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Nurses' self-efficacy levels and influencing factors in the care of children with epilepsy

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ABSTRACT

Aim: This study investigated nurses' self-efficacy in caring for children with epilepsy and the factors influencing it.
Method: This descriptive-cross-sectional and correlational study was conducted with 135 nurses working in pediatric clinics at a university's medical faculty hospital. Data were collected between using a socio-demographic data collection form, the scale of self-efficacy in nursing care of children with epilepsy, the self-efficacy-sufficiency scale. Descriptive statistics and multiple linear regression analysis were used to analyze the data.
Results: Three models were created to analyze the relationships between the study variables and nurses' self-efficacy. The effect on nurses' self-efficacy levels in the care of children with epilepsy was explained by their descriptive characteristics at a rate of 27.8% in the first model, by the Self-Efficacy-Sufficiency Scale at a rate of 18.5% in the second model, and by their descriptive characteristics and self-efficacy at a rate of 35.5% in the third model. Age, number of children, having receivede ducation on children with epilepsy at school, and the total self-efficacy scale score were found to be relevant factors in predicting the self-efficacy of nurses in the care of children with epilepsy ($p < 0.05$).
Conclusion: It was determined that nurses' self-efficacy in caring for children with epilepsy was above average and that factors affected this level of self-efficacy.
Implications for practice: Nurses' high self-efficacy in caring for children with epilepsy increases the quality of care they provide. It is recommended that detailed evidence-based and case-based courses on childhood epilepsy management be offered both in in-service training and nursing curricula.

Introduction

Epilepsy is one of the most common neurological childhood disorders (Lee et al., 2019; Sirven, 2015). According to the World Health Organization, epilepsy affects approximately 50 million individuals (World Health Organization, 2024). For this reason, it has been accepted as one of the most common chronic and non-communicable diseases worldwide (Thomas & Smith, 2011; World Health Organization, 2024). Active epilepsy affects approximately 4 to 10 people out of every 1000 individuals, and 50% start in childhood. Approximately five million people are diagnosed with epilepsy every year in the world (World Health Organization, 2024). It is known that 10.5 million children under the age of 15 have active epilepsy worldwide and that it is seen in 1–5% of children (World Health Organization, 2019).

Healthcare professionals working in pediatric clinics, pediatric emergency services, and pediatric intensive care units frequently encounter pediatric patients having seizures (Caplan et al., 2016; Hargreaves et al., 2019; İyi et al., 2024). Healthcare professionals must quickly detect and intervene in seizures appropriately. If not intervened appropriately, it may have serious consequences such as permanent neurological dysfunction or intractable epilepsy in children and even result in death (Glauser et al., 2016; Sirven, 2015). Pediatric nurses are the first among healthcare professionals to notice seizures in epilepsy patients in the clinical setting (Caplan et al., 2016; Hargreaves et al., 2019; Lee et al., 2019; Mammas & Spandidos, 2020). They play a very important role in the management of epilepsy (Hargreaves et al., 2019; Mammas & Spandidos, 2020). Therefore, they should recognize the factors that cause seizures, know the possible complications of seizures, gain expertise in epilepsy, provide patient- and family-centered nursing care, and be at the forefront of epilepsy management (Clore, 2010; İyi et al., 2024; Spray, 2015). In particular, pediatric nurses should receive comprehensive training in evidence-based epilepsy management and have guidelines or protocols for correct and systematic

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nursing interventions in the event of a seizure in a child with epilepsy. Having these guidelines and protocols will facilitate seizure management and prevent delays in interventions (NICE Guideline, 2022; Mammas & Spandidos, 2020; Messahel et al., 2022).

