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ORIGINAL PAPER

Nurses' and patients' perspectives of missed nursing care in surgical units: a correlation cross-sectional study

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Abstract

Aim: To compare nurses' and patients' reports of missed nursing care in surgical units. *Design:* A cross-sectional correlational study. *Methods:* The sample involved 130 nurses in surgical departments, and 112 patients assigned to nurses during various shifts were included. The Slovak version of the Missed Nursing Care Survey, the MISSCARE-Patient Survey, and the Generic Short Patient Experiences Questionnaire were used to collect data. Data were analyzed using descriptive and nonparametric inductive statistics. *Results:* The overall mean scores of the MISSCARE versions were low, suggesting a tendency for nurses and patients to perceive missed nursing care as a rarely occurring phenomenon. Patients' perceptions of specialist health care were positive, and only 20.7% of patients experienced any adverse events during hospitalization in surgical units. The nonsignificant relationship between nurses' and patients' reports of missed nursing care suggests differing perspectives on the amount and pattern of missed nursing care. A significant difference in the perception of missed nursing care in surgical wards was found among nurses but not among patients. A negative association between missed nursing care from the perspective of nurses and patients and various dimensions of patient-centered care was revealed. *Conclusion:* The study indicated a significant difference between nurses' and patients' perceptions and experiences of missed nursing care, highlighting the importance of including both perspectives.

Keywords: healthcare quality, missed nursing care, nurses, patient, patient-centered care, patient-reported outcomes.

Introduction

Missed nursing care (MNC) has been recognized as a critical and highly prevalent phenomenon affecting patient safety and quality of care worldwide. The increasing scientific interest in methodological issues, antecedents, and consequences of MNC in several healthcare settings is demonstrated by the exponential growth in published studies and the synthesized evidence over the last decade. Recently published reviews (Bagnasco et al., 2020; Chaboyer et al., 2021; Chiappinotto et al., 2022; Gustafsson et al., 2020) have highlighted that MNC has been examined predominantly from the perspective of nurses. Over the last five years, dozens of studies examining patterns, amount of MNC, and a broad spectrum of contributing factors and consequences of the phenomenon from nurses' viewpoints have been published in Central European countries (e.g., Gurková et al, 2020, 2022; Kalánková et al., 2020, 2022; Zeleníková et al., 2019, 2020; 2023; Witczak et al., 2022). However, compared to the extensive evidence regarding nurse-reported MNC, patients' perspectives on MNC have not gained adequate research interest (Bagnasco et al., 2020; Chiappinotto et al., 2023; Gustafsson et al., 2020). The importance of understanding patients' viewpoints in future research has been emphasized in several studies (Bagnasco et al., 2020; Chiappinotto et al., 2023; Gustafsson et al., 2020; Sönmez et al., 2020). Including patients in the exploration of MNC seems important to complement nurses' perspectives (Bagnasco et al., 2020) and gain a comprehensive understanding of the phenomenon (Chiappinotto et al., 2023). Moreover, investigating patient-perceived MNC is crucial for several reasons. Patients' perspectives on the requirements of nursing care or its priorities may differ from those of nurses. Patients' experiences are an indicator in evaluating hospital care quality. Deeper investigation of patients' perspectives based on the fundamentals of patient-centered care or patient empowerment (Bagnasco

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et al., 2020; Chiappinotto et al., 2023; Gustafsson et al., 2020) can optimize the patient-professional partnership and improve detection issues and quality of care (Bachnick et al., 2018).

The examination of patient-reported MNC has been developed simultaneously with research focusing on nurses. Similarly to the studies performed among nurses (Kalisch et al., 2009; Kalisch & Xie, 2014), the first studies focusing on exploring patients' perspectives of MNC (extent and type of MNC) were performed by Kalisch et al. (Kalisch et al., 2012; 2014; Dabney & Kalisch, 2015). The authors identified the extent and type of patient-reported MNC, initially in qualitative (Kalisch et al., 2012), and later, in quantitative studies (Kalisch et al., 2014; Dabney & Kalisch, 2015). In addition, based on the MISSCARE Survey instrument used for nurses, a patient version was developed and tested (MISSCARE-Patient Survey). Further studies explored measurement issues (Orique et al., 2017), reasons for MNC (Chiappinotto et al., 2023), and the factors contributing to MNC (predominantly nurse staffing) (Dabney & Kalisch, 2015; Cho et al., 2017). Two influential reviews (Bagnasco et al., 2020; Gustafsson et al., 2020) provide evidence for the nature of and factors influencing MNC and unmet nursing care needs from patients' perspectives with regard to surgical and medical inpatients. Qualitative and quantitative findings in this research area have revealed that patients could identify and report on various aspects of MNC, including patient education and emotional support, communication, and timely response to calls (Bagnasco et al., 2020; Kalisch et al., 2012, 2014; Orique et al., 2017; Sönmez et al., 2020).

