e-ISSN:2687-2145

BANDIRMA ONYEDİ EYLÜL ÜNİVERSİTESİ SAĞLIK BİLİMLERİ VE ARAŞTIRMALARI DERGİSİ
BANU Journal of Health Science and Research

DOI: 10.46413/ boneyusbad.1535131 ***Özgün Araştırma / Original Research***

The Relationship of Pediatric Nurses' Job Satisfaction with Medical Errors Tendencies and Missed Nursing Care

Pediatri Hemşirelerinin İş Doyumunun Tıbbi Hata ve Karşılanamayan Bakım ile İlişkisi

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Geliş tarihi / Date of receipt: *18.08.2024*

Kabul tarihi / Date of acceptance: *06.10.2024*

Atıf / Citation: Kaynak, S., Ergün, S. (2024). The relationship of pediatric nurses' job satisfaction with medical errors tendencies and missed nursing care. *BANÜ Sağlık Bilimleri ve Araştırmaları Dergisi*, *6*(3), 606-617. doi: 10.46413/ boneyusbad.1535131

ABSTRACT

Aim: *To determine the relationship of pediatric nurses' job satisfaction with medical error tendencies and missed nursing care.*

Material and Method*: This research was a descriptive, relationship-seeking, and cross-sectional study. The study had with 335 pediatric nurses. Research data were obtained using a Nurses' Information Form, Job Satisfaction Scale for Clinical Nurses Scale (JSS-CN), Medical Error Tendency Scale in Nursing Scale (METS), and Missed Care in Pediatric Nursing and Its Causes-Pediatric Version Questionnaire.*

Results: *The participants' mean total scores were 123.06±22.00 for job satisfaction and 22.39±4.14 for medical error tendency. Considering the last shift of the nurses, the most frequent area of missed care was ambulation of the child as per the nursing plan and the least frequent area was washing hands, with the missed care activities being associated with material resources and communication factors (p<.001).*

Conclusion: *This research showed that as pediatric nurses' job satisfaction increased, medical error tendency and missed care decreased.*

Keywords: *Pediatric nurses, Job satisfaction, Medical errors, Missed care*

ÖZET

Amaç: *Bu çalışmanın amacı pediatri hemşirelerinin iş doyumunun tıbbi hata ve karşılanamayan bakımla ilişkisinin belirlenmesidir.*

Gereç ve Yöntem: *Bu araştırma tanımlayıcı, ilişki arayıcı ve kesitsel tipte bir araştırmadır. Araştırmanın örnekleminin 335 pediatri hemşiresi oluşturmaktadır. Araştırma verileri, hemşire bilgi formu, Klinik Hemşireler İçin İş Doyumu Ölçeği, Hemşirelikte Tıbbi Hataya Eğilim Ölçeği ve Pediatri hemşireliğinde Karşılanamayan Bakım Anketi-Pediatrik Versiyonu ile elde edilmiştir.*

Bulgular: *Katılımcıların iş doyumu ölçeği toplam puanı 123.06±22.00, tıbbi hataya eğilim ölçeği toplam puanı 22.39±4.14 bulundu. Hemşirelerin son vardiyasında en fazla hemşirelik bakım planına uyarak çocuğu kaldırmak ve yürütmek, en az ise el yıkama ile ilgili hemşirelik uygulamalarını kaçırdığı, karşılanmayan bakımın materyal ve iletişim kaynaklı olduğu bulundu (p<.001).*

Sonuç: *Araştırmamız sonucunda pediatri hemşirelerinin iş doyumu arttıkça tıbbi hata yapma eğilimleri ve karşılanamayan bakımın azaldığı bulunmuştur.*

Anahtar Kelimeler*: Pediatri hemşireleri, İş doyumu, Tıbbi hata, Karşılanmayan bakım*

INTRODUCTION

Job satisfaction is a positive emotional state that arises from an individual's assessment of their job and work environment, which can affect the mental and physical health, performance, productivity, and behavior of employees (Çelik & Kılıc, 2019). High job satisfaction enhances the job performance of individuals, commitment to the job, and the efficiency of institutions, while low job satisfaction can cause various physical diseases and psychological problems in individuals (Quadır & Akaroğlu, 2022). To increase the quality of health services provided, it is very important for nurses, who play active roles in the health sector, to be satisfied with their profession and to be successful and content (Yanna et al., 2023). Research in the literature indicates that nurses' job satisfaction is at a moderate level (Torun & Çavuşoğlu, 2019; Kaya & İşler Dalgıç, 2020; Raghavendran et al., 2022; Dinç & Yıldız, 2023). In a study examining the effect of job satisfaction among pediatric nurses on burnout syndrome, a negative relationship was reported between the two (Kaya & İşler Dalgıç, 2020). Low job satisfaction, particularly among individuals working with children, leads to the neglect and exploitation of children during the provision of education and care (Quadır & Akaroğlu, 2022).