In recent years, the concept of nurses' self-efficacy has played an important role in the care of children with epilepsy (Çapa et al., 2023). Self-efficacy was first used by Albert Bandura in 1977. It refers to an individual's belief in their ability to cope with a particular situation or task (Bandura, 1977). It enables a person to gain a greater sense of control over their environment and their own life and to competently cope with and adapt to the challenges of life (Bandura, 1977; Bandura & Adams, 1977). Self-efficacy is among the most important factors affecting pediatric nurses' performance and plays a critical role in managing the care of children with epilepsy (Alavi et al., 2017; Aviles Gonzalez et al., 2019; Bahrami et al., 2021; Çapa et al., 2023; Köse et al., 2024). Nurses with high self-efficacy increase the quality of care in pediatric services and thus improve individual and institutional performance (Bahrami et al., 2021; Sargent, 2012; Yoo & Cho, 2020). According to a study, professional knowledge of child care, experience, care motivation, and an effective education system are the factors affecting the self-efficacy of pediatric nurses (Alavi et al., 2015). It is thought that pediatric nurses who have good professional knowledge, are experienced and motivated, and have received good theoretical and practical training (theory and practice, simulation programs) may have high self-efficacy levels (Alavi et al., 2015; Lee et al., 2019). The theoretical framework of social cognitive theory guided both variable selection and model development in this study (Bandura, 1977; Bandura & Adams, 1977). Consistent with this framework, variables were chosen to represent individual, professional, and organizational determinants of self-efficacy, including nurses' educational background, clinical experience, epilepsy-related training, and pediatric practice context. This approach ensured that the analytical model was theoretically driven and focused on identifying meaningful predictors of epilepsy-specific self-efficacy.

In the literature, nurses' self-efficacy has frequently been examined in relation to outcomes such as clinical skills, quality of care, professional performance, and job satisfaction (Abbas et al., 2019; Alavi et al., 2017; Aviles Gonzalez et al., 2019; Bahrami et al., 2021). However, a large portion of these studies focus on nurses' general self-efficacy perceptions and do not adequately address self-efficacy dimensions specific to a particular disease or care area. Yet, self-efficacy is context- and task-specific, and high general nursing self-efficacy may not necessarily indicate sufficient self-efficacy in patient groups with complex and specific care needs, particularly in pediatric epilepsy care (Bahrami et al., 2021; Çapa et al., 2023). Pediatric epilepsy care requires advanced knowledge and skills such as seizure recognition and management, emergency intervention, safe administration of antiepileptic drugs, education for the family and child, and psychosocial support (İyi et al., 2024; Spray, 2015). In contrast, most previous studies have addressed epilepsy-related self-efficacy from the perspective of the patient or caregiver; the self-efficacy levels specific to epilepsy care in pediatric settings have largely been overlooked (Ayar et al., 2020; Brooks & Palau, 2023). Furthermore, the current literature contains limited findings regarding the individual, professional, and institutional factors influencing nursing self-efficacy specific to pediatric epilepsy care (Alavi et al., 2015; Lee et al., 2019). Therefore, unlike general nursing self-efficacy, the level and determinants of self-efficacy specific to pediatric epilepsy care are still not sufficiently known (Çapa et al., 2023; Lee et al., 2019). This knowledge gap highlights the need for specific studies aimed at revealing the self-efficacy levels of nurses in pediatric epilepsy care and the factors influencing them. Therefore, this study was conducted to describe nurses' levels of self-efficacy in caring for children with epilepsy and to identify the factors that predict epilepsy specific self-efficacy, with implications for pediatric nursing practice, education, and policy.

Methods

Study design

A descriptive-cross-sectional and correlational research design was employed.

Population and sample of the study

The study population consisted of 141 nurses working in pediatric clinics at the medical faculty hospital of a university in the central region of Türkiye. These clinics were pediatric intensive care, neonatal intensive care, pediatric surgery, and intensive care units; pediatric infectious diseases department; pediatric allergy, immunology, cardiology, oncology, and endocrine departments; pediatric nephrology, gastroenterology, neurology departments; and pediatric emergency and outpatient clinics. The minimum sample size was calculated on the GPOWER software as 127 nurses, based on the regression analysis of 12 predictors, a significance level of 0.05, a power value of 80%, and a medium effect size (Cohen $f^2 = 0.15$). Data were collected using the convenience sampling method. Considering the accessibility, it aimed to reach the entire population without conducting a sample selection procedure. The study was conducted with nurses who worked in pediatric clinics and volunteered to participate. Nurses on annual leave or sick leave were not included. The study was conducted with 135 nurses; see Fig. 1.

Data collection tools

Data were collected using a socio-demographic data collection form, the scale self-efficacy in nursing care of children with epilepsy scale, and the self-efficacy-sufficiency scale.

Socio-demographic data collection form

This form, filled out by nurses working in the pediatric clinics, consisted of 12 questions about nurses' age, gender, marital status, number of children, education status, total work experience, pediatric unit (pediatric ward, pediatric intensive care, neonatal intensive care, pediatric emergency ward, pediatric outpatient clinic, or pediatric oncology), type of shift work, the number of patients provided daily care, weekly working hours, status of having received education on children with epilepsy at school, and status of having received education on children with epilepsy during in-service training at the hospital (Abbas et al., 2019; Çapa et al., 2023; Elahi et al., 2024).