To the best of our knowledge, only one study has primarily aimed to investigate the relationship between nurses' and patients' reports of MNC (Moreno-Monsiváis et al., 2015). The present study aims to compare patients' and nurses' views on the nature and extent of MNC and to identify potential congruence or differences between their perceptions.

Aim

The study aims to compare nurses' and patients' reports of missed nursing care in surgical units.

Methods

Design

A cross-sectional correlational study. The STROBE checklist for observational cross-sectional studies was used to report the study.

Sample

The research sample was recruited from the surgical units at a teaching hospital that consented to the study. The sample consisted of nurses working in surgical units and adult inpatients hospitalized in the teaching hospital's surgical units.

All registered and practical nurses providing direct patient care in the selected surgical units (n = 7) of the included teaching hospital were invited to participate in the study. Regarding the nurses, registered and practical nurses were recruited through convenience sampling from diverse inpatient surgical departments, encompassing general surgical, vascular surgical, orthopedic, trauma, urology, otorhinolaryngology, and ophthalmology departments. One hundred thirty registered and practical nurses were recruited.

In terms of patients, 112 patients assigned to selected nurses during various shifts were recruited in the study. Eligible patients were included in the study sample if they provided written consent to the research and if they met the inclusion criteria: voluntary participation in the study, 18 years of age or above, alert, oriented, capable of communication (no diagnosis of dementia) and physically able to complete the questionnaire to participate independently. A total of 245 questionnaires were distributed: 112 to patients and 133 to nurses. The return rate of the questionnaires was 98.7% (for both groups) thanks to the helpfulness and close cooperation between the research team and the management at each of the selected departments.

Data collection

Data collection occurred from August 2023 to February 2024. The researcher was personally present at each of the selected departments and provided a detailed explanation of the purpose of the study to the head nurses in the wards included in the study. Nurses were recruited at a staff meeting, during which they provided written informed consent prior to enrolment. Consenting nurses were approached by a researcher who selected (by purposive sampling) a patient the nurse had cared for on their last shift to ensure representation across different hospital units.

Nurses completed questionnaires assessing the perceived level of missed nursing care and demographic and background workplace characteristics. The questionnaires for nurses consists of three parts of the Slovak version of the Missed Nursing Care (MISSCARE) Survey (Kalisch & Williams, 2009). The first part of this instrument includes demographic and background characteristics of the work environment and conditions (Table 1).

Part A's second domain consists of an inventory of 24 missed nursing care events. Nurses rate how often specific elements of care were missed using a 4-point Likert scale. Higher scores indicate more missed nursing care. An overall mean score is then calculated. The Slovak version of the MISSCARE Survey was tested in a previous study (Zeleníková et al., 2019) and demonstrated high internal consistency reliability (Cronbach's alpha = 0.94). The third part, Part B, contains 17 items divided into three subscales (communication, human, and material resources) identifying reasons for missed nursing care on a four-point Likert scale, with higher scores indicating a more significant reason for missed nursing care. Three subscales of the Slovak version demonstrated high internal consistency reliability in a previous study (Cronbach alphas ranged from 0.92 to 0.96, Zeleníková et al., 2019).

Patients completed questionnaires assessing the perceived level of MNC, experiences with adverse events during hospitalization, and experiences with specialist health care. The set of questionnaires for patients consisted of the following parts: the MISSCARE-Patient Survey (Kalisch et al., 2014) and the Generic Short Patient Experiences Questionnaire (GSPEQ; Sjetne et al., 2011). The MISSCARE-Patient Survey was used to measure reported missed care and patients' experiences with this phenomenon. It evaluates patients' perspectives regarding missed nursing care and consists of three subscales related to communication, basic care, and timeliness. The communication and basic care subscales are rated on a 5-point Likert scale (1 = never and 5 = always). The timeliness subscale is rated on a 5-point Likert scale (1 = less than five minutes; 5 = more than 30 minutes). An overall mean score is then calculated. The study's Cronbach alpha value for the original 13 items was 0.72. Three subscales of the original 13-item version (communication, basic care, and timely responses) of the Slovak version were also tested in this study for internal consistency reliability, resulting in a Cronbach coefficient of 0.76 (five items for communication), 0.62 (four items for timeliness subscale) and 0.78 (four items for basic care subscale). Using the MISSCARE Survey, patients were asked about experiences of a selection of six adverse events or other problems (Cho et al., 2017; Sönmez et al., 2020).