Medical error is defined as harm caused to a patient due to a healthcare professional's inappropriate or unethical actions or their poor and negligent practices in providing healthcare services (Yüksel, Akbulut, & Yılmaz 2019). In addition to increasing morbidity and mortality rates and costs associated with prolonged hospital stays and treatment, medical errors also negatively affect patients, their relatives, and healthcare personnel. Furthermore, medical errors result in diminished motivation, a sense of powerlessness, anxiety, and burnout among healthcare professionals, which may foster patient distrust and prompt healthcare professionals to resign from their positions (Özen, Onay, Terzioğlu, 2019; Bozkurt & Tepehan Eraslan, 2023). As reported by the World Health Organization (WHO), 2.6 million people die due to medical errors, and approximately 134 million medical errors occur every year due to unsafe healthcare, in low and middle income countries (WHO, 2019). According to research conducted in Turkey, the rate of medical errors is approximately 16.6%, within the last four years, the rate of nurses and midwives sued for medical errors has increased by 10%, and incorrect medication administration is the leading medical error (Çakmak, Konca, & Teleş, 2018; Çom, Üzün & Gümüş, 2020). According to research conducted in Turkey, the prevalence of medical errors is roughly 16.6%. Over the past four years, there has been a 10% increase in the number of midwives and nurses facing legal action due to medical errors. The most common type of medical error is the incorrect administration of medication (Çakmak et al., 2018; Çom et al., 2020).

It is important to identify medical errors in a timely manner and reveal their reasons in order to reduce their occurrence and determine areas of improvement for their solution (Özlük, 2020). WHO launched its third global patient safety challenge in 2017 to reduce and prevent medical errors (WHO, 2017). Medication errors hold an important place among medical errors due to their association with increased morbidity and mortality, posing a threat to patient safety, and high prevalence (Shaikh & Cohen, 2020). Babies and children face a higher risk in terms of patient safety than adults in medication administration (Manav & Başer, 2018). It is estimated that children are three times more likely to be harmed by medications than adults (Sutherland, Phipps, Tomlin, & Ashcroft, 2019). Among the preventable causes of death in the pediatric patient group are medication errors (Gates et al., 2019; Aseeri, Banasser, Baduhduh, Baksh, & Ghalibi, 2020). There are studies in the literature indicating that pediatric nurses have moderate (Dilemek, Korhan, Mercan, & Yilmaz, 2017; Ulusoy & Tosun, 2020; Önler, Yıldız, &Aktaş Kılıç, 2021; Uzuntarla &Tural Büyük, 2022) or low (Özlük, 2020; Yılmaz, Keskin, & Yeşildal, 2022) levels of tendency to make medical errors. It has also been reported that the rate of medical errors made by nurses in maternity clinics, which also affects child health, is higher (Karakaş, Şahan, Akarsu, & Atilla, 2023). Nurses must take care to protect and improve the safety of pediatric patients in situations that threaten patient safety (Bozkurt & Tepehan Eraslan, 2023).

Missed nursing care refers to the situation where nursing care that should be provided for the patient is incomplete, non-existent, or deliberately ignored for a specific or unclear reason. Missed nursing care is also described as negligence or omission that endangers patient safety (Ozdemir & Elmaoğlu, 2024). The treatments for neonatal and pediatric patient groups are complex,

requiring intensive nursing care. Nursing care is a potential force affecting outcomes for newborn and pediatric patients, both during the hospital stay and after discharge (Simpson & Lyndon, 2017; Sworn & Booth, 2020). It has been reported that the rate of missed nursing care among pediatric and neonatal nurses is 55% to 98% lower than among nurses caring for adult patients (Lake et al., 2020). In a study conducted with 2,149 pediatric nurses, it was stated that more than half of the nurses were unable to fulfill at least one nursing intervention in their last shift, that emotional support for patients could not be provided through the implementation of a care plan, and that missed nursing care was predominantly observed in environments with unfavorable working conditions (Lake et al., 2017). Research undertaken in neonatal units has revealed that the training that should be provided to parents of patients who are scheduled for discharge is frequently missed in nursing care (Rochefort, Rathwell, & Clarke, 2016; Lake et al., 2020). In a study conducted with 175 pediatric nurses in Turkey, it was found that pediatric nurses missed at least one area of care during their last shift, and the reasons for not being able to provide the necessary care were mostly related to their professional characteristics and experiences (Elmaoğlu & Ozdemir, 2022). However, a review of the literature indicates no study that examined pediatric nurses' job satisfaction, medical error tendency, and missed care together. In light of all this information, this study aimed to determine the relationship of pediatric nurses' job satisfaction with medical error tendencies and missed nursing care.