The scale of self-efficacy in nursing care of children with epilepsy (SSENCCE)

This scale is used to measure the self-efficacy of nurses who care for children with epilepsy. It was developed by Sherer and Adams (1983) and was translated into Korean by Yang in 1999. The Korean version was adapted to assess nurses' self-efficacy in caring for children with epilepsy and was used by Lee et al. (2019). The scale consists of 14 items and a single sub-dimension. Each item is evaluated with one of the following options: 1- strongly disagree; 2 - disagree; 3 - agree; and 4 - strongly agree. The score given to each item is taken as basis. Items 6, 9, 10, 12, 13, and 14 on the scale are reverse-scored. Scores range from a minimum of 14 and a maximum of 56. The scale has no cut-off point; low scores indicate low self-efficacy, and high scores indicate high self-efficacy. Cronbach's alpha coefficient of the scale is 0.77. It was adapted to Turkish by Çapa et al. (2023). This version consists of 12 items, a four-point Likert-type scale, and a single sub-dimension. The score given to each statement is taken as basis. Items 7, 8, 10, 11, and 12 are reverse-scored. Scale scores range from 12 to 48. A high total scale score indicates that the self-efficacy of nurses caring for children with epilepsy is high, and a low total score indicates low self-efficacy. Cronbach's alpha coefficient of the scale was found to be 0.90 (Çapa et al., 2023).

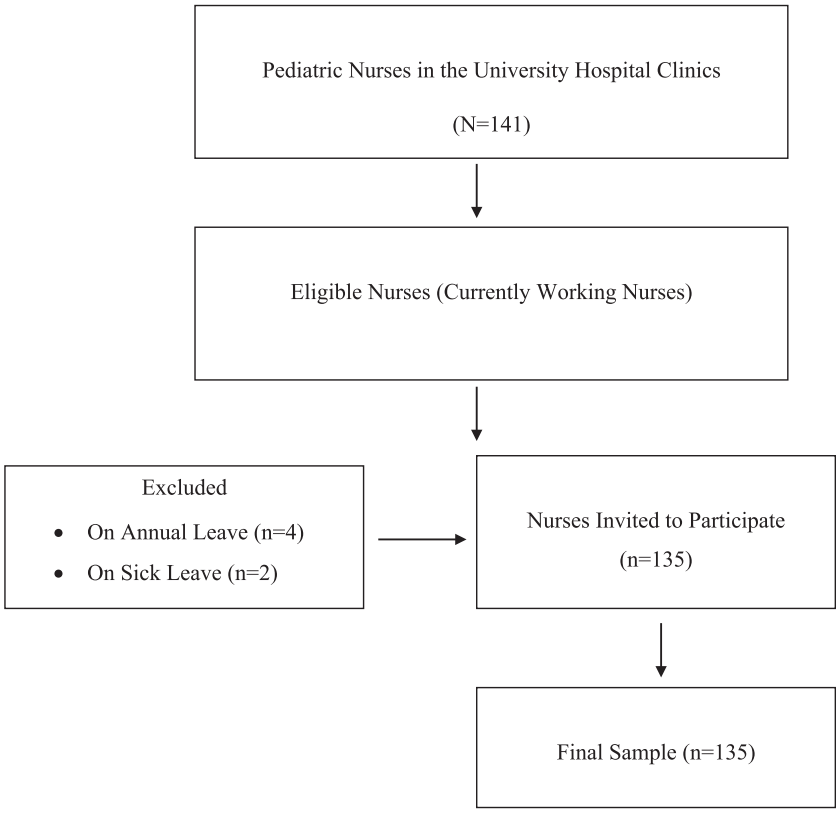

Fig. 1. Flow chart of participant inclusion and final sample size.

