



Development of Attitude Scale Towards Caesarean Section: A Sample of Turkey

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Abstract

Introduction. Caesarean section is an alternative to normal birth and is performed through an incision. Caesarean section can be a method applied in cases of necessity, but it can also be applied in cases where it is not mandatory.

Aim. The aim of this study is to determine the attitudes of women towards caesarean section.

Methods. In this regard, 437 women of reproductive age between 18-49 residing in Esenyurt district of Istanbul province were included in the study. In the study, a 42-question survey was first drafted. After receiving expert opinion and conducting a pilot study, a draft survey consisting of 32 questions was applied to the participants in person. Firstly, explanatory factor analysis was applied to the data. Following the analysis, 12 questions that were not collected under any dimension were removed from the scale and 5 factors including 20 questions were found. After this stage, Confirmatory Factor Analysis was applied to the identified factors.

Results. It was determined that the model obtained was a perfect fit for the data. Therefore, the scale developed by exploratory factor analysis was confirmed by confirmatory factor analysis. The Cronbach's coefficient of the developed scale was calculated as 0.820 and it was concluded that it was highly reliable.

Conclusion. It was decided that the developed scale could be used to measure women's attitudes towards caesarean section.

Introduction

In general, the process of removing the child from the mother's womb by performing a surgical intervention other than natural birth is called cesarean section. This surgical intervention may be due to obligatory reasons or non-obligatory reasons. The non-obligatory reasons include, inter alia, the mother's choice of cesarean section upon her own request, physician guidance, history of miscarriage, and fear of birth (1-6). While the World Health Organization considers the rate of cesarean section in the range of 10-15% to be acceptable according to the standards set by it, it is seen that the cesarean section rate is much higher than the desired level in many countries, including Turkey. This brings a serious financial burden to the country's health system (7). When the literature is examined in the Turkish sample, it is possible to see that there are various studies on cesarean section (2, 8-10). This study differs from the studies in the literature. The fact that the attitude scale towards cesarean section has not been directly included in the literature by sampling women between the ages of 18-49 in the fertility category in studies involving the Turkish sample reveals the unique aspect of this study. The aim of this study is to introduce the factors affecting attitudes towards cesarean section into the literature in the Turkish sample.

Conceptual framework

Pregnancy and subsequent birth cause several physical and psychological changes in women's lives. Although labour is a natural process, the interventions applied negatively affect the course of labour and may cause problems in some cases. To prevent all the negative effects that may occur in labour, it is important to choose the method of delivery carefully in terms of both mother and baby health (11). One of the existing delivery methods other than normal delivery method is cesarean section.

It is seen that there are many definitions of cesarean section. According to one definition, cesarean section is a major abdominal surgery performed on women in both developed and underdeveloped countries (12). Veef and Van de Velde (2022) define cesarean section as a surgical operation performed worldwide (13). Cesarean section is an important maternal

health service (14). Cesarean section is defined as a preferred mode of delivery in cases where vaginal delivery is not possible or is risky for the mother or fetus (10-11). When the history of cesarean section is examined, it is seen that it has been used since ancient times and is a part of human culture (15). The term cesarean section is derived from the Latin word 'caederal' meaning 'to cut'. It is narrated that it was first applied during the Roman period to extract the baby in the last trimester of pregnancy from the mother's womb (16).

The indications for cesarean section are listed as multiple pregnancies, presentation disorders, maternal medical problems, presence of infection that can be transmitted from mother to baby, placental disorders such as placenta previa or ablatio placentae, fetus weighing 4.5 kg due to maternal diabetes, history of shoulder dystocia, Cephalopelvic disproportion, previous uterine surgery and maternal request (17-18).

Cesarean section rates have increased significantly over time. The optimisation of cesarean section rates is a global priority. Excessive cesarean sections can lead to poor outcomes for both mother and child (7,19-20). In addition, high rates of cesarean section are considered a public health problem worldwide (21). Although cesarean section is seen as a life-saving surgery for mother and fetus, when necessary, it also carries various risks as in all surgical interventions (22-23). Complications such as bleeding, need for blood transfusion, increased risk of uterine rupture and pelvic infections may develop during or after cesarean section. Cesarean section increases the length of hospital stay and causes urinary tract injuries, anaesthesia complications and thromboembolic events. Cesarean section may also adversely affect breastfeeding, as there may be a delay in the bringing together of mother and baby. In addition, challenges in adapting to the role of motherhood after cesarean section, prolongation of the mother's recovery period, and difficulties associated with the care of the mother and the baby are also complications of cesarean section (24).

