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Original research article

Continuous professional development of nurses and its impact on missed nursing care in hospitals in Indonesia: A mixed-method study

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Abstract
Objective: This study aimed to examine the implications of continuous professional development and its impact on missed nursing care (MNC) in hospitals during the COVID-19 pandemic.
Design: The method used was a sequential explanatory mixed design.
Methods: This qualitative study included 29 nurses who participated in in-depth interviews and focus group discussions. All participants were interviewed over five semi-structured interviews, with quantitative data divided into factors influencing knowledge transfer practices and MNC surveys. The sample size for the quantitative research was 181 people.
Results: Seven main themes were identified in the qualitative study: clinical learning activity in hospitals, need for motivation in learning, organizational leadership and support for continued professional development (CPD), obstacles in clinical learning, an overview of caring in nursing care, incidents of MNC, and expectations for CPD. The quantitative data show that nurses (n = 181) reported that one or more care activities had been left undone due to lack of time on their shift (31.5%), bell response (44%), and reviewing drug effectiveness (47.4%). The most common reasons for MNC are an inadequate number of staff, inadequate shift-to-shift handoff, and communication breakdown within the nursing team.
Conclusion: There were numerous incidents of MNC in hospitals during the COVID-19 pandemic. Increased CPD awareness can provide nurses with knowledge about MNC in nursing care.

Keywords: Continuous professional development; COVID-19; Missed nursing care

Introduction

Healthcare professionals must regularly update their skills. Continuing education, also known as continued professional development (CPD), enables the renewal and updating of skills in healthcare settings. CPD programs are essential for nurses' lifelong learning and for keeping their knowledge and skills up to date (Mlambo et al., 2021). CPD is critical for a nurse's career advancement and for providing person-centered, safe, and effective evidence-based care in the workplace (Jackson and Manley, 2021). However, most certified CPD activities focus on knowledge dissemination, which reassures health professionals about the quality of their practice without causing significant behavioral change.

Nurses' knowledge is related to nursing safety and near misses in care (Kalisch, 2017). They are responsible for ensuring that such complications are avoided through quality and precise care. Opportunities for continuing education and CPD ensure nursing competence and improve healthcare quality (Page et al., 2020). Nurses who embrace the knowledge, skills, and attitudes of nursing competencies are more likely to respond sensitively to various patient needs and less likely to overlook necessary care (Thomas-Hawkins et al., 2020). Behavioral changes following CPD are required in high-quality nursing care because patient safety is endangered by omission error (Cho et al., 2020). Global research efforts on MNC have increased dramatically over the last two decades (Gurková et al., 2021). This is not surprising, as MNC is a key indicator of nursing care quality and safety.

Nurses play an essential role in hospitals, but 94% of them stated that at least one or more nursing care activities were neglected (Palese et al., 2021). Studies in the last decade have been associated with teamwork, communication, material resources, and labor resources (Kalisch et al., 2012). Activities such as ambulation, posture changes, personal hygiene, oral health care, food delivery, patient education, emotional support, fluid intake, output documentation, discharge planning

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for patients, and general nursing surveillance are examples of care items that are frequently overlooked (Albsoul et al., 2019, Dolezel et al., 2021; Nilasari and Hariyati, 2021). Many studies have shown that MNC is related to factors in the care environment that facilitate or impede nursing practice. These include stressful circumstances, insufficient staffing, and an ambiguous work environment (Simonetti et al., 2022; Wu and Liu, 2022).

During the COVID-19 pandemic, many webinars were held as part of the nurses' continuing professional development. An increase in nurses' CPD should result in better nursing care quality, but conditions such as the COVID-19 pandemic, which necessitate limited interaction between nurses and patients, can result in MNC. Under these conditions, it is rational to be concerned about MNC in Indonesian hospitals. However, to date, no studies have been conducted in this area.

Aim

The study aims to investigate nurses' experiences of implementing CPD and to identify the common MNC elements during the COVID-19 pandemic.