The self-efficacy-sufficiency scale (SESS)

This scale is not specific to any area but measures general self-efficacy perception. It was developed by Sherer and Adams (1983) and adapted to Turkish by Gozum and Aksayan (1999). It is a five-point Likert-type self-assessment scale consisting of 23 items. Each item on the scale is evaluated with one of the following options: 1 - Does not describe me at all; 2 - Describes me a little; 3 - Undecided; 4 - Describes me well; and 5 - Describes me very well. The score given to each item is taken as basis. Fourteen items (items 2, 4, 5, 6, 7, 10, 11, 12, 14, 16, 17, 18, 20, and 22) are reverse scored. A minimum of 23 and a maximum of 115 points can be obtained from the scale. There is no cut-off point; a high total score indicates that the individual's self-efficacy-sufficiency perception is at a good level. The scale has four sub-dimensions: starting behavior (items 2, 11, 12, 14, 17, 18, 20, 22); continuing behavior (items 4, 5, 6, 7, 10, 16, and 19); behavior completion (items 3, 8, 9, 15, and 23); fight with obstacles (items 1, 13, and 21). The Turkish version of the scale has demonstrated acceptable internal consistency, with a Cronbach's alpha coefficient of 0.81 (Gozum & Aksayan, 1999).

Nurses were contacted directly at their workplaces and informed about the purpose and procedures of the study. Data collection was planned flexibly in coordination with the head nurses in the clinics, according to the times when the nurses had the least workload or felt most comfortable. Data were collected between November 2024 and February 2025 through face-to-face interviews conducted in a quiet and private training room within the workplace. To ensure confidentiality, interviews were conducted in environments where third parties were not present, participation was voluntary, and no identifying information was recorded on the data collection forms.

Data analysis

The data were analyzed using the IBM SPSS 24.0 software package. Socio-demographic data were evaluated using mean, standard deviation, number, and percentage values. Skewness-Kurtosis tests were employed to determine the normality of the data. It was determined that the scale data were distributed between ±2. The prediction of nurses' self-efficacy level in the care of children with epilepsy by the independent variables was evaluated with multiple linear regression analysis. Multicollinearity between the variables included in the regression analysis was examined by variance inflation factor (VIF) and tolerance values. A VIF value below 10 and a tolerance value above 0.2 indicate no multiple correlations. In addition, Durbin Watson (DW) statistics were used to determine autocorrelation. In the DW statistics, a value between 1.5 and 2.5 indicates no autocorrelation. The statistical significance level was taken as 0.05.

Ethics committee approval

Before the study was initiated, approval of the Scientific Research and Publication Ethics Board of a university (Date: 25.09.2024, Decision No: 2024/160–1), institutional permission (03.10.2024-E.847444), and the necessary permission of the scale owners for the scales used in the study were obtained. The aim of the study was explained, and written and verbal consent was obtained from the nurses included in the study.

Results

The mean age of the nurses participating in the study was 38.38 ± 6.47 years, the number of children was 1.16 ± 0.96, the mean of the total work experience was 17.01 ± 7.13 years, the number of patients provided daily care was 8.53 ± 2.67, and the weekly working hours were 44.49 ± 3.81. According to the findings, 68.1% ($n = 92$) of the nurses were female, 66.7% ($n = 90$) were married, 46.7% ($n = 63$) had an undergraduate degree, 28.1% ($n = 38$) worked in the pediatric ward, 40.7% ($n = 55$) worked both day and night shifts, 85.9% ($n = 116$) had received training in children with epilepsy at school, and

61.5% ($n = 83$) had received this training during in-service training at the hospital. See Table 1 for details.

The mean score of the nurses was 38.86 ± 3.88 from the total self-efficacy scale in the care of children with epilepsy and 97.39 ± 12.04 on the total self-efficacy-ssufficiency scale. See Table 2 for details.

The effect of nurses' descriptive characteristics on the self-efficacy level of the nurses in the care of children with epilepsy was analyzed in the first model. This model included age, gender, marital status, number of children, education level, total work experience, department, type of shift work, the number of patients provided daily care, weekly working hours, the status of having received education on children with epilepsy at school, and the status of having received education on children with epilepsy during in-service training at the hospital. These variables significantly explained 27.8% of nurses' self-efficacy levels in caring for children with epilepsy. When the variables were examined individually, it was determined that age ($\beta = 0.452$), number of children ($\beta = -0.333$), and having received education on children with epilepsy at school ($\beta = 0.376$) significantly explained the effect on nurses' self-efficacy level in the care of children with epilepsy. See Table 3 for details.

In the second model, the effect of self-efficacy-sufficiency on the level of nurses' self-efficacy in the care of children with epilepsy was evaluated. The Self-Efficacy-Sufficiency Scale was included in this model. The scale significantly explained 18.5% of nurses' self-efficacy level in the care of children with epilepsy. See Table 4 for details.

