, Nilsen ST, Henriksen T, Håger R, et al. Indications for cesarean deliveries in Norway. *American journal of obstetrics and gynecology*. 2003; 188(4):864-870.
8. Savage W. The rising caesarean section rate: a loss of obstetric skill? *Journal of Obstetrics & Gynecology*. 2007; 27(4):339-346.
9. Sheldon RE, Escobedo MB. Elective primary cesarean delivery. *The New England Journal of Medicine*. 2003; 348(23):2364-2365.
10. Wax JR, Cartin A, Pinette MG, Blackstone J. Patient choice cesarean: an evidence-based review. *Obstetrical & Gynecological Survey*. 2004; 59(8): 601-616.
11. Pang SM, Leung DT, Leung T, Lai C, Lau T, Chung TK. Determinants of preference for elective caesarean section in Hong Kong Chinese pregnant

- women. Hong Kong Medical Journal. 2007; 13(2):100-105.
12. MacDonald C, Pinion SB, MacLeod UM. Scottish female obstetricians views on elective caesarean section and personal choice for delivery. Journal of Obstetrics & Gynecology. 2002; 22(6):586-589.
13. Hemminki E, Klemetti R, Gissler M. Cesarean section rates among health professionals in Finland, 1990-2006. Acta Obstetrica et Gynecologica Scandinavica. 2009; 88(10):1138-1144.
14. Reime B, Klein MC, Kelly A, Duxbury N, Saxell L, Liston R, et al. Do maternity care provider groups have different attitudes towards birth? An International Journal of Obstetrics & Gynaecology. 2004; 111(12):1388-1393.
15. Gunnervik C, Josefsson A, Sydsjö A, Sydsjö G. Attitudes towards mode of birth among Swedish midwives. Midwifery. 2010; 26(1):38-44.
16. Stoll K, Fairbrother N, Carty E, Jordan N, Miceli C, Vostrcil Y, et al. "It's All the Rage These Days": University Students' Attitudes Toward Vaginal and Cesarean Birth. Birth. 2009; 36(2):133-140.
17. Stone EG, Morton SC, Hulscher ME, Maglione MA, Roth EA, Grimshaw JM, et al. Interventions that increase use of adult immunization and cancer screening services: a meta-analysis. Annals of Internal Medicine. 2002; 136(9):641-651.
18. Chong ES, Mongellib M. Attitudes of Singapore women toward cesarean and vaginal deliveries. International Journal of Gynecology and Obstetrics. 2003; 80(2):189-194.
19. Maharlouei N, Rezaianzadeh A, Hesami E, Moradi F, Mazloomi E, Joulai H, et al. The preference of Iranian women to have normal vaginal or cesarean deliveries. Journal of Research in Medical Sciences: the Official Journal of Isfahan University of Medical Sciences. 2013; 18(11):943-950.
20. Mustafa Zadeh F, Mash'oufi M, Rostam Nejad M. The survey of attitude of health workers and pregnant women about normal delivery and caesarean delivery in 2005, in Ardebil. Journal of Ardabil University of Medical Sciences. 2007; 6(4):403-408.
21. Koken G, Cosar E, Sahin F, Tolga Ario D, Duman Z, Aral I. Attitudes towards mode of delivery and cesarean on demand in Turkey. International Journal of Gynecology & Obstetrics. 2007; 99(3):233-235.
22. Cesaroni G, Forastiere F, Perucci CA. Are cesarean deliveries more likely for poorly educated parents? A brief report from Italy. Birth. 2008; 35(3):241-244.
23. Potter JE, Hopkins K. Consumer demand for caesarean sections in Brazil: Demand should be assessed rather than inferred. British Medical Journal. 2002; 325(7359):335.