The GSPEQ measures patients' experiences of specialist health care or patient-centered care. This instrument includes ten items covering topics relevant for a range of groups of patients (Sjetne et al., 2011). An overall mean score is then calculated. The Slovak version of the GSPEQ demonstrated good internal consistency reliability in this study (Cronbach's alpha = 0.68).

Official permission was obtained from the authors of the MISSCARE-Patient Survey and the GSPEQ to use and translate these instruments into Slovak. The translation of tools to Slovak included the following stages: two independent forward and back translations, a nurse expert's review, and pilot testing.

Data analysis

Descriptive and inductive statistics were used for data analysis. Quantitative variables were summarized using the arithmetic mean, median, standard deviation, absolute frequency (N), and relative frequency (%). The normality of data was verified using the Shapiro-Wilk normality test. Non-parametric tests (Mann-Whitney test and Spearman's correlation analysis) were used to evaluate the differences and mutual correlation of the selected variables. IBM SPSS Statistics for Windows, Version 20.0 statistic software was used for statistical analysis.

Results

The characteristics of the participating nurses are reported in Table 1, and of patients in Table 2. Staff and patient characteristics were described according to the demographic and background variables included in the MISSCARE Survey and MISSCARE-Patient Survey, respectively. Most nurses were registered nurses, working shifts, with more than two years of experience in surgical units. Almost half of the nurses had a bachelor's degree and higher, and 39.2% had completed a specialized training program. A significant proportion of the sample reported perceived nurse staffing adequacy 50% or 75% of the time and reported satisfaction with the nursing profession and their current position. Regarding patients, the average age of participants was 55.3 (± 18.4) years. Most of the patients had undergone surgery and reported previous experience with hospitalization, and their overall health was perceived as fair or reasonable. The mean length of stay was 7.33 (SD = 11.26) days.

Nurse-reported and patient-reported missed nursing care: Descriptive findings.

Nurses reported occasional missed nursing care (Table 3). They perceived between 0–13 nursing activities to be missed more than rarely (from occasionally to always).

Table 1 The characteristics of bedside nurses

Nurses' characteristics	N	%
Department		
surgery	25	19.2
vascular surgery	19	14.6
orthopedic	25	19.2
trauma	25	19.2
urology	16	12.3
otorhinolaryngology	10	7.7
ophthalmology	10	7.7
Years of experience in the current unit		
less than six months	10	7.7
from 6 months to 2 years	15	11.5
from 2 years to 5 years	25	19.2
from 5 years to 10 years	31	23.8
more than ten years	49	37.7
Gender		
female	118	90.8
male	12	9.2
Age		
< 25 years	18	13.8
25–34 years	20	15.4
35–44 years	36	27.7
45–54 years	41	31.5
55–64 years	15	11.5
Highest nursing degree		
secondary nursing school or diploma	70	53.9
bachelor's degree or higher	50	46.1
Work position		
nurse with specialization	51	39.2
nurse without specialization	43	33.1
practical nurse	33	25.4
Shift work	101	77.7
hours of overtime in the past three months		
none	32	24.6
1–12 hours	40	30.8
more than 12 hours	58	44.6
Perceived adequacy of staffing		
100% of the time	17	13.1
75% of the time	46	35.4
50% of the time	46	35.4
25% or less of the time	21	16.2
Leaving intentions of current position		
in the next six months – 1 year	9	6.9
Job satisfaction		
satisfaction with the profession (satisfied / very satisfied)	113	86.9
satisfaction with job position (satisfied / very satisfied)	103	79.2
satisfaction with teamwork (satisfied / very satisfied)	76	58.5

SD – standard deviation

Table 2 The characteristics of patients in surgical units

Patients' characteristics	N	%
Department		
surgery	21	18.6
vascular surgery	30	26.8
orthopedic	20	17.9
trauma	15	13.4
urology	7	6.3
otorhinolaryngology	10	8.9
ophthalmology	9	8.0
Experience with previous hospitalization		
yes	89	79.5
Purpose of the current hospitalization		
surgery	93	83
Gender		
female	68	61.6
male	43	38.4
Overall perception of health status		
poor	13	11.6
fair	42	37.5
good	36	32.1
very good	15	13.4
excellent	6	5.4
Marital status		
married	74	66.1
Education		
elementary school	8	7.1
secondary school	77	68.8
academic degree	27	24.1
	Mean	**SD**
Age	55.3	18.4
Length of stay in hospital (in days)	7.33	11.26

On average, the mean number of activities missed (from occasionally to always) per nurse was only three activities (SD = 4.22). Patients also reported instances where they did not receive all the required care, with a similar mean score (Table 4).