Research Questions

For this purpose, answers to the following research questions were sought:

1. Is there a relationship between pediatric nurses' job satisfaction and their tendency to make medical errors?
2. Is there a relationship between pediatric nurses' job satisfaction and missed nursing care?

MATERIAL AND METHODS

Research Type

This research was a descriptive, relationship-seeking, and cross-sectional study to determine the effect of pediatric nurses' job satisfaction on medical error tendency and missed care.

Study Population and Sample

This research was conducted with nurses working in pediatrics and neonatal clinics in public, university, and private hospitals across Turkey. The population of the research comprised nurses working in pediatrics and neonatal clinics in public, university, and private hospitals across Turkey between April 24 and December 16, 2022. Since the number of individuals in the population was unknown, to examine the prevalence of the subject the formula n = (t2 X (Pq) / d2) was used and the number of required participants was calculated as 384. A 0.95% confidence interval, 5% standard deviation, and 50% unknown prevalence were used for the calculation. During the data collection process, it was planned to reach at least 384 nurses working in pediatrics and neonatal clinics. Upon completion of the research, the data of 39 individuals who were not nurses and 10 individuals who did not work in the field of pediatrics was excluded. As a result, the study was completed with the data obtained from 335 participants. The research data was collected through a survey form prepared using the web-based data collection (Google Forms) method. A link to the survey was sent to the participants via e-mail and online socials media platforms. It took the nurses approximately ten minutes to complete the forms.

Data Collection Tools

A Nurses' Information Form, Job Satisfaction Scale for Clinical Nurses, Medical Error Tendency Scale in Nursing and the MISSCARE Survey-Pediatric Version were used in the collection of data.

Nurses' Information Form: This form was prepared by the researchers in light of the literature and contained eight questions to gather data on age, gender, marital status, educational level, years of working in pediatrics, the healthcare institution they are employed at, the unit they work in, and their weekly working hours (Ozdemir & Elmaoğlu, 2024; Kohanová, Bartoníčková, & Žiaková, 2023; Eraslan & Bozkurt 2023).

Job Satisfaction Scale for Clinical Nurses (JSS-CN): This scale, developed by Lee et al. (2018), consists of 33 statements and six subscales and was used to determine the job satisfaction levels of nurses. The validity and reliability analyses of the Turkish version of the scale were conducted by Çağan and Koca (2020). The six subscales of

the JSS-CN are as follows: institutional recognition and professional success, contribution of the profession to individual maturation, respect and acceptance in interpersonal relationships, being aware of professional responsibility, visibility of professional competence, and valuing the profession. Scale items are scored using a five-point Likert system ranging from 1 (strongly disagree) to 5 (strongly agree). The score range that can be obtained from the scale is 33 to 165, and the subscale scores range from 9 to 45 for the first subscale, 6 to 30 for the second subscale, 8 to 40 for the third subscale, 4 to 20 for the fourth subscale, 3 to 15 for the fifth subscale, and 3 to 15 for the sixth subscale. High scores on the scale indicate a high level of job satisfaction (Çağan & Koca,2020).

Medical Error Tendency Scale in Nursing (METS): This scale was developed and proven to be valid and reliable by Özata and Altunkan (2010). It consists of 49 items presented under five subscales: medication and transfusion practices, hospital infections, patient monitoring and equipment safety, falls, and communication. Scoring is performed based on a five-point Likert scale: 1, never; 2, rarely; 3, sometimes; 4, usually; and 5, always. The lowest and highest scores that can be obtained from the scale are 1 and 5, respectively. A higher score on the scale indicates a higher tendency of the nurse to make medical errors. Özata and Altunkan calculated the Cronbach's Alpha value of the scale as 0.95 (Özata & Altunkan, 2021).

MISSCARE Survey-Pediatric Version (Missed Care in Pediatric Nursing and Its Causes-Pediatric Version Questionnaire): This survey was developed by Bagnasco et al. in 2018. The validity and reliability studies of the Turkish version of the scale were undertaken by İncekar et al. (2020). The scale consists of two parts. There are 29 items in Part A and 16 items in Part B. The Cronbach's alpha values of the Turkish version were determined to be 0.82 for the human resources subscale, 0.87 for the communication subscale, 0.88 for the material resources subscale, and 0.91 for the total scale (İncekar, İspir, Sönmez, Selalmaz, & Erdost, 2020). Part A consists of 29 items scored based on a five-point Likert-type scale (5 = always, 1 = never and not applicable). In this part, each item is evaluated separately, and the average score of the responses given by all pediatric nurses for each item is taken (minimum 1, maximum 5 points). A higher score indicates a higher frequency of performing the given activity. Part B addresses the possible causes of missed nursing care. It consists of 16 items evaluating possible reasons for missed nursing care in three subscales (human resources, communication, and material resources) based on a four-point Likert type (4 = very important reason, 1 = no reason). The score is calculated by summing the scores of each subscale. A high score is associated with a high reason for missed care in the relevant subscale (İncekar et al., 2020).