The rates of cesarean sections in developed and emerging countries are not encouraging at all. The World Health Organisation (WHO)'s recommendation for cesarean section rates is 10-15%. In the last 25 years, it has been reported that there has been an increase of over 30% in cesarean section rates in Egypt, Dominican Republic, China, Georgia and Turkey (25). According to 2015 WHO's data, Brazil with 55.6%, Do-

minican Republic with 56.4%, Turkey with 50.4%, Iran with 48%, China with 47% and Egypt with 51.8% are the five countries with the highest caesarean section rates. In the same year, Turkey ranked first in caesarean section rates among OECD countries (26). When the caesarean section in Turkey Health Statistics is analysed, the following rates are obtained: 51.1% in 2014; 53.1% in 2015-2016-2017; 54.9% in 2018; 54.4% in 2019. It is seen that the caesarean section rates in Turkey are considerably higher than the recommendation of the WHO's caesarean section rate. The reasons for this dramatic increase today are listed as increased age at first pregnancy, continuous application of fetal monitoring, the misconception that caesarean delivery is safer for the baby, the increase in the socio-economic level of families, mothers' desire for a painless, effortless birth, and physicians' guidance for caesarean delivery. The reasons why women prefer caesarean section are factors such as fear of normal delivery, lack of adequate information about normal vaginal delivery, women's fear and avoidance of birth pain, inadequate conditions in the delivery room, lack of adequate psychological support during labour and offering the option of epidural anaesthesia. Unfortunately, caesarean section is perceived as a comfortable delivery method by families, society and physicians (27). Perner et al. (2022) examined the caesarean section rates and social inequality in 305 cities in the Latin American region including Brazil, Colombia, Guatemala, Mexico and Peru, and found that there is a relationship between the mother's education level, age and gross domestic product and caesarean section rates (28). In another study conducted by Okyere et al. (2022), the caesarean section rates of women were analysed based on official data in Ghana between 1998-2014. After the examination, it was concluded that factors such as the city of residence, gross domestic product and education affect caesarean section (29). In the study performed by Özkan et al. (2013), 1159 women between the ages of 18-49 with a history of pregnancy were included in the sample. It was determined that 43.2% of women gave birth by caesarean section. Factors affecting the situation of having a caesarean section were determined as the mother's living in the city, her last birth in the private sector, physician referral, and compulsory caesarean section. In addition, the fact that women are not fully informed about caesarean section is another factor that increases the risk of caesarean section (1). One of the factors affecting the choice of caesarean section is that the day when the baby will

be born is determined in advance by caesarean section. Couples can choose a caesarean section to have the child on the day they plan. In the study performed by Liang et al. (2018) which included 1169 pregnant women, it was found that only 8% of pregnant women had a preference for caesarean section, and when the factors affecting this situation of pregnant women who preferred caesarean section were examined, it was found that the most important factor was the desire for the baby to be born on a special day. Other factors are the couples' desire for this option and the fact that caesarean section is less painful than vaginal birth (30). Fuglenes et al. (2011) used the data of the mother-child study, which included a sample of 58881 people and was published by the Norwegian Institute of Public Health in 2010. In the study, it was found that only 6% of the sample group preferred caesarean section to vaginal birth. Factors such as previous caesarean section experience, fear of birth, and negative birth experience affect the choice of caesarean section (31).

Present study

This study aims to determine the factors affecting the caesarean section attitudes of women aged 18-49 in the Turkish sample, through scale development. The unique point of this study is that the factors determining the attitude towards caesarean section in the Turkish sample were not determined through scale development. When the literature is examined, although there are qualitative and quantitative studies on caesarean section preferences, precautions to be taken to prevent anxiety and depression that develop with caesarean section, and studies on the financial burden that caesarean section brings to the country's health system, it was determined that a caesarean attitude scale that takes a group directly at birth age as a sample is missing. It is anticipated that this scale will fill an important gap and guide future studies.

