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The episiotomy self-efficacy scale: a scale development study

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Abstract

Background Self-efficacy mediates between knowledge and behaviour and is related to professional competence. It is very important to provide students with episiotomy skills, which are among the most important practices of midwives, and to increase their self-efficacy in this regard.

Aim The aim of this study was to develop a measurement tool that measures the self-efficacy of midwives regarding episiotomy application, one of the most critical tasks of midwives, in terms of cognitive, affective, motivational and psychomotor aspects.

Methods This methodological study was conducted with midwifery students in their 2nd, 3rd and 4th years. A sociodemographic information form and a draft episiotomy self-efficacy scale were used to collect data. Factor analysis, Cronbach's alpha and item–total score correlations were used to evaluate the data and two levels of confirmatory factor analysis (CFA) were conducted in the study.

Results The results of second-level CFA indicated the emergence of a structure consisting of seventeen items and four sub-dimensions. The factor loadings of the scale exhibited a range of 0.62–0.93. The goodness-of-fit index values were: RMSEA, 0.079; CFI, 0.961; AGFI, 0.834; and GFI, 0.875. Cronbach's alpha for the entire scale was found to be 0.955 and the corrected item–total correlations of the items were between 0.573 and 0.810.

Conclusions It was concluded that the overall scale is a valid and reliable measurement tool for midwifery students. Further studies are recommended to assess the validity and reliability of the scale using item pools in different languages.

Relevance to clinical practice Self-efficacy mediates between knowledge and behaviour and is related to professional competence. Therefore, determination of self-efficacy related to practices plays a major role in the way education is transferred. In this study, a scale was developed that measures individuals' episiotomy self-efficacy. This scale can distinguish between individuals with high or low episiotomy self-efficacy and individuals who take episiotomy course or not.

Clinical trial number Not applicable.

Keywords Episiotomy, Self-efficacy, Scale development, Midwifery

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Introduction

Self-efficacy is defined as an individual's perceived ability to learn or perform actions at a certain level [1, 2]. and has been emphasized as significant motivator for the individual. Self-efficacy shows our belief in performing a skill. According to social cognitive theory, our beliefs determine which life roles and activities we will move towards or away from, how much effort we will spend on them, how we feel while doing them, and how well and for how long we will do them. Self-efficacy is not a single-factor theory. It is part of a network of cognitive, behavioural and contextual variables [2, 3]. Motivation is defined as the internal cognitive and emotional processes that encourage and sustain goal-directed actions and outcomes [2] and it has been reported that both intrinsic and extrinsic motivation affect student self-efficacy, which in turn affects academic performance [4, 5].

Academic self-efficacy has been demonstrated to have a significant effect on students' academic performance, learning and motivation [6–9]. Students with low self-efficacy are more likely to exhibit fear, avoidance, procrastination and a tendency to abandon tasks without completion; those with high levels of self-efficacy are more likely to trust themselves to find a solution to complex problems when they encounter them, to be patient in a difficult process, to make more effort and to persist for more extended periods to overcome difficulties [7, 10]. Students with high self-efficacy tend to attribute their failures to lower attempts rather than to low abilities, whereas those with low self-efficacy tend to attribute their failures to low abilities [7, 11]. Furthermore, self-efficacy has been demonstrated to influence job performance. Studies have indicated that healthcare professionals with high self-efficacy exhibit high levels of performance, low burnout levels and effective coping strategies in the face of stress. This contributes to achieving positive results regarding their work by increasing their productivity, satisfaction, motivation and harmony [12–15].

In midwifery education, the objective is to integrate practical and theoretical knowledge with clinical experience and transfer it to professional life after graduation [16]. Midwives play a pivotal role in safeguarding and enhancing the health of women, fetuses and newborns, particularly within the context of society. In order for midwives to perform these functions, it is essential that their self-efficacy is evaluated and developed in conjunction with sufficient knowledge and equipment during their university years [17]. The value of self-efficacy is twofold: it is essential to recognize the difficulties encountered when applying theory in practice; and focusing on factors that will improve learning conditions is essential. In addition, self-efficacy is a mediator between knowledge and behavior and is related to professional competence. The evaluation of self-efficacy in healthcare professionals and students can be a suitable predictor of their clinical skills, given the significant and positive relationship between self-efficacy and performance [18, 19].