The third model was established to evaluate the effects of nurses' descriptive characteristics and self-efficacy-sufficiency on their self-efficacy level in the care of children with epilepsy. This model included age, gender, marital status, number of children, education level, total work experience, department, type of work shift, number of patients provided daily care, weekly working hours, the status of having received education on children with epilepsy at school, the status of having received education on children with epilepsy during in-service training at the hospital, and the self-efficacy-sufficiency scale. These variables significantly explained 35.5% of nurses' self-efficacy level in caring for children with epilepsy. When the variables were examined individually, it was determined that only having received education on children with epilepsy at school ($\beta = 0.363$) and the self-efficacy-sufficiency scale ($\beta = 0.306$) significantly explained the effect on nurses' self-efficacy in the care of children with epilepsy. See Table 5 for details.

The significant predictors of nurses' self-efficacy in the care of children with epilepsy identified across the regression models are presented in Table 6.

Table 1
Distribution of participants according to socio-demographic characteristics.

Socio-demographic characteristics	Mean ± SD	Min.-Max.
Age	38.38 ± 6.47	23–50
Number of children	1.16 ± 0.96	0–4
Total work experience	17.01 ± 7.13	0–35
Number of patients provided care daily	8.53 ± 2.67	Mar-15
Weekly working hours	44.49 ± 3.81	40–60
	n	%
Gender		
Female	92	68.1
Male	43	31.9
Marital status		
Married	90	66.7
Single	45	33.3
Education		
High school	5	3.7
Associate degree	8	5.9
Undergraduate degree	63	46.7
Post-graduate degree	59	43.7
Department		
Department of pediatrics	38	28.1
Pediatric intensive care	24	17.8
Neonatal intensive care	13	9.6
Pediatric emergency department	28	20.7
Pediatric outpatient unit	11	8.1
Pediatric oncology	21	15.6
Type of shift work		
Permanent day shift	43	31.9
Permanent night shift	16	11.9
Both day and night shifts	55	*40.7*
24 h-shift	21	*15.6*
Status of having received education on children with epilepsy at school		
Yes	116	85.9
No	19	14.1
Status of having received education on children with epilepsy during in-service training at the hospital		
Yes	83	61.5
No	52	38.5

SD: Standart Deviation.

Discussion

Evaluation of pediatric nurses' self-efficacy levels in caring for children with epilepsy

Self-efficacy refers to an individual's confidence in their ability to successfully perform a specific task (Bandura, 1977). To begin and successfully complete a task, a high level of self-efficacy in that area is necessary (Bandura, 1977; Bandura & Adams, 1977). Nurses' abilities to make quick decisions, trust their professional skills, and mobilize the patient's potential are closely related to this concept (Alavi et al., 2017; Köse et al., 2024). Especially in the care of children with epilepsy, high self-efficacy plays a critical role in recognizing seizures, providing safe care, and effectively managing crisis situations (Çapa et al., 2023; Lee et al., 2019). Therefore, strengthening self-efficacy is essential in nursing practice to support health-promoting behaviors (Lee et al., 2019). The mean scores of the pediatric nurses participating in the study were 38.86 ± 3.88 out of 56 on the self-efficacy scale in caring for children with epilepsy and 97.39 ± 12.04 out of 115 on the self-efficacy-sufficiency scale. It was seen that the mean scores obtained were above the average level. There was no study in the literature on the self-efficacy levels of nurses in the care of children with epilepsy, so the results were discussed based on general literature information. Nurses' mean self-efficacy scores were also above the average level in the literature (Ghaleh et al., 2024;Handiyani et al., 2019; Soudagar et al., 2015). These studies were similar to our research. This situation may have been because pediatric nurses working with sensitive groups, such as infants and children, provide quality care and feel competent due to their careful behavior. In addition, most pediatric nurses participating in the study had undergraduate and graduate degrees, which may have been effective in having high professional awareness.

Factors affecting nurses' self-efficacy levels in caring for children with epilepsy

Age is a key factor predicting the self-efficacy levels of nurses caring for children with epilepsy. Studies in the literature have shown that nurses' self-efficacy levels increase with age (Pisanti et al., 2015; Yılmaz Koçak & Büyükyılmaz, 2019). The results of this study are consistent with the literature. According to Bandura, the most important source of self-efficacy accumulation is an individual's previous successful experiences (Bandura, 1977). With increasing age, individuals gain more experience in life, and their self-efficacy beliefs are positively affected. Therefore, an increase in self-efficacy levels with age is a desirable outcome (Bandura & Adams, 1977). The positive relationship between age and self-efficacy can be attributed to the fact that as a person ages, their knowledge, skills, experience, and position increase, leading to increased positive self-perceptions and self-confidence (Bandura & Adams, 1977; Pisanti et al., 2015). Therefore, an increase in self-efficacy levels with age is considered an expected and desirable situation in terms of professional development. However, other studies have determined that age does not affect the self-efficacy levels of

Table 2
Mean scores on the self-efficacy of nurses in the care of children with epilepsy and the self-efficacy-sufficiency scales ($n = 135$).