Methods

Ethics

In this study, permission was obtained from the ethics committee of Istanbul Esenyurt University with the decision dated December 1, 2022 and numbered 2022-11/11. While obtaining data within the scope of the study, the principles in the Declaration of Helsinki were followed.

Participants

Sample included women in reproductive age between 18-49 years residing in Esenyurt district of Istanbul/Turkey province. In the study, 437 women were reached using convenience sampling. When the literature is examined, it is seen that there are different opinions about sample size in scale development studies. The number of participants to be reached should be 5 times, and if possible 10 times, the number of statements (32-33). Hinkin (1995) argues that 4 to 10 times as many individuals as the scale items will be sufficient (34). While Kline (1994) stated that at least 100 people are sufficient for scale development studies (35), Gorsuch (2014) determined this number ranges from 50 to 200 (36). This information adequately represents the liberation of 437 individuals for the scale consisting of 20 items, and the universe within the framework of these views. Demographic information of the women included in the study (age, reproductive status, childbearing status, etc.) were not considered.

Conceptual framework in research

The conceptual framework of the research discusses the structural relationships between the factors (alternative choice, preference, negative effect, facilitating attitude and special choice) that are effective in the caesarean section attitude, which are the main variables of the research.

Explanations regarding the scale sub-dimensions that emerged after the conceptual model are as follows;

Alternative Choice: In cases where normal birth is impossible and the excessive pain is present, the birth preference is caesarean section.

Preference: It is the factor that expresses the individual's preference for cesarean section even if there is a possibility of normal birth.

Negative Effect: Dimension that expresses that cesarean section is a negative situation for the mother, baby and family.

Facilitative Attitude: It states that cesarean section is simpler and more comfortable than vaginal birth.

Special Choice: The individual's body aesthetics is the dimension that expresses the individual's choice of cesarean section so that the child is born on an important day for him/her and/or his/her partner.

Negative Effect: This is the dimension that expresses that cesarean section is a negative situation for the mother, baby and family.

Procedure

The data were collected by face-to-face survey method between 1 January 2023 and 30 July 2023. While preparing the survey of the research, the conceptual framework was created based on the literature (17, 27-31). In accordance with this conceptual structure, the question pool was created by the researchers.

Results

Reliability of research data and pilot study

Firstly, the conceptual framework for the scale to be developed was created by reviewing the relevant literature. In the next stage, an item pool consisting of 42 questions was developed. Following this stage, the opinions of 10 experts (CVI: 0.62) who serve as faculty members in the faculties of health sciences (4 people), educational sciences (2 people), and business sciences (4 people) of universities in Turkey were consulted using the Lawshe technique. After the expert opinions, the number of questions in the pool was reduced to 32. The content validity of the remaining 32 questions was found to be 84%. A pilot study was conducted on a group of 20 people, so that errors in the items such as expression errors,

misunderstanding by the respondents, spelling errors, spelling mistakes, etc. were corrected. For test-retest reliability, the draft scale was administered to 25 people twice at 3-week intervals and the total scores obtained from the scale are given below. The level (degree) of Pearson correlation coefficient between the first and second application is 0.82 (82%). There is a very strong (very high) positive correlation between the first and second application. That is to say, the measurements made at different times are very similar. Therefore, the scale is highly reliable. Finally, the survey was administered to a target group of 437 people.

Reliability analysis was performed on the data obtained from the target group using "item analysis based on item-total correlation" and the reliability coefficient for the remaining 20 statements in the final scale was found to be $\alpha = 0.820$. Since this value is between $0.80 \leq \alpha < 1.00$, the scale is highly reliable. In addition, for the sub-factors of the scale, namely Alternative Choice Factor, Preference Factor, Negative Impact Factor and Facilitating Attitude Factor, $0.80 \leq \alpha < 1.00$ is valid and the factors are highly reliable. For the Special Choice Factor, $0.60 \leq \alpha < 0.80$ is valid. This indicates that the factor is reliable.

An explanatory factor analysis was conducted for the data. In the analysis, the items (7, 8, 9, 14, 15, 16, 17, 18, 19, 27, 30, 31) that did not fit were removed from the scale and the results in Table 1 were obtained.