Communication had the highest mean subscale score among the three domains of the MISSCARE-Patient Survey (Table 4). However, many patients reported 'not applicable' to items within the domain of timeliness. Regarding communication, information about the assigned nurse was most often omitted (32.1% of patients reported a response of 'never'), and listening to the patient was the least frequently omitted activity (76.8% of patients reported a response of 'always'). In basic care, assistance with ambulation was most often omitted (18.8% of responses were 'never'), and hygiene care was the activity omitted least often (63.4% of responses were 'always'). From the patients' perspective, nurses' response time was fastest for signaling (with nurses responding in less than five minutes 88.4% of the time) and assistance requested (with nurses responding in less than five minutes 82.1% of the time). Only 20.7% of patients experienced any adverse events. Using the Mann-Whitney test, we found a significant difference in nurse-reported and patient-reported overall missed nursing care scores ($U = 5621.5$, $p = 0.002$). Overall, patients' perceptions of specialist health care measured by the GSPEQ were positive (Table 4). The lowest score was revealed in the item relating to waiting time before admission.

Table 3 Perceived level of missed nursing care by bedside nurses (percentage of nurses reporting positive response frequency > rarely and never)

Missed nursing care events from nurses' perspective (MISSCARE Survey)	Mean (SD)	% Missed[1]
Assessment		
complete documentation of all necessary data	1.48 (0.66)	10.8
IV site care and assessment according to hospital policy	1.38 (0.69)	8.5
monitoring intake / output	1.41 (0.65)	10.8
vital signs assessed as ordered	1.39 (0.66)	10.8
focused reassessment according to the patient	1.60 (0.79)	22.3
hand washing	1.50 (0.80)	17.7
bedside glucose monitoring as ordered	1.10 (0.37)	5.4
patient assessments performed each shift	1.34 (0.77)	5.4
Interventions – Individual Needs		
assesses the effectiveness of medications	1.76 (0.83)	16.9
PRN[2] medication requests acted on within 5 minutes	1.43 (0.69)	7.7
medications administered within 30 minutes	1.71 (0.87)	6.2
assists with toileting needs within 5 minutes of request	1.46 (0.66)	0.8
response to call light provided within 5 minutes	1.46 (0.82)	10
emotional Support to patient and family	1.88 (0.92)	12.3
Interventions – Basic Care		
ambulation three times per day or as ordered	2.56 (1.16)	51.5
turning patient every 2 hours	1.93 (0.93)	24.6
mouth care	1.78 (0.88)	11.5
feeding patient when the food is still warm	1.63 (0.76)	7.7
patient bathing / skincare	1.61 (0.77)	13.1
skin / wound care	1.31 (0.59)	9.2
setting up meals for patients who feed themselves	1.51 (0.74)	10.8
Planning		
patient teaching	1.63 (0.85)	5.4
attend interdisciplinary care conferences whenever held	1.36 (0.61)	13.8
ensuring discharge planning	1.41 (0.77)	6.9
Overall score	1.52 (0.51)	

[1]Missed = Occasionally + Frequently + Always; [2]PRN = "pro re nata" – "when required".

Relationship between nurse-reported and patient-reported missed nursing care and experiences with health care.

Correlation analysis did not reveal any statistically significant correlation between nurse-reported and patient-reported overall missed nursing care scores. Significant associations were found only between the communication subscale and nurse-reported overall missed nursing care scores (Table 5). No statistically significant difference in patients' perceptions of missed care was found between wards ($\chi^2(6) = 12.5$, $p = 0.052$). On the other hand, a statistically significant difference in nurses' perceptions of missed care was found between wards ($\chi^2(96) = 36.15$, $p = 0.001$). Significant negative correlations were found between patients' experiences of specialist health care, nurse-reported and patient-reported overall missed nursing care scores, and the mean subscale scores of the MISSCARE-Patient Survey (Table 5).