Scales	Mean ± SD	Minimum	Maximum
The self-efficacy of nurses in the care of children with epilepsy scale	38.86 ± 3.88	14.00	56.00
The self-efficacy-sufficiency scale	97.39 ± 12.04	23.00	115.00

nurses (Handiyani et al., 2019; Soudagar et al., 2015). These differences suggest that age alone may not be a determining factor in self-efficacy. Self-efficacy is shaped not only by chronological age but also by the quality of an individual's experiences, the education they have received, the clinical environment in which they work, and the professional support systems they have access to. Young nurses can achieve high levels of self-efficacy, especially in institutions where standardized clinical protocols are common, teamwork is strong, and in-service training is regularly provided. This may explain why age did not significantly predict self-efficacy in some samples. Furthermore, differences in the measurement tools used, sample sizes, and the characteristics of the clinical areas studied may also have contributed to the inconsistencies in the results.

This study determined that one of the significant variables predicting nurses' self-efficacy levels in the care of children with epilepsy was receiving training in childhood epilepsy and its management during undergraduate education. It was observed that as nurses received more training in this area, their self-efficacy levels also increased. This finding is consistent with previous studies showing that self-efficacy in nursing education increases students' motivation, clinical competence, and performance (Mohamadirizi et al., 2015; Zhang et al., 2015). Clinical self-efficacy is considered a fundamental element in providing quality care and ensuring patient safety (Lee & Ko, 2010; Shorey & Lopez, 2021). According to Bandura, individuals with low self-efficacy tend to avoid situations that may result in failure (Bandura, 1993). Therefore, it is believed that effective theoretical and clinical training in pediatric epilepsy management during undergraduate studies (e.g., case discussions and simulation exercises) strengthens self-efficacy beliefs (Bluestone et al., 2013). In contrast, it was found that in-service epilepsy training provided in the hospital did not significantly affect nurses' self-efficacy levels in the study. This finding differs from some studies reporting that in-service training increases self-efficacy (Chaghari et al., 2017; Lee et al., 2019). This difference may be explained by nurses having sufficient knowledge of pediatric epilepsy management during their undergraduate studies or by the limited content and application level of in-service training.

Another variable that predicts nurses' self-efficacy in caring for children with epilepsy is the number of children. In the study, it was seen that as the number of children decreased, nurses' self-efficacy in the care of children with epilepsy increased. This finding indirectly aligns with studies reporting that nurses' demanding working conditions, shift work, and high workloads, coupled with family and child responsibilities, can make work-life balance difficult (Daşbilek et al., 2022; Demir & Yıldız, 2021). It is thought that increased family responsibilities can negatively impact self-efficacy perception by raising professional burnout and stress levels. No studies directly examining the relationship between nurses' self-efficacy level and the number of children have been found in the literature. This suggests that the effect of the number of children on self-efficacy may be an indirect and context-specific variable. Self-efficacy is shaped not only by individual responsibilities but also by environmental factors such as institutional support, working hours, social support systems, and equal division of labor. Therefore, it is possible that the number of children does not significantly predict self-efficacy in some samples. Furthermore, nurses with strong family and social support mechanisms may be able to manage their professional roles more effectively, even if they have many children. This situation may explain why the number of children does not always emerge as a factor that reduces self-efficacy.

In the study, it was determined that gender, marital status, education level, total work experience, the number of patients provided daily care, weekly working hours, department, and type of work shift did not affect nurses' self-efficacy level in the care of children with epilepsy. When the studies in the literature were examined, it was seen that nurses who were single, had a master's degree, had ten years or more professional experience, and provided care for fewer patients had high mean self-efficacy scores (Alavi et al., 2015; Koyun et al., 2022; Soudagar et al., 2015; Yılmaz Koçak &

Table 3
Predictive power of nurses' descriptive characteristics on self-efficacy levels in the care of children with epilepsy ($n = 135$).