Episiotomy is a surgical incision made in the vagina and perineum by midwives during childbirth. It is performed to widen the vaginal opening [20]. Although its prevalence varies worldwide, various studies have reported that it is used in approximately 15–95% of births [21, 22]. It is used as a routine intervention in almost all first births in European countries, the United States, and Turkey [23–25]. Episiotomy should be performed by a midwife or obstetrician with the requisite expertise [26]. Although episiotomy is performed for indications such as preventing perineal trauma and protecting the pelvic floor, the benefits of routine episiotomy remain controversial [27, 28]. Moreover, it is associated with various complications, including postpartum urinary incontinence, pain, sexual dysfunction, perineal rupture, delayed wound healing, hematoma, and distressing conditions that may hinder infant care and breastfeeding [21, 29, 30]. Particularly, poor healing of the episiotomy site can result in unfavorable cosmetic outcomes and wound-related complications [30]. Therefore, correct application and repair of episiotomy is of significant importance for the psychological and physiological health of the mother following childbirth. If this process is not managed correctly, it may reduce women's quality of life [26, 31]. Consequently, it is paramount to equip students with the requisite skills to perform episiotomies efficiently, enhancing their self-efficacy [26, 32].

Students must possess a high level of self-efficacy in order to fulfill their responsibilities effectively and make the appropriate decisions in practice. Students with high self-efficacy perform better and achieve more successful application results [33]. If the students' self-efficacy levels are known at the time of providing episiotomy training, they can be assisted in developing strategies that will facilitate their learning. This approach enables faculty members to gain a deeper understanding of their students and, in turn, allows students to gain a more nuanced understanding of themselves. It is well established that students who engage actively cognitively, motivationally and behaviorally, and work regularly and systematically (self-regulated), have an easier time learning, are more successful and have a higher level of self-efficacy [34, 35]. There is an episiotomy skills self-efficacy scale in the literature [36]. This scale measures the level of self-efficacy for the steps necessary for opening and repairing the episiotomy. However, there is no tool that measures the individual's self-efficacy in terms of cognitive, affective, motivational and psychomotor aspects of episiotomy application. This study aimed to contribute to the existing literature by developing and validating a new

measurement tool for episiotomy self-efficacy, which is currently lacking in the existing literature.

Methods

The study was designed as a scale development study, guided by the eight-stage process outlined by (DeVellis, 2003) which was followed to determine the scale's development. The procedures carried out during each stage are described in detail below.

Determining the purpose of the scale

The necessity for a self-efficacy scale for episiotomy repair has been identified by researchers engaged in episiotomy studies with the intention of utilizing such a scale in their respective studies. Following completion of the research conducted for this purpose, no measurement tool was identified that could be employed to determine the episiotomy self-efficacy levels of individuals. Consequently, the development of a scale to measure the level of self-efficacy in episiotomy repair for both students and professionals trained in this field has been proposed for use in studies in the field of episiotomy.

Creating an item pool

In this stage of the study, resources on episiotomy education and studies on episiotomy were examined and an item pool was constructed in collaboration with experts who provide education on episiotomy according to the defined topics. During the development of the item pool, studies on self-efficacy and scales designed to assess self-efficacy levels were also considered [24, 26, 37]. In the process of creating the item pool, scale items were developed under four categories: cognitive, emotional, motivation and psychomotor. These sub-dimensions were derived from Bandura's (1995) conceptualization of self-efficacy as comprising four key indicators [38].The item pool comprised 20 items, with five items representing each of the four sub-dimensions.

Deciding on the format

The format of the scale was discussed by the researchers prior to converting the prepared items into the chosen format. The Likert scale is a commonly used format in scale development studies [39], with the majority of developed scales employing five-point answers [40]. In addition to the self-efficacy scales examined [41, 42] was decided to use five-point Likert-type items to ensure the usefulness of the scale. This included considerations such as ease of application, scoring and calculation.

Expert opinion

Expert opinion forms were prepared for the scale and submitted to expert opinion in terms of language, form, suitability and understandability. At this stage, opinions were received from a total of nine experts, including six field experts, two language experts and one measurement and evaluation expert.