Since the Keiser Meyer Olkin Test (KMO) value is 0.844, the result is excellent. The high KMO value indicates that the sample size is sufficient for factor analysis. The result of Bartlett's test is also significant ($p < 0.05$). In other words, there are high correlations between the variables and the data come from Multivariate Normal Distribution (42). In accordance with both findings, the data are suitable for factor analysis and the sample is sufficient. A factor loading value above 0.30 is sufficient. The smallest factor loading value of the analysis was found to be 0.448. The cumulative variance explained by the eigenvalues is 67.35% of the total variance.

As a result of the analyses of the items whose rotated (rotation type: Varimax) factor loadings were calculated, it is seen that the scale consists of 20 items and 5 dimensions. While determining the factor loadings as a result of the explanatory factor analysis, care was taken to ensure that the factor loading of

each statement was at least 0.30 and above (Table 1 can be examined for detailed information). Additionally, there are at least 3 statements under each dimension. The dimensions obtained by taking into account the meaning of the items in the factors by utilising the rotated factor loadings were named as "Alternative Choice Factor, Preference Factor, Negative Impact Factor, Facilitating Attitude Factor and Special Choice Factor" respectively.

Findings related to confirmatory factor analysis

In this section, confirmatory factor analysis (CFA) was applied to the factors affecting the attitude towards caesarean section through IBM AMOS package programme and the degree of fit of the data for the assumed model was tested. Confirmatory factor analysis and structural validity analysis were performed, and the diagram of model fit is given in Figure 1.

Acceptable values of the fit indices are $\chi^2/df < 5$, GFI > 0.85 , AGFI > 0.90 , CFI > 0.90 , RMSEA < 0.08 and RMR < 0.08 (37-39).

The adaptive values given in Table 2 show that the model fit is good. The good fit of the data for the model shows that the model has construct validity.

The results of confirmatory factor analysis (CFA) of the optimised measurement model are as shown in Table 3.

Regression values show the power of observed variables to predict latent variables, i.e. factor loadings. Since the " p " values for each binary relationship above are less than 0.001, the factor loadings are significant. The significant p values indicate that the items are loaded correctly on the factors. In addition, standardised regression coefficients of 0.452 and above indicate that the ability to predict latent variables, i.e. the factor loadings of each item are high.

Even if the AVE value is less than 0.50, the convergent validity is ensured when the CR is greater than 0.60 (40). Since the AVE values calculated in the table above are 0.52 and above and the CR value is 0.62 and above, the model provides convergence validity.

Table 1. Results of the explanatory factor analysis of the study

Factor	Variables	Factor Loadings	Variance Explained
Alternative Choice	I20: I prefer a cesarean section because I am very afraid of vaginal birth.	.468	29.761
	I21: If I had pelvic stenosis (narrowness of the birth canal) for birth, I would definitely prefer a cesarean delivery.	.669	
	I22: If I had a twin pregnancy, I would definitely prefer a cesarean delivery.	.784	
	I23: During my pregnancy, if the doctor told me that my baby was a big baby, I would definitely prefer a cesarean delivery.	.813	
	I24: If the process did not progress during birth, I would definitely prefer a cesarean section to avoid any trouble.	.769	
	I25: Since I don't think I will be able to push for a long time during birth, I definitely prefer a cesarean section.	.589	
	I26: Since I do not want to suffer pain for a long time during birth, I definitely prefer cesarean delivery.	.601	
Preference	I4: In any case, I would like to give birth by cesarean section.	.728	14.138
	I5: I would like to give birth by cesarean section, whether my doctor recommends it or not.	.853	
	I5: I would like to give birth by cesarean section, whether my wife and family want it or not.	.796	
Negative Impact	I10: Caesarean section negatively affects communication between mother and baby.	.770	9.292
	I11: Caesarean section negatively affects women's life for life.	.783	
	I12: Caesarean section negatively affects communication between spouses.	.821	
Facilitating Attitude	I13: Caesarean section negatively affects the mother's breastfeeding.	.774	8.143
	I1: Cesarean section is usually easier than vaginal birth method.	.862	
	I2: Cesarean section is generally easier than vaginal birth method.	.899	
Special Choice	I3: Cesarean section is usually more comfortable than vaginal birth method.	.833	6.018
	I28: I would definitely prefer a cesarean section to give birth to my baby on a special date for me.	.828	
	I29: I prefer cesarean section because I consider my body aesthetics after birth.	.861	
Evaluation Criteria	I32: If my doctor recommended a cesarean birth, I would prefer a cesarean birth without hesitation.	.627	
	Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.844 Approx. Chi-Square: 4249.725 Barlett's Test of Sphericity: 0.000 Cronbach Alpha's: 0.820 Extraction Method: Principal Components Rotation Method: Varimax Total Variance Explained: 67.350		