Ethical Considerations

Ethical approval was obtained from the Health Sciences Non-Interventional Research Ethics Committee of Balıkesir University (Date: 2 February 2022 and Approval number: 2022/35) before the study. The participants were informed about the study on the first page of the form, and it was stated that the completion of the form was based on voluntariness.

Statistical Analysis

The data obtained from the research was transferred to the computer environment and analyzed using the IBM SPSS Statistics v. 21 package program. Number, percentage, and mean values were used in the analysis of basic descriptive data. The skewness and kurtosis values were examined to assess the normal distribution of the scales. Pearson's correlation analysis was employed for data that exhibited a normal distribution, while Spearman's rho correlation analysis was used for data that did not conform to a normal distribution. Correlation coefficients were interpreted as follows: 0.10–0.29 indicated a low (weak) level of correlation, 0.30–0.79 indicated a moderate (reasonable) level of correlation, and 0.80 and above indicated a very strong (high/excellent) level of correlation (Chan, 2003). The results were evaluated at the 95% confidence interval and a significance level of $p < 0.05$.

RESULTS

Demographic Characteristics

The mean age of the nurses participating in the study was 31.65 ± 7.04 years. Of the nurses, 93.4% were women, 60% were single, 65.7% had a bachelor's degree, 35.2% had 10 years or more of working experience, 45.4% worked in a public hospital, 24.5% worked in intensive care, and 58.5% worked 41-60 hours weekly (Table 1).

Table 1. Nurses' Descripths Information (n = 335)

Variables	n	%
Gender		
Female	313	93.4
Male	22	6.6
Marital status		
Married	134	40.0
Single	201	60.0
Educational level		
High school	62	18.5
Bachelor's degree	220	65.7
Postgraduate degree	53	15.8
Duration of employment in pediatrics		
Less than 1 year	46	13.7
1-3 years	40	11.9
4-6 years	51	15.2
7-9 years	80	23.9
10 years and over	118	35.2
Institution		
University hospital	41	12.2
Training and research hospital	119	35.5
Public hospital	152	45.4
Private hospital	23	6.9
Unit		
General pediatric service	54	16.1
Outpatient pediatric clinic	66	19.7
Intensive care unit	82	24.5
Neonatal intensive care unit	65	19.4
Pediatric emergency unit	62	18.5
School nursing unit	6	1.8
Weekly working hours		
40 hours	121	36.1
41-60 hours	196	58.5
61-80 hours	18	5.4

Job Satisfaction, Medical Error Tendency, and Perceived Missed Care Scores

Table 2 shows the mean scores for the analyzed scales. Considering the JSS-CN, the participants' mean scores were 31.42 ± 7.79 for institutional recognition, 23.55 ± 5.26 for contribution of the profession to individual maturation, 25.35 ± 6.08 for respect and acceptance in interpersonal relationships, 17.70 ± 2.30 for being aware of professional responsibility, 11.46 ± 2.38 for visibility of professional competence, 13.55 ± 1.51 for valuing the profession, and 123.06 ± 22.00 for the total scale. According to the evaluation of the METS scale, the participants' mean scores were 4.67 ± 0.73 for medication and transfusion practices, 4.51 ± 0.89 for hospital infections, 4.48 ± 0.89 for falls, 4.34 ± 0.94 for patient monitoring and equipment safety, 4.37 ± 0.92 for communication, and 22.39 ± 4.14 for the total scale. The analysis of the MISSCARE scale scores revealed that the participants' mean scores were 10.57 ± 3.62 for material resources, 17.49 ± 5.19 for communication, and 15.49 ± 3.20 for human resources and 43.59±10.92 for the total scale (Table 2).