Content validity

The content validity rates of the items were evaluated by examination of the data gathered from experts. Content validity represents a method employed in transforming qualitative studies based on expert opinions into statistically quantitative studies [43]. The content validity technique developed by [44] necessitates a minimum of five expert opinions for its application and the content validity rate is calculated by subtracting the ratio of experts expressing the necessary/appropriate opinion from the total number of experts expressing opinions on the item [43]. According to this calculation, if half of the experts indicate that an item is necessary, the content validity rate will be zero; if more than half of the experts indicate that an item is necessary, the rate will be positive; and if less than half of the experts indicate that an item is necessary, the rate will be negative. In the event that the content validity rate is zero or negative, the item in question is eliminated at the outset. Conversely, for positive values, the item is subjected to a statistical significance test [43]. In a group of nine experts, the minimum value for the content validity rate, which should be at the level of 0.05, was determined as 0.75 [45]. This value was taken as the basis for the content validity rate in this study. The content validity rates calculated for each item as a result of expert opinions are given in Table 1. Moreover, it should be noted that the final category was classified as 'psychomotor' in accordance with expert opinions.

After examining the construct validity rates, one item each from the motivation (I would like to perform an episiotomy during birth) and psychomotor (I can fix the suture material on the needle holder correctly) factors was removed from the scale in line with expert opinions. Since the item in the motivation factor was perceived as a referral to episiotomy in every situation, the item in the psychomotor factor was also criticized because it was not a situation specific to episiotomy and was removed from the scale. In three other items, corrections have been made in terms of grammar.

Data collecting and participants

After the scale items had been removed and edited according to the expert opinions, the candidate scale was presented to the participants online. From this sample group of students studying midwifery at university, a total of 246 students aged 19–35 years were included in the study. Of these participants, 160 (65%) had received episiotomy training before. The final study group comprised 68 s-year, 92 third-year and 86 fourth-year students. First-year students were excluded from the study.

Table 1 Content validity rates of scale items

Factor	Item Number	Suitable	Can be edited	Not applicable	Content Validity Rate
Cognitive	Item 1	9	0	0	1
	Item 2	9	0	0	1
	Item 3	9	0	0	1
	Item 4	9	0	0	1
	Item 5	9	0	0	1
Emotional	Item 6	8	1	0	0.78
	Item 7	8	1	0	0.78
	Item 8	9	0	0	1
	Item 9	9	0	0	1
	Item 10	9	0	0	1
Motivation	Item 11	9	0	0	1
	Item 12	6	0	3	0.33
	Item 13	8	1	0	0.78
	Item 14	9	0	0	1
	Item 15	9	0	0	1
Psychomotor	Item 16	9	0	0	1
	Item 17	9	0	0	1
	Item 18	9	0	0	1
	Item 19	9	0	0	1
	Item 20	5	2	2	0.11
Number of Experts		9			
Content Validity Criteria		0.75			
Content Validity Index		0.96			

Evaluating the items

Validity and reliability tests were conducted on the scale using the data obtained after its application. The findings of the validity and reliability analyses of the scale are presented in the section below.

Finalizing the scale

As a consequence of validity and reliability analyses, the "Episiotomy Self-Efficacy Scale" was developed, consisting of a total of 17 items distributed across four sub-dimensions: cognitive, emotional, motivation and psychomotor. As a result of the validity and reliability analyses, the 17-item Episiotomy Self-Efficacy Scale was confirmed by factor analyses and proven to be reliable by reliability analyses. Other information regarding the validity and reliability studies conducted is presented in the findings and discussion sections.

Ethical approval

Ethics committee permission was obtained from SAKARYA University Social and Human Sciences Ethics Committee for the conduct of the research (Number: E-61923333-050.99-316821 Date: 30/11/2023). The study was conducted in accordance with the Helsinki Declaration.

Results

This section presents the findings of the validity and reliability studies of the scale. The internal consistency coefficient was employed to assess the scale's reliability and factor analysis was used to assess the construct validity of the scale. Confirmatory factor analysis (CFA) was employed because the structure of the factors and items had been determined prior to the analysis.

Validity

The construct validity of the scale was tested using CFA. Developed by Joreskog, CFA is a type of structural equation modeling [46, 47]. It is an analytical technique used to assess the congruence between the structures derived from the extant literature and the empirical data. In this study, CFA was conducted by utilizing the AMOS 24.0 program. The data collected with the Episiotomy Self-Efficacy Scale, which comprises cognitive (5 items), emotional (5 items), motivation (4 items) and psychomotor (4 items) factors (a total of 18 items), were initially examined. Before conducting CFA, it is essential to ascertain whether the data are normally distributed and the sample size is sufficient [48]. The data were subjected to a preliminary examination to ascertain their normality. This entailed the calculation of skewness and kurtosis values, as well as an assessment of the number of missing values.