	Model 1						
	B	SE	β	t	p	95% CI	
						Upper Level	Lower Level
Variables	28.462	4.444		6.405	<0.001	19.666	37.259
Age	0.271	0.123	0.452	2.208	0.029	0.028	0.514
Gender	−0.023	0.700	−0.003	−0.033	0.978	−1.408	1.362
Marital status	1.090	1.169	1.133	0.933	0.353	−1.224	3.404
Number of children	−1.337	0.652	−0.333	−2.052	0.042	−2.627	−0.047
Education	0.613	0.503	0.118	1.218	0.225	−0.383	1.609
Total work experience	−0.146	0.094	−0.269	−1.549	0.124	−0.333	0.041
Number of patients provided daily care	−0.149	0.126	−0.102	−1.183	0.239	−0.398	0.100
Weekly working hours	−0.028	0.083	−0.027	−0.331	0.741	−0.193	0.138
Department	0.015	0.192	0.007	0.077	0.939	−0.364	0.394
Type of work shift	−0.033	0.650	−0.004	−0.051	0.960	−1.320	1.254
Status of having received education on children with epilepsy at school	4.182	1.107	0.376	3.779	<0.001	1.991	6.373
Status of having received education on children with epilepsy during in-service training at the hospital	0.274	0.764	0.034	0.359	0.721	−1.238	1.786
R	0.528						
R^2	0.278						
F	3.924						
p	<0.001						
DW (1.5–2.5)	1.882						

B: Unstandardized Beta; SE: Standard Error; β: Standardized Regression Coefficient; t: Significance Test of Regression Line; p: Significance Level; CI:Confidence Interval; R: Correlation; R^2: Correlation Coefficient (Explained Variance Rate); F: Model Statistic; DW:Durbin-Watson.

Table 4
Predictive power of self-efficacy-sufficiency on self-efficacy levels in the care of children with epilepsy ($n = 135$).

	Model 2						
	B	SE	β	t	p	95% CI	
						Upper Level	Lower Level
Variables	25.348	2.477		10.232	<0.001	20.448	30.248
SESS	0.139	0.025	0.430	5.498	<0.001	0.089	0.189
R	0.430						
R^2	0.185						
F	30.232						
p	<0.001						
DW (1.5–2.5)	2.125						

B: Unstandardized Beta; SE: Standard Error; β: Standardized Regression Coefficient; t: Significance Test of Regression Line; p: Significance Level; CI:Confidence Interval; R: Correlation; R^2: Correlation Coefficient (Explained Variance Rate); F: Model Statistic; DW: Durbin-Watson; SESS: The Self-Efficacy-Sufficiency Scale.

Table 6
Significant predictors of nurses' self-efficacy levels in the care of children with epilepsy across regression models ($n = 135$).

Predictor	Model 1 β (p)	Model 2 β (p)	Model 3 β (p)
Age	0.452 (0.029)		
Number of children	−0.333 (0.042)		
Status of having received education on children with epilepsy at school	0.376 (<0.001)		0.363 (<0.001)
SESS		0.430 (<0.001)	0.306 (<0.001)
R	0.528	0.430	0.596
R^2	0.278	0.185	0.355
F	3.924	30.232	5.121
p	<0.001	<0.001	<0.001
DW (1.5–2.5)	1.882	2.125	2.408

β: Standardized Regression Coefficient; p: Significance Level; R: Correlation; R^2: Correlation Coefficient (Explained Variance Rate); F: Model Statistic; DW:Durbin-Watson; SESS: The Self-Efficacy-Sufficiency Scale.

Büyükyılmaz, 2019). The factors affecting nurses' self-efficacy in the care of children with epilepsy were different, or some factors did not affect them in both this study and other studies, which may have been due to the use of different tools to measure self-efficacy and different sample sizes. In the study, some results were consistent with the literature, but some were different, indicating that more studies are needed to reveal the factors affecting nurses' self-efficacy in caring for children with epilepsy.

Limitations

This study has several limitations. First, the use of a convenience sampling method may limit the representativeness of the sample and restrict the generalizability of the findings to broader nurse populations. Second, the single-center design may limit the generalizability of the results to nurses working in different institutions or healthcare settings. Third, data were collected using self-report measures, which may be subject to recall bias and may not fully reflect actual clinical behaviors or competencies. In addition, the use of face-to-face data collection and self-administered questionnaires may have introduced social desirability bias, potentially leading participants to overestimate their self-efficacy levels. Finally, the cross-sectional nature of the study may prevent causal inferences from being made between the identified predictors and nurses' self-efficacy levels.