Table 2. Mean Scores Obtained From the Scales (n = 335)

Scale	Subscale	Min-max*	Mean	SD	Skewness	Kurtosis
Medical Error Tendency Scale in Nursing	Medication and transfusion practices	2.06-5	4.67	0.73	-2.806	6.553
	Hospital infections	1.67-5	4.51	0.89	-2.151	3.552
	Falls	1.60-5	4.48	0.89	-2.249	4.383
	Patient monitoring and equipment safety	1.33-5	4.34	0.94	-1.805	2.564
	Communication	1.80-5	4.37	0.92	-1.651	1.835
	Total score	8.46-25	22.39	4.14	-2.240	4.395
Job Satisfaction Scale for Clinical Nurses	Institutional recognition and professional success	18-45	31.42	7.79	0.186	-1.113
	Contribution of the profession to individual maturation	12-30	23.55	5.26	-0.612	-0.444
	Respect and acceptance in interpersonal relationships	15-37	25.35	6.08	0.046	-0.860
	Being aware of professional responsibility	12-20	17.70	2.30	-0.760	-0.050
	Visibility of professional competence	6-15	11.46	2.38	-0.589	-0.172
	Valuing the profession	9-15	13.55	1.51	-0.500	-0.689
	Total score	77-162	123.06	22.00	-0.085	-0.846
Section B items-MISSCARE Survey-Pediatric Version	Material resources	4-16	10.57	3.62	0.179	-0.980
	Communication	9-28	17.49	5.19	0.372	-0.651
	Human resources	8-20	15.49	3.20	0.605	-0.483
	Total score	21-62	43.56	10.92	0.011	-0.686

Abbreviations: SD, standard deviation, *Lowest and highest values obtained.

Table 3. Distribution of the Pediatric Nursing Care Activities Missed in the Last Shift (n = 335)

	Never		**Rarely**		**Sometimes**		**Often**		**Always**		**Not applicable**	
	n	%	n	%	n	%	n	%	n	%	n	%
1- Attendance at daily rounds at the bedside	39	11.6	39	11.6	23	6.9	78	23.3	139	41.5	17	5.1
2- Ambulation three times per day or as per nursing plan, if clinical conditions allow	73	21.8	45	13.4	75	22.4	67	20.0	50	14.9	25	7.5
3- Assessment of efficacy of medications	39	11.6	0	0	51	15.2	115	34.3	124	37.0	6	1.8
4- Passive mobilization of child every two hours or as ordered	50	14.9	50	14.9	29	8.7	82	24.5	108	32.2	16	4.8
5- Mouth care	61	18.2	45	13.4	12	3.6	75	22.4	136	40.6	6	1.8
6- Including parents in child's care	13	3.9	57	17.0	63	18.8	82	24.5	115	34.3	5	1.5
7- Patient and family education	15	4.5	49	14.6	24	7.2	97	29.0	146	43.6	4	1.2
8- Discussion with child and his/her family about plans for discharge and care at home	25	7.5	40	11.9	63	18.8	74	22.1	130	38.8	3	0.9
9- Promoting neuro-evolutionary development according to child's age and clinical conditions (e.g., neonatal care and cognitive and relational development in child or in adolescent)	19	5.7	39	11.6	52	15.5	127	37.9	94	28.1	4	1.2
10- Pain management with pharmacological or non-pharmacological care approaches according to protocol	19	5.7	50	14.9	18	5.4	132	39.4	112	33.4	4	1.2
11- Acting on medication requests within 15 minutes	37	11.0	53	15.8	51	15.2	103	30.7	83	24.8	8	2.4
12- Full documentation of all nursing data	13	3.9	40	11.9	0	0	132	39.4	146	43.6	4	1.2
13- Communication of all relevant information during shift change or handover	4	1.2	17	5.1	11	3.3	68	20.3	233	69.6	2	0.6
14- Meeting nutritional needs according to child's clinical conditions (e.g.,encouraging oral feeding and/or nutrition at the request on the newborn and encouraging appropriate nutrition in accordance with personal taste)	21	6.3	33	9.9	29	8.7	124	37.0	126	37.6	2	0.6
15- Administering medications within the 30 minutes before or after scheduled time (e.g., administration between 7:30 p.m. and 8:30 p.m. when scheduled time is 8 p.m.)	40	11.9	51	15.2	45	13.4	69	20.6	124	37.0	6	1.8
16- Assisting the child with toileting needs in five minutes of request (e.g., going with child to the toilet or providing appropriate devices if bedridden)	45	13.6	22	6.6	39	11.6	51	15.2	176	52.5	2	0.6
17- Response to call light, intervention request, or alarm (e.g., monitor, infusion pumps, and ventilator) within five minutes	24	7.2	17	5.1	28	8.4	79	23.6	182	54.3	5	1.5
18- Emotional support to the child and/or family	19	5.7	17	5.1	74	22.1	57	17.0	164	49.0	4	1.2
19- Obtaining samples/specimens as ordered	26	7.8	17	5.1	0	0	35	10.4	254	75.8	3	0.9
20- Body hygiene and skin care	34	10.1	22	6.6	11	3.3	41	12.2	226	67.5	1	0.3
21- Central and peripheral line site assessment according to protocol	53	15.8	39	11.6	6	1.8	17	5.1	216	64.5	4	1.2
22- Central and peripheral catheter care according to protocol	69	20.6	45	13.4	11	3.3	18	5.5	187	55.8	5	1.5
23- Adoption of necessary precautions for infection control as per protocol (individual protection devices, disinfection of devices, isolation, and correct waste disposal)	21	6.3	33	9.9	6	1.8	81	24.3	192	57.3	2	0.6
24- Monitoring intake/output of solid and liquid	30	9.0	51	12.2	61	18.2	12	3.6	177	52.8	4	1.2
25- Assessing vital signs according to the nursing plan	26	7.8	22	6.6	17	5.1	51	15.2	216	64.5	3	0.9
26- Focused reassessments of the child's condition to evaluate improvements or deterioration during the shift	10	3.0	28	8.4	39	11.6	46	13.7	210	62.7	2	0.6
27- Hand washing	9	2.7	0	0	22	6.6	12	3.6	289	86.3	3	0.9
28- Assessing activities attributed to caregiver	13	3.9	39	11.6	51	15.2	88	26.3	139	41.5	5	1.5
29- Safety and hygiene checks of bedside equipment (e.g., bed, nightstand and devices) once per shift or per protocol	10	3.0	39	11.6	35	10.4	99	29.6	150	44.8	2	0.6