There has yet to be a consensus regarding the optimal sample size for CFA [46]. Kline (2023) proposed that the

number of parameters for the sample size should be ten times the number of items and at least 200 [49]. In this study, CFA was conducted with a sample size of ten times the number of items (18 items) and data collected from 246 people above the lower limit of 200. Conversely, as CFA is also a structural equation model, it has a score of at least 88 for four latent variables and 18 observed variables, as indicated by the scale prepared according to the "Daniel Soper A-Priori Sample Size Calculator for Structural Equation Models" tool used in the sample calculation for structural equation modeling. However, further data are required. The values above indicate that the 246 data points collected within the scope of the study are sufficient for CFA. Two levels of CFA were conducted in this study, as described below.

First-level CFA

The relationship between the four factors and the 18 items in the scale prepared in the first-level CFA was analyzed. In the first examinations for CFA, the goodness of fit values of the model created were not found to be very good, especially RMSEA (>0.08). For this reason, the modification indices values were examined and the item with the highest value in terms of modification indices and the lowest value in terms of item loading was selected and removed from the model. In the analysis, the factor load of the second item of the motivation factor found to be low (0.528) and a modification was recommended for this item. Consequently, the item was removed and the analysis was repeated. The fit index values calculated for the first-level CFA are presented in Table 2. Consequently, the model demonstrates a satisfactory and tolerable fit.

In the CFA results conducted for the sub-factors and the 17-item full scale, when the factor loadings of the items are examined it is seen that they vary between 0.67 and 0.95. Correlation values between factors vary between 0.46 and 0.81. The first-level CFA results are given in Fig. 1.

Table 2 First- and second-level confirmatory factor analysis (CFA) fit indices

Model Fit Indices	1st level CFA	2nd level CFA
X2 / sd	2.457	2.545
RMSEA	0.778	0.079
PGFI	0.650	0.658
PNFI	0.781	0.792
GFI	0.880	0.875
AGFI	0.838	0.834
IFI	0.964	0.961
NFI	0.940	0.937
TLI	0.964	0.953
CFI	0.964	0.961

Second-level CFA

A second-level CFA was conducted after adding the episiotomy self-efficacy latent variable to the model. The goodness-of-fit values calculated for the second-level CFA are presented in Table 2. The values above demonstrate that the constructed scale model is compatible. The results of the second-level CFA are presented in Fig. 2. The factor loadings were found to be 0.62 for the cognitive factor, 0.86 for the emotional factor, 0.93 for the motivation factor and 0.84 for the psychomotor factor.

Reliability

Cronbach's alpha coefficient for internal consistency was used to determine the reliability of the developed Episiotomy Self-Efficacy Scale. Ranging between 0 and 1, Cronbach's alpha is expected to be greater than 0.7. The lower limit of Cronbach's alpha for the reliability of the measurement tool is taken as $\alpha = 0.70$ [50]. Cronbach's alpha calculated for the entire 17-item scale was found to be 0.955, showing that the internal consistency of the scale is high (Supplementary Material 1). Values for the sub-factors were calculated as 0.962 for cognitive (5 items), 0.952 for emotional (5 items), 0.845 for motivation (3 items) and 0.931 for psychomotor (4 items). These values are greater than 0.7 and show that the sub-factors are reliable.

In addition to the internal consistency coefficients for the overall scale and sub-factors, item–total statistics were examined to see the relationship levels of each item with the total item score of the scale and whether the relationship was significant. For each scale item, the scale score averages, scale score variances, corrected item–total correlations, square of the multiple correlation coefficient and Cronbach's alpha values when the item is deleted are given in Table 3. It was observed that the corrected item–total correlations of the scale items were between 0.573 and 0.810 (Table 3).

To examine the scale items for item discrimination, the averages of the upper 27% and lower 27% total scale and sub-factor scores were compared. The results of these analyses show that there is a significant difference (Table 4) in terms of sub-factor and total scale scores. This finding shows that the scale can distinguish between people with high and people with low episiotomy self-efficacy.