Table 2. Results of the model fit of the study

Acceptable Fit Indices	Calculated Fit Indices
CMIN/df (χ^2/sd)	3.451
GFI	0.876
IFI	0.906
CFI	0.905
RMSEA	0.077
SRMR	0.0612

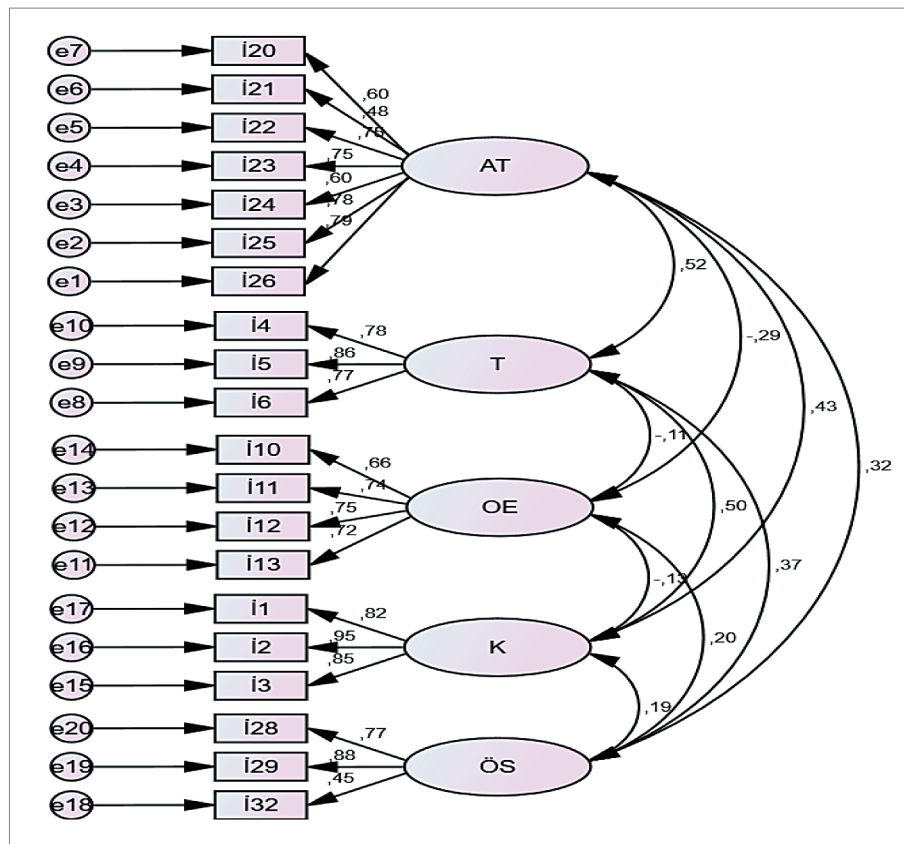


Figure 1. Results of measurement model and goodness of fit

Table 3. The results of confirmatory factor analysis for the optimised measurement model										
Factors	Statement	Standardised Value	Estimate	Standard Value	T value	p	Cronbach's α	AVE	CR	
Alternative Choice	I20	.597	.777	.062	12.476	***	0.857	.50	.79	
	I21	.477	.576	.059	9.743	***				
	I22	.749	.923	.057	16.231	***				
	I23	.749	.932	.057	16.219	***				
	I24	.595	.741	.060	12.437	***				
	I25	.778	.932	.055	16.967	***				
Preference	I4	.785	1.046	.065	16.091	***	0.841	.65	.76	
	I5	.855	1.072	.063	17.050	***				
	I6	.774	1.000			***				
Negative Impact	I10	.663	.965	.080	12.043	***	0.810	.52	.73	
	I11	.742	1.076	.082	13.189	***				
	I12	.749	1.040	.078	13.267	***				
	I13	.723	1.000			***				
Facilitating Attitude	I1	.820	1.037	.049	21.032	***	0.900	.76	.83	
	I2	.946	1.110	.045	24.584	***				
	I3	.846	1.000			***				
Special Choice	I28	.769	1.538	.177	8.706	***	0.714	0.52	.62	
	I29	.875	1.714	.201	8.527	***				
	I32	.452	1.000			***				

Discussion

Although there is no study on the development of a direct psychometric measurement tool related to cesarean section in the Turkish sample, it is possible to say that there is literature on this field. Antoine and Young (2021), Opiyo (2022), Torloni et al. (2011) reported that cesarean section has a negative effect (19-21) on both mother and child health, which is like the "negative impact" sub-factor of the scale developed within the scope of this study. Liang et al. (30) when the findings of the study introduced to the field are examined, among the factors affecting the choice of cesarean section is the desire for the baby to be born on a special day for the family. This finding is similar to the "Special Choice" factor, which is one of the sub-dimensions of the scale developed within the scope of this study. When the literature is examined, there are findings that individuals are directed to cesarean section, especially by physicians, and their preference for cesarean section is due to fear of birth (2-5). These findings are like the preference factor of the measurement tool introduced to the field within the scope of this study. When the literature is examined, there are findings (6,9,31) that the individual must choose cesarean section as an