Distribution Of Missed Care Activities Evaluated Based On The Last Shift and Mean İtem Scores

Table 3 presents the distribution of the missed care activities, considering the last shift. The rate of missed nursing care was determined to range from 13.7% to 75.2% in the last shift that pediatric nurses worked. According to these data, it appears that the nurses were not able to meet at least one care need. Considering the mean item scores of missed care activities, the most frequent area of missed care was ambulation of the child as per the nursing plan (rarely missed in 14.9% of cases and always missed in 85.1% of cases), while the least frequent area of missed care was washing hands (rarely missed in 86.3% of cases and always missed in 13.7% of cases) (Table 3).

Correlation Between Job Satisfaction, Medical Error Tendencies, and Missed Care

To determine the correlation between job satisfaction and medical error tendencies, Spearman's rho correlation analysis was utilized due to the non-normal distribution of the data. The correlation analysis revealed a moderately significant positive correlation between the total JSS-CN score and the total METS score (r = 0.630, p < .001). In other words, as nurses' job satisfaction increased, their tendency to make medical errors also significantly increased at a moderate level (Table 4).

Table 4. Correlation Between Job Satisfaction and Medical Error Tendencies Scales

		METS
JSS-CN	Spearman's rho r	0.630*
	p	**0.000****
	N	335

r: Spearman's rho Correlation Analysis; *p is significant at the p < .05 level, ** p is significant at the p < .001

Table 5. Correlation Between Job Satisfaction and MISSCARE Survey-Pediatric Version Scales

		MISSCARE Survey-Pediatric Version
JSS-CN	Pearson r	-0.254*
	p	**0.000****
	N	335

r: Pearson Correlation Analysis; *p is significant at the p < .05 level, ** p is significant at the p < .001

The correlation between job satisfaction and missed care was ascertained using Pearson's correlation analysis, as the data followed a normal distribution. This analysis identified a weak level of significant negative correlation between the total JSS-CN score and the total MISSCARE score (r = -0.254, p < .001), suggesting that as nurses' job satisfaction increased, the rate of missed care significantly decreased at a weak level (Table 5).

DISCUSSION

This research was conducted to determine the effect of pediatric nurses' job satisfaction on medical errors and missed care. The nursing profession requires a high level of social and professional responsibility. The quality of work life of nurses working in the field of pediatrics is negatively affected by problems such as heavy workloads, long working shifts, and a lack of autonomy (Pérez-Ardanaz et al., 2022). Patient care forms the basis of the nursing profession. Job satisfaction is one of the most important factors affecting the quality of nursing care (Maghsoud, Rezaei, Asgarian, & Rassouli, 2022). Therefore, it is important for nurses to have a high level of job satisfaction. Our research revealed a moderate level of positive correlation between pediatric nurses' total JSS-CN and METS scores. This indicates that as nurses' job satisfaction increased, their tendency to make fewer medical errors also increased. Additionally, a weak negative correlation was identified between the total JSS-CN and MISSCARE scores. Our findings suggest that higher job satisfaction is associated with a reduced tendency to make medical errors and a decreased incidence of missed care activities, albeit at a weak level. This is a desired outcome of our study. The nurses' high job satisfaction in their work environment suggests that they prioritize patient care by reducing medical errors. According to the review of the literature, no study has examined the relationship of pediatric nurses' job satisfaction with medical error tendencies and missed nursing care. In existing studies, job satisfaction, medical errors, and missed care are discussed separately.