Finally, independent sample *t*-test results are given in Table 5 to examine the change in the total and sub-factor scale scores according to the status of taking an episiotomy course. The episiotomy self-efficacy scores of the students who have taken an episiotomy course ($X = 61.143$) were significantly higher ($p = 0.000$, $t = 5.697$) than the scores of students who did not take an episiotomy course ($X = 48.744$). Thus, it can be stated that the Episiotomy Self-Efficacy Scale distinguishes between

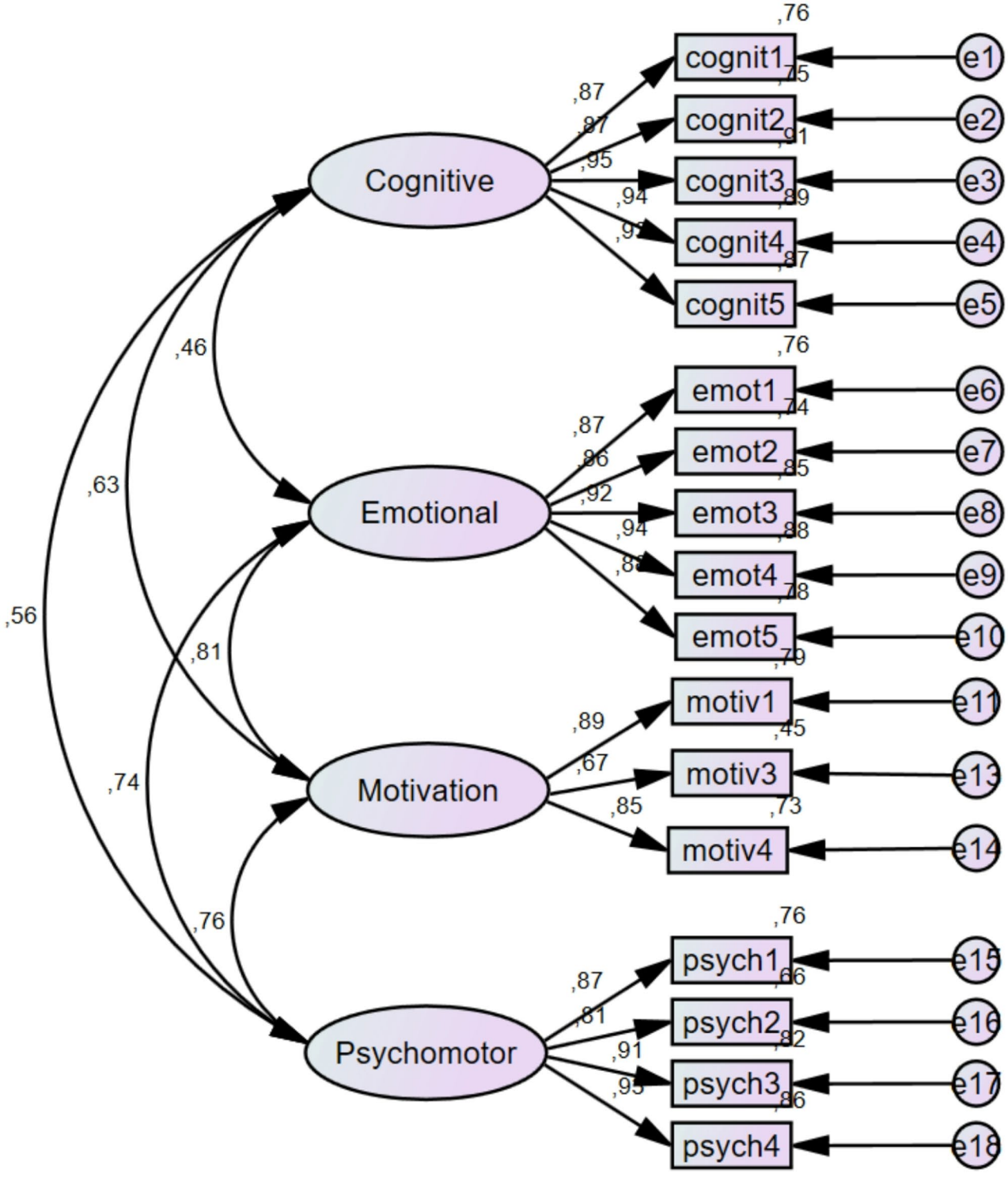

Fig. 1 First-level confirmatory factor analysis (CFA) standardized values

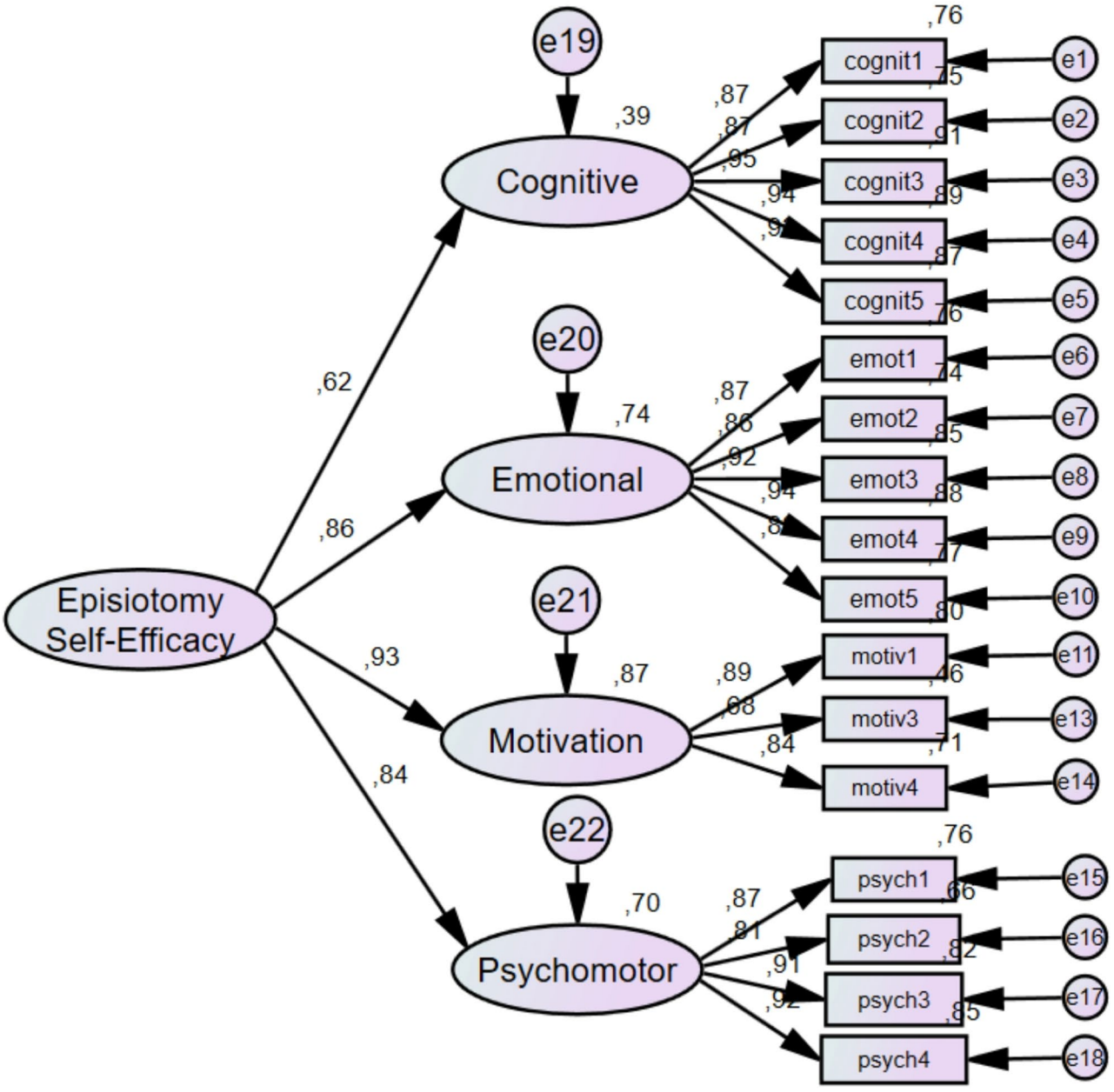

Fig. 2 Second-level confirmatory factor analysis (CFA) standardized values

people who have received episiotomy training and those who have not.

Discussion

Self-efficacy is an individual's perceived ability to learn or perform actions at a certain level [1]. Episiotomy is one of the important interventions among the duties of midwives. In order for students to acquire this practical skill, their self-efficacy levels must be high [26]. There is a measurement tool named episiotomy skills self-efficacy scale in the literature [36]. This measurement tool measures the ability to perform episiotomy application steps. In our study, the feelings about the whole episiotomy application and the perspective (anxiety, worry, fear) about being successful in episiotomy application are measured. When the studies on the acquisition of episiotomy skills were examined in the literature, it was seen that general self-efficacy scales were used [24, 51]. A self-efficacy measurement tool that is specific to episiotomy provides a much more accurate revelation of the student's self-efficacy. The results obtained are a guide for the instructor who will provide students with the skill. An instructor who knows the self-efficacy of the student on the subject can increase the quality of education by