Table 4 Patient-reported missed care, patients' experiences with specialist healthcare, and percentage of patients who experienced particular adverse events

	Mean	SD
Missed nursing care events from nurses' perspective	1.62	0.43
Communication – the frequency with which the nurse communicated with the patient (receiving information regarding who their nurse was; communication about tests and procedures; treatment and care; being listened to; having opinions considered)	2.28	0.95
Timeliness – the time it took for the patient to receive care from nursing staff (assistance to the bathroom; addressing a beeping monitor or machine; answering a call light; responding to the call light needs)	1.10	0.21
Basic care (bathing, mouth care, getting out of bed into a chair, ambulation)	2.04	1.10
Patients' experiences of specialist health care and patient-centered care	2.46	0.30
easy to understand	4.52	0.69
confidence in clinicians' professional skills	4.62	0.58
sufficient information	4.47	0.75
treatment care adapted	4.56	0.72
involved in decisions	4.07	1.32
good organization of the institution's work	4.50	0.81
waiting before admission	2.46	1.55
satisfactory help and treatment	4.69	0.56
benefit from the care	4.13	0.95
experiences of incorrect treatment	1.31	0.98
Patients' experiences of adverse events	**N**	**%**
fall	2	1.8
skin breakdown / pressure ulcer	1	0.9
medication administration error	0	0
new infection	5	4.5
IV running dry	8	8
IV leaking into your skin	6	5.4
other problem	0	0

Table 5 Correlations between MISSCARE-Patient Survey, MISSCARE SURVEY, and GSPEQ

	Basic care	Timeliness	Communication	GSPEQ	MISSCARE-Patient Survey
MISSCARE SURVEY (overall score)	0.045	0.128	0.230*	-0.210*	0.48
MISSCARE-Patient Survey (overall score)	0.787**	0.020	0.848**	-0.485**	
GSPEQ	-0.454**	-0.265**	-0.357**		
Communication	0.504**	0.184			
Timeliness	0.278**				

*$p < 0.05$; **$p < 0.01$

Discussion

The study aimed to compare patient and nurse reports of MNC. Consistently, in line with previous studies (Gurková et al., 2022; Zeleníková et al., 2019, 2020, 2023) reporting MNC from the perspective of nurses, we observed the same pattern of MNC – mobilization / ambulation activities, turning the patient every two hours, and activities related to emotional and psychological needs, oral care or assessing the effectiveness of medications were most frequently missed. Conversely, skin / wound care, bedside glucose monitoring, IV site care, assessment, and attending interdisciplinary care conferences or patient and vital signs assessments were identified as the least frequently omitted activities. Zeleníková et al. (2023) found that the most common MNC activities in surgical units were timely response to patient or family requests, followed by emotional / psychological support and adequate supervision of delegated tasks. Administering medications and enteral / parenteral nutrition were identified as the least frequently reported rationed nursing care activity (Zeleníková et al., 2023).

We can conclude that physician-prescribed interventions relating to treatment or technically oriented interventions are least frequently omitted by nurses in acute care hospitals (Zeleníková et al., 2023). On the other hand, independent nursing activities that are time-consuming and may not have a direct and immediate effect on the patient's health status (such as fundamental care and activities related to emotional and psychological needs) have been identified as the most common MNC activities or activities that nurses may overlook. Although the pattern of MNC was comparable with previous studies performed in Slovakia or other European countries, the amount of MNC in our study was lower. For example, in a previous study (Gurková et al., 2020), each nurse left 7.3 nursing care activities unfinished, and item-level rationing frequencies ranged from 17.8% to 66%. In the current study, the mean number of activities missed (from occasionally to always) per nurse was only three activities. Methodological explanations, mainly regarding the research samples in these studies, may clarify this discrepancy in the amount of MNC. The previous study (Gurková et al., 2020) was conducted on a representative sample of 1,429 nurses working in the medical and surgical wards of 21 Slovak hospitals. A different instrument, the Perceived Implicit Rationing of Nursing Care Survey (PIRNCA), was used for the measurement of MNC. Mobilization / ambulation activities were reported by patients and nurses as the most common MNC activities in the present study.