In our research, pediatric nurses' job satisfaction was found to be at a high level. Ensuring high job satisfaction among pediatric nurses is crucial for facilitating the smooth progress of pediatric patient treatment (Kaya & İşler Dalgıç, 2020). In a study comparing the job satisfaction and burnout levels of 326 pediatric nurses, Kaya and İşler Dalgıç (2021) reported that the nurses' job satisfaction was high and, accordingly, their

burnout levels were low (Kaya & İşler Dalgıç, 2021). Similarly, Roney and Acri (2018) reported high job satisfaction among 318 pediatric nurses (Roney & Acri, 2018). In another study evaluating the relationship between the level of knowledge about preventing ventilator-associated pneumonia in pediatric intensive care units and job satisfaction among 105 nurses, Çelik et al. (2021) observed a significant relationship between nurses' job satisfaction and correct answers to the questions related to the prevention of ventilator-associated pneumonia (Çelik, Copur, & Elmaoğlu, 2021). There are also studies in the literature reporting moderate and low levels of job satisfaction among pediatric nurses. In a study including 244 pediatric nurses, Dinç and Yıldız (2023) determined the nurses' job satisfaction to be moderate (Dinç & Yıldız, 2023). Similarly, Kaya and İşler Dalgıç (2020) indicated a moderate level of job satisfaction among 198 pediatric nurses (Kaya & İşler Dalgıç, 2020). In contrast, in a study conducted with 235 pediatric nurses, Torun and Çavuşoğlu (2018) detected low job satisfaction (Torun & Çavuşoğlu, 2018). Low job satisfaction among nurses was also reported by Ren et al. (2023), who evaluated a total of 866 Chinese nurses, including pediatric nurses (Ren et al., 2023). Consistently, Khatatbeh et al. (2021) observed a low level of job satisfaction among pediatric nurses. The authors also noted that as pediatric nurses' job satisfaction and social support increased, their job satisfaction also increased (Khatatbeh et al., 2021). Factors such as low job stress and strong managerial support enhance nurses' job satisfaction. The discrepancies in nurses' job satisfaction scores in the literature can be attributed to various factors, including cultural differences, age, social support, and managers' attitudes (Khatatbeh et al., 2021).

In this research, pediatric nurses had high mean item scores on the METS, suggesting that they had a low tendency to make medical errors. Alemdar and Yılmaz reported that the nurses had positive attitudes concerning medical errors in the relationship between patient safety culture and medical error attitudes among 68 pediatric nurses (Alemdar & Yilmaz, 2020). In a study of 309 nurses, Sabancıoğullar et al. (2021) reported that the nurses had a low level of tendency to make medical errors (Sabanciogullari, Yilmaz, & Karabey, 2021). In another study conducted with a total of 349 nurses, of whom 93 (26.6%) worked in pediatric wards, Eraslan and Bozkurt (2023) determined that the nurses had a low tendency to make medical errors (Eraslan & Bozkurt 2023). Hajibabaee et al. (2019) examined the relationship between job satisfaction and medical errors among 80 pediatric nurses and found no significant relationship between job satisfaction and medical errors. However, on completion of the study, the authors reported that as the pediatric nurses' job satisfaction increased, their rates of medical errors decreased (Hajibabaee, Salehi Kamboo, Faghanipour, Ashrafizadeh, & Haghighi Zadeh, 2019). Uzuntarla and Tural Büyük (2022) reported that as the professionalism of pediatric nurses increased, their tendency to make medical errors decreased in a sample of 115 pediatric nurses. The authors also noted that the nurses' scores on the medical error scale were high (Uzuntarla & Tural Büyük, 2022). The literature indicates that nurses generally have a low level of tendency to make medical errors. The findings obtained from our study align with the existing body of literature. In addition, our study is consistent with the findings of studies indicating that as pediatric nurses' job satisfaction increases, their tendency to make medical errors decreases.

On completion of our research, we determined that the rate of missed nursing care in the last shift varied between 13.7% and 85.1% among the pediatric nurses. On completion of our research, we determined that the rate of missed nursing care in the last shift varied between 13.7% and 85.1% among the pediatric nurses. Nurses were unable to provide at least one nursing care assignment in a shift. Considering the last shift of the nurses, the most frequent area of missed care was ambulation of the child as per the nursing plan, and the least frequent area was washing hands. It was also found that the nurses were mostly unable to perform the necessary care activities due to issues related to communication and human resources. In a study evaluating missed care among 403 pediatric nurses, Elmaoğlu and Ozdemir (2022) reported that 29% to 87.3% of pediatric nurses had missed care in the last shift they worked, with the most prevalent activities of missed care being ambulation of the child as per the nursing plan, including parents in the child's care, and assessing activities attributed to the caregiver. The authors also determined that the nurses were not able to provide the necessary nursing care for reasons related to material resources and communication issues (Elmaoğlu & Ozdemir, 2022). In a study involving 136 neonatal intensive care nurses, Tubbs-Cooley et al. (2019) reported that the rate of missed nursing care varied between 9% and 100% and that care needs were mostly missed in relation to intravenous line checks (Tubbs-Cooley,