Table 3 Item–total statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
cognitive1	53,4675	244,691	,698	,756	,953
cognitive2	53,3333	246,721	,684	,766	,953
cognitive3	53,4228	243,951	,696	,882	,953
cognitive4	53,5732	244,074	,712	,874	,953
cognitive5	53,3374	243,988	,721	,841	,953
emotional1	53,8089	245,290	,744	,759	,952
emotional2	53,5407	240,258	,810	,765	,951
emotional3	53,7927	244,753	,723	,829	,953
emotional4	53,6870	242,379	,755	,850	,952
emotional5	53,7724	244,977	,756	,772	,952
motivation1	53,5610	245,235	,769	,727	,952
motivation3	52,9472	251,691	,573	,500	,955
motivation4	53,7073	243,261	,777	,696	,952
psychomotor1	53,4797	244,585	,770	,737	,952
psychomotor2	52,9634	248,550	,660	,681	,954
psychomotor3	53,2520	246,540	,762	,787	,952
psychomotor4	53,2967	243,720	,788	,799	,952

Table 4 Independent *t*-test results for the lower 27% and upper 27% groups

	Group	*N*	Mean	Std. Deviation	t	df	*p*
Cognitive	Lower	92	11,9022	5,49737	-15,231	135,951	,000
	Upper	92	21,7174	2,82581			
Emotional	Lower	92	10,0435	4,32959	-18,984	162,550	,000
	Upper	92	20,4891	3,01824			
Motivation	Lower	92	7,4130	2,68554	-16,542	159,055	,000
	Upper	92	12,9891	1,80046			
Psychomotor	Lower	92	10,1522	4,00257	-14,623	149,665	,000
	Upper	92	17,2826	2,41936			
Total	Lower	92	39,5109	11,72814	-23,384	145,081	,000
	Upper	92	72,4783	6,73106			

Table 5 Independent *t*-test results for taking an episiotomy course

	Taking course	*N*	Mean	Std. Deviation	t	df	*p*
Cognitive	Yes	160	19,3188	4,53688	8,794	131,144	,000
	No	86	12,4302	6,45808			
Emotional	Yes	160	16,2250	5,57053	2,762	156,634	,006
	No	86	13,9884	6,30125			
Motivation	Yes	160	10,7438	3,19836	3,603	176,771	,000
	No	86	9,2209	3,14138			
Psychomotor	Yes	160	14,8563	4,12668	2,871	153,572	,005
	No	86	13,1047	4,77993			
Total	Yes	160	61,1438	14,65702	5,697	152,773	,000
	No	86	48,7442	17,08469			

creating an implementation plan accordingly. In a study in which midwifery students' perceptions of self-efficacy in episiotomy skills were examined, it was reported that students' self-efficacy levels varied significantly according to their willingness to choose the department and their perception of themselves as sufficient in both theoretical knowledge and practical skills. In addition to determining the self-efficacy levels of the students, it was suggested to determine the individual characteristics that would affect them [25]. In this direction, the aim of our study is to develop a measurement tool that measures the extent to which individuals consider themselves competent against episiotomy application.

The primary purpose of CFA is to determine the ability of a predefined factor model to fit the observed data set [52]. The fit indices of the scale items must be compatible with the values recommended in the literature. Fit indices considered are GFI (goodness of fit index), CFI (comparative fit index) and RMSEA (root mean square error of approximation), which in CFA take values between 0 and 1. As GFI and CFI approach 1, stronger results are obtained. In the current literature, fit indices of greater than 0.90 indicate a good fit. However, for RMSEA, stronger results are obtained as its value approaches 0 [53, 54] for a good fit, the RMSEA value should be less than 0.08. After the second-level CFA conducted in this research, RMSEA was found to be 0.079, CFI was 0.961 and GFI was 0.875. Thus, it turns out that the created scale has a good fit. In this study, two levels of CFA were conducted. The relationship between the four sub-dimensions and 18 items in the scale prepared in the first-level CFA was analyzed. Due to the low factor loading of one item, factor analysis of 17 items was conducted again. It was later determined that all factor loadings were above 0.500 and varied between 0.67 and 0.95, as suggested by the literature. According to factor analysis, the number of items of the scale was reduced to 17 and the items were collected in four sub-dimensions.