alternative in cases where normal birth is not possible. These findings are like the alternative preference factor, which is one of the sub-dimensions of this study. Situations such as the individual's previous miscarriage or fear of childbirth are explained by the facilitating attitude factor, which is one of the sub-dimensions within the scope of this study. This factor is like studies in literature (1,28-29).

Conclusion

In this study, a valid and reliable measurement tool was developed that includes all stages of the scale development process (41-43) in the literature. The developed scale consists of 5 factors and 20 statements (alternative choice factor - 7 items, preference factor - 3 items, negative impact factor - 4 items,

facilitating attitude factor - 3 items, special choice factor - 3 items). The developed measurement tool can be used to determine the attitudes of women of childbearing age and adulthood towards cesarean section in the Turkish sample. It is anticipated that this study will guide future studies.

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RAZVOJ SKALE STAVOVA PREMA CARSKOM REZU: ISTRAŽIVANJE PROVEDENO NA TURSKOM UZORKU

Sažetak

Uvod. Carski rez alternativa je normalnom porodu i izvodi se kroz rez. Carski rez može biti metoda koja se primjenjuje u slučajevima nužde, ali se može primijeniti i u slučajevima kada nije obavezan.

Cilj. Cilj je ovog istraživanja utvrditi stavove žena prema carskom rezu.

Metode. U istraživanje je bilo uključeno 437 žena reproduktivne dobi, u dobi od 18 do 49 godina koje žive u okrugu Esenyurt u pokrajini Istanbul. Prvo je sastavljena anketa od 42 pitanja. Nakon dobivenoga stručnog mišljenja i provođenja pilot-studije, nacrt ankete koji se sastojao od 32 pitanja primijenjen je u istraživanju. Prvi korak u analizi podataka bila je eksploratorna faktorska analiza. Nakon analize, iz skale je uklonjeno 12 pitanja koja se nisu svrstala ni u jedan faktor, a utvrđena je struktura od pet faktora koja sadržava 20 pitanja. Potom je provedena konfirmatorna faktorska analiza.

Rezultati. Utvrđeno je da dobiveni model savršeno odgovara podacima. Stoga je skala razvijena eksplorativnom faktorskom analizom potvrđena konfirmatornom faktorskom analizom. Cronbachov koeficijent razvijene skale iznosi 0,820 te je zaključeno da je skala vrlo pouzdana.

Zaključak. Zaključeno je da se razvijena skala može upotrebljavati za mjerenje stavova žena prema carskom rezu.

Ključne riječi: carski rez, skala stavova, razvoj skale, Turska