Mara, Carle, Mark,& Pickler, 2019). In a study by Lake et al. (2017) conducted with 2,187 pediatric nurses, the nurses missed at least 1.5 out of 12 nursing care activities in their last shift, and as the number of patients per nurse increased, the rate of missed care increased (Lake et al., 2017). Al-Faouri et al. (2021) investigated missed care, job satisfaction, and intent to leave work among 300 nurses and observed that as the nurses' job satisfaction increased, the rate of missed care decreased (Al-Faouri, Obaidat, & AbuAlRub, 2021). In a sample of 138 pediatric nurses, Bartoníčková et al. (2022) determined that the most common reasons for missed care among pediatric nurses were frequent interruptions, emergency patient admissions, and an increased number of patients per nurse. The authors also reported that the most frequently missed care activities among pediatric nurses were independent nursing care activities, including the assessment of activities attributed to caregiver, promoting the child's neuro-evolutionary development, and providing emotional support to the child and family (Bartoníčková, Gurková, Kalánková, Mazalová, & Bečvářová, 2022). In another study evaluating 441 pediatric nurses, Kohanová et al. (2023) showed that the nurses were not able to perform at least one nursing care activity in their last shift, with the most important being the promotion of neuro-evolutionary development for the child (Kohanová et al., 2023). Kılıç et al. (2023) surveyed 121 pediatric nurses and determined that the nurses mostly missed activities related to administering medications within the 30 minutes before or after scheduled time, providing mouth care, and provided emotional support to the child/family (Kılıç, Unaldi Baydin, & Tural Buyuk, 2023). Research suggests that the missed care rates of pediatric nurses vary. The variation in missed nursing care across studies can be attributed to factors such as nurses' cultural differences, experiences, educational background, and the number of patients per nurse (Kılıç et al., 2023; Bartoníčková et al., 2022). Pediatric clinics are one of the most difficult areas for nurses to work in. Increasing the number of nurses working in these areas, the management implementing activities that will increase the motivation of nurses, improving the working conditions of nurses, and enhancing the job satisfaction of nurses are among the most important practices that will reduce both medical errors and missed care.

Strengths and Limitations

This study was conducted to determine the effect of pediatric nurses' job satisfaction on medical errors and missed care. The results revealed that pediatric nurses had a high level of job satisfaction, which reduced medical error tendencies and missed care. The findings of our research will provide valuable insights for nurse preceptors in pediatric units regarding the current situation concerning job satisfaction, medical errors, and missed care. They will also assist pediatric nurse preceptors in emphasizing the importance of awareness of professional values among pediatric nurses, which can increase job satisfaction and reduce medical errors and missed care. These results are important for providing guidance to nurses working in pediatric clinics regarding practices that increase job satisfaction and decrease medical errors and missed care.

The main limitation of the research is the small number of individuals included in the sample. The data is also limited to the responses provided by nurses who agreed to answer the questions included in data collection tools. Therefore, the results cannot be generalized to pediatric nurses working across the entire country. It is recommended to broaden the scope of the investigation by including larger samples.

CONCLUSION

Pediatric clinics are one of the most difficult work environments for nurses. Increasing the number of nurses working in these areas, the management implementing activities that will increase the motivation of nurses as planned by the management, improving the working conditions of nurses, and improving the job satisfaction of nurses are among the most important practices that will reduce both medical errors and missed care. The results of our study were found to corroborate the existing literature. Hospital management must establish infrastructure to support personnel in order to mitigate the significant expenses incurred by institutions where the level of job satisfaction is low and the rates of medical errors and missed care are high. It is also recommended that similar studies be conducted with pediatric nurses working in different medical settings.

Ethics Committe Approval

Ethics committee approval was received for this study from the Health Sciences Non-Interventional Research Ethics Committee of Balıkesir University (Date: 2 February 2022/Decision No: 2022/35)

Author Contributions

Idea/Concept: S.K, S.E.; Design: S.K, S.E.; Supervision/Consulting: S.K; Analysis and/or Interpretation: S.E.; Literature Search: S.K.; Writing the Article: S.K, S.E.; Critical Review: S.K, S.E.

Peer-review

Externally peer-reviewed.

Conflict of Interest

The authors have no conflict of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

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