Another important step in reliability analysis is internal consistency, which determines whether all items of the scale are capable of measuring the measured variable. İt reveals whether the items are relevant to the subject matter to be measured. Cronbach's alpha was calculated here as a measure of the internal consistency of the items in the scale and it has been reported that an alpha value of 0.60 and above proves internal consistency, with reliability increasing as it approaches 1; it is recommended that this value be between 0.60 and 1.00 [55]. Additionally, if $0.60 \leq \alpha < 0.80$, the scale is interpreted as highly reliable, and if $0.80 \leq \alpha < 1.00$, the scale is interpreted as highly reliable [56]. Cronbach's alpha for the scale was calculated as $\alpha = 0.955$ and values for the sub-dimensions range between 0.845 and 0.962. According to these data, it was concluded that the scale and its sub-dimensions provide internal consistency.

In our study, the self-efficacy level of students who took episiotomy course was found to be significantly higher. Similarly, in the study of Demirel et al. (2020), students' self-efficacy levels increased significantly after the course [51].Therefore, it is seen how effective determining students' episiotomy self-efficacy level is in measuring the effectiveness of the course. By measuring students' self-efficacy levels before and after the course, the effectiveness of episiotomy courses given in different ways can be demonstrated in a much more concrete way.

Conclusion

It is considered important that healthcare personnel involved in the birth process have knowledge and skills in episiotomy [57]. In this study, a scale was developed that measures individuals' episiotomy self-efficacy according to cognitive, emotional, motivation and psychomotor sub-dimensions. The scale items have not been used or published anywhere before. Expert opinion was obtained for the face validity and usefulness of the developed scale and construct validity was tested with CFA. Reliability analysis of the scale also shows that it provides reliable results both on a sub-factor basis and in terms of the total score. Through analysis, it was seen that this scale distinguished individuals with high or low episiotomy self-efficacy and individuals who took or did not take an episiotomy course. It can be said that the Episiotomy Self-Efficacy Scale developed as a result of this study is a valid and reliable measurement tool for measuring individuals' episiotomy self-efficacy. The developed scale will be used in studies in the field of episiotomy and will contribute to increasing the number of studies in this field, examining episiotomy self-efficacy from many perspectives, determining the factors that affect and effect episiotomy self-efficacy and improving episiotomy self-efficacy.

Strength and limitations of the work

The most important feature of the developed Episiotomy Self-Efficacy Scale is that it measures episiotomy self-efficacy according to most known self-efficacy indicators [38] (cognitive, emotional, motivational and psychomotor) and can independently measure individual characteristics according to the sub-dimensions of the scale. No study was found in the reviewed studies that used self-efficacy indicators regarding episiotomy. A possible limitation is that this study was conducted with midwifery students studying at a state university. The fact that the participants are students at the same university is a limitation of the study. However, this situation was preferred by the researchers because the episiotomy training provided was not affected by the characteristics of the institution. In this respect, it is one of the strengths of the study. In future studies, the episiotomy self-efficacy of students studying in different institutions and different countries can be examined and compared. Another limitation of the study is the inclusion of second-year students who have just started taking department-specific courses. However, it also constitutes a strong aspect of the research in terms of testing the discrimination of the developed scale between individuals who received episiotomy training and those who did not. Since there was no scale measuring similar characteristics published during the data collection process for this study, criterion validity could not be performed. However, a scale belonging to Hadimli et al. (2023) was published while the study

report was being prepared [36]. Since the data collection process was completed, comparison with this scale could not be made. Since the structure of the scale had not been validated before this study, its relationship with a different variable could not be examined. In future studies, the relationship and effects of other self-efficacy types and variables that may be related to episiotomy self-efficacy can be examined.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12912-025-03578-9.

Supplementary Material 1

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Author contributions
ZT: Study design, Manuscript writing, Critical revisions for important intellectual content. BY: Data collection, Study supervision, Manuscript writing. ZDK: Data analysis, Manuscript writing, Study design, Critical revisions for important intellectual content. YHB: Manuscript writing, Critical revisions for important intellectual content.

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Data availability
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
Ethics committee permission was obtained from Sakarya University Social and Human Sciences Ethics Committee for the conduct of the research (Number: E-61923333-050.99-316821 Date: 30/11/2023). Before starting the study, the purpose of the study was explained to the participants and informed consent was obtained. The study was conducted in accordance with the Helsinki Declaration.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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