Similar results were reported by Moreno-Monsiváis et al. (2015) in a Mexican study intended to investigate the relationship between nurses' and patients' reports of MNC. Interestingly, while nurses and patients perceive instances of MNC, their perceptions may not always coincide. The nonsignificant relationship between nurses' and patients' reports of MNC suggests differing perspectives on the amount and pattern of MNC. Similar findings emerged in the Mexican study mentioned above (Moreno-Monsiváis et al., 2015), suggesting discrepancies in nurses' and patients' reports of MNC using the MISSCARE surveys. Conceptual and methodological explanations may clarify this discrepancy between nurses' and patients' reports of MNC. Firstly, the setting of priorities in care by patients and nurses is based on different criteria (Bagnasco et al., 2020., Kalisch et al., 2012). Nurses focus more on medical aspects of care (Bagnasco et al., 2020), and their priorities in nursing care are based on their deeper understanding of context and systemic issues (Kalisch et al., 2012). Methodologically, non-significant correlations found in this study between patients' and nurses' reports of MNC may stem from the use of different tools or different items involved in the MISSCARE Survey versions – for patients and nurses. In addition, the second issue is the acceptability and relevance of the MISSCARE-Patient Survey for surgical units in Slovakia, namely the high percentage of unneeded response options across the items in the subscale related to timely response to calls (timeliness subscale). Therefore, the acceptability and psychometric properties of the Slovak version should be tested on a more representative sample. Differences in MNC have been investigated concerning the type of unit from the perspectives of patients and nurses. Another interesting finding of this study was the statistically significant difference in the perception of MNC in surgical wards among nurses but not among patients. A non-significant difference in patients' perception of MNC was found across surgical wards. Ward or hospital type has been identified as a significant predictor of MNC reported by nurses (Jarošová et al., 2021; Tomaszewska et al., 2021; Zeleníková et al., 2023). Future research is needed to focus on the factors contributing to MNC from patients' perspectives. Compared to previous studies using the MISSCARE-Patient Survey (Dabney & Kalisch, 2015; Cho et al., 2017), lower mean scores regarding basic care and higher communication were found. Surgical inpatients'perceptions of overall MNC were occasional; communication was most frequently missed (Table 4), followed by basic care and timeliness. In a review by Bagnasco et al. (2020), the most common MNC activities and unmet needs in surgical and medical inpatients' settings were related not only to missed communication, fundamental care, or timeliness of nursing care but also to the 'personal sphere' and 'emotional and psychological care.' Significant negative correlations were found between patients' experiences of specialist health care, and nurse-reported, and patient-reported overall missed nursing care. In line with a previous Swiss study (Bachnick et al., 2018), the current study found a negative relationship between MNC (from the perspective of nurses and patients) and patient-centered care, meaning that the lower the level of MNC, the better patients understood nurses, the more sufficiently informed they felt, and the more aware they were that they received highly individualized care. However, a significant proportion of patients did not experience any adverse events, so the relationship between patient-reported missed nursing care and the occurrence of adverse events was not examined.

A strength of this study is the simultaneous data collection from nursing staff and patients, enabling the comparison of MNC reports from both perspectives. However, the use of convenience sampling of nurses and the fact that the study was conducted in only one hospital and type of unit may limit the generalizability of the results. Secondly, the inclusion criteria for the study potentially excluded patients admitted to the surgical ward who could not communicate effectively due to their medical condition, resulting in a sample that may not have fully represented diverse experiences. Finally, we sampled patients from a limited number of health facilities, which may have affected the homogeneity of some patient statements.

Conclusion

The study indicated a significant difference between nurses' and patients' perceptions and experiences of MNC, highlighting the importance of including both perspectives. Patients and nurses reported mobilization / ambulation activities as the most common MNC activities in the present study. A significant difference in the perception of MNC in surgical wards was found among nurses, but not among patients. Only 20.7% of patients experienced any adverse events during hospitalization in surgical units. The overall mean score of the MISSCARE versions was low, suggesting nurses' and patients' tendency to perceive MNC as a rare occurrence. Patients' perceptions of specialist health care were positive.

A negative association between MNC from the perspective of nurses and patients and various dimensions of patient-centered care was revealed.

Ethical aspects and conflict of interest

The study was approved on 13 November 2023 by the Ethics Committee of the J. A. Reiman Faculty Hospital in Prešov (63 / EK / 2023). The authors declared no potential conflicts of interest concerning the research, authorship and / or publication of this article.

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Author contributions

Conception and design (EG, KZ), data analysis and interpretation (EG, JS), manuscript draft (EG, JS, KZ), critical revision of the manuscript (EG, KZ), final approval of the manuscript (EG, JS, KZ).

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