Implications for practice

Self-efficacy is one of the main factors affecting nurses' performance. High self-efficacy in nursing practices increases nurses' professional practice behavior and the quality of the care they provide. Nurses' high self-efficacy levels in managing the care of children with epilepsy play a critical role in taking measures to both prevent and effectively manage seizures. It is recommended that nurses should be given in-service training, especially in hospitals, in the management of pediatric epilepsy. Thanks to this training, nurses will follow the latest information and learn evidence-based practices. It is also recommended that courses on childhood epilepsy should continue in nursing curricula and be supported, especially with clinical scenarios and case discussions. In addition, studies on other variables that can predict nurses' self-efficacy level in caring for children with epilepsy are recommended.

Table 5
Predictive power of nurses' descriptive characteristics and self-efficacy-sufficiency on self-efficacy levels in the care of children with epilepsy ($n = 135$).

	Model 3						
	B	SE	β	t	p	95% CI	
						Upper Level	Lower Level
Variables	22.905	4.467		5.128	<0.001	14.062	31.749
Age	0.216	0.118	0.360	1.841	0.068	−0.016	0.449
Gender	−0.034	0.665	−0.004	−0.051	0.960	−1.349	1.282
Marital status	1.073	1.110	0.131	0.967	0.335	−1.124	3.270
Number of children	−1.080	0.622	−0.269	−1.736	0.085	−2.312	0.152
Education	0.206	0.490	0.040	0.421	0.675	−0.763	1.175
Total work experience	−0.132	0.090	−0.243	−1.474	0.143	−0.310	0.045
Number of patients provided daily care	−0.129	0.120	−0.089	−1.081	0.282	−0.366	0.107
Weekly working hours	−0.56	0.080	−0.055	−0.706	0.482	−0.214	0.101
Department	0.061	0.182	0.027	0.332	0.740	−0.300	0.421
Type of work shift	0.021	0.617	0.003	0.034	0.973	−1.202	1.243
Status of having received education on children with epilepsy at school	4.040	1.051	0.363	3.842	<0.001	1.958	6.121
Status of having received education on children with epilepsy during in-service training at the hospital	0.196	0.726	0.025	0.271	0.787	−1.240	1.633
SESS	0.099	0.026	0.306	3.786	<0.001	0.047	0.150
R	0.596						
R^2	0.355						
F	5.121						
p	<0.001						
DW (1.5–2.5)	2.408						

B: Unstandardized Beta; SE: Standard Error; β: Standardized Regression Coefficient; t: Significance Test of Regression Line; p: Significance Level; CI:Confidence Interval; R: Correlation; R^2: Correlation Coefficient (Explained Variance Rate); F: Model Statistic; DW:Durbin-Watson; SESS: The Self-Efficacy-Sufficiency Scale.

Conclusion

In conclusion, it was determined that the mean self-efficacy scores of nurses in the care of children with epilepsy were above the medium level and that the factors that predicted the level of self-efficacy were age, number of children, education of children with epilepsy during school years, and the self-efficacy-sufficiency scale. This study highlights the importance of self-efficacy as a key professional attribute in nurses providing care for children with epilepsy. The findings underscore that strengthening nurses' self-efficacy has the potential to enhance the quality, confidence, and effectiveness of pediatric epilepsy care. Educational experiences gained during nursing undergraduate education and through continuous professional development stand out as fundamental and strategic elements supporting nurses in effectively managing the complex care needs of children with epilepsy. From a pediatric nursing practice perspective, fostering self-efficacy may contribute to improved clinical decision-making, family-centered care, and adherence to evidence-based interventions. Accordingly, integrating comprehensive, evidence-based, and case-oriented epilepsy education into nursing curricula and in-service training programs is strongly recommended. Future experimental and interventional studies are warranted to evaluate targeted strategies aimed at enhancing nurses' self-efficacy and to further advance the quality of pediatric epilepsy care.

Authors' contribution

DDK, ŞD and MB conceptualized and designed the study, acquired, analyzed and interpreted the data, and drafted the manuscript. All authours designed the study and revised the manuscript. All authors read and approved the final manuscript.

CRediT authorship contribution statement

Dilek Demir Kösem: Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Şenay Demir:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Murat Bektaş:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

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Declaration of competing interest

The authors declare that they have no competing interests.

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