Materials and methods

Design

An exploratory sequential design was applied to the study. The qualitative data were gathered through semi-structured interviews and analyzed to help explain the results obtained in the first phase.The qualitative data were collected and analyzed to determine the factors affecting knowledge transfer from CPD to clinical practice and MISSCARE surveys.

Sample

The sample for the qualitative study consisted of focus group discussions held by 14 head nurses. In-depth interviews were conducted with 15 associate nurses. In the quantitative phase, a convenience sample of 181 nurses met the study criteria. The study was conducted in government hospitals in Jakarta, Indonesia. The inclusion criteria were one year of work experience, a first clinical nurse career path, participation in CPD, and experience with providing care to COVID-19 patients.

Data collection

Qualitative data collection

For flexibility during the COVID-19 pandemic, a self-designed, semi-structured questionnaire was used to guide face-to-face and online interviews. The participants in this study were nurses and managers from two tertiary hospitals in Indonesia. Focus group discussions were held with 14 head nurses in groups of 5 to 6, while in-depth interviews were conducted with 15 associate nurses. Consolidated criteria for reporting qualitative research (COREQ) were used (Tong et al., 2007). The research questions concerned nursing activity during COVID-19, barriers to CPD during the pandemic, nurses' interpretations of implementing CPD, and MNC activity in the ward. The participants were also asked to describe their experiences with CPD and MNC activities. The interviews were recorded using a tape recorder and mobile phone. Data saturation was achieved during the third focus group discussion, when no new information emerged and repetitive data was observed.

Quantitative data collection

A self-reported questionnaire survey was used to collect the data. Of the 210 nurses who met the inclusion criteria, 181 nurses completed the survey (87% response rate). The inclusion criteria were nurses working in a hospital and who had been previously involved in CPD activities. The first section of the questionnaire covered factors that affect the knowledge transfer from CPD to clinical practice (Vasli et al., 2018). The Cronbach's alpha of this questionnaire was 0.957. The second section of the questionnaire used a MISSCARE survey instrument (Kalisch et al., 2012). The Cronbach's alpha of this questionnaire was 0.911. Finally, the STROBE checklist was used to collect quantitative data (Tong et al., 2007).

Data analysis

Qualitative data analysis

The Colaizzi technique was used to analyze qualitative data by coding keywords, categories, and subthemes, which were then distilled into themes (Wirihana et al., 2018). Transcripts were organized and coded separately by two researchers (NMR and RS). *In vivo* software was applied to cluster keywords, understand the context, mark and code the content related to the research process, and identify problems as categories of results. The final coding was performed by consensus, and the resulting themes were then shared and discussed with the rest of the research team (NMR, RTH, RS, and TAP). Transferability was improved through the inclusion of nurses of various ages and work experience. Dependability was promoted by holding regular meetings to discuss the data analysis.

Quantitative data analysis

This study was conducted from February to April 2022. In the quantitative stage, the respondents completed a questionnaire at the end of their shift. Descriptive statistics determined the demographic characteristics of the respondents, and a self-reported questionnaire survey was organized using SPSS.

Results

Participants

The 29 recruited participants were licensed nurses between 26 and 52 years old (75.8% female) with 3 to 38 years of work experience. At the time of the interviews, 14 and 15 individuals worked in hospitals as head nurses and associated nurses, respectively. For the quantitative study, 77.3% of the 181 participants were women, 63.5% had a diploma in nursing, and 78.5% worked as permanent employees in hospitals (Table 1).

Qualitative findings

The qualitative exploratory study revealed seven main themes related to nurse CPD activities and MNC incidents during the COVID-19 pandemic. These are elaborated below (Table 2).

Theme 1: Clinical learning activities in hospitals

Most of the participants stated that they had not regularly learned about hospital activities during the COVID-19 pandemic – for example with case studies or discussion case reflection. This was no longer performed due to time and staff limitations; hence, the discussion method was mostly online.

Table 1. Sociodemographic data

	Qualitative sample (n = 29)	Quantitative sample (n = 181)
Variable	%	n (%)
Gender		
Male	9 (31.0)	41 (22.7)
Female	20 (69.0)	140 (77.3)
Educational attainment		
Diploma	3 (10.3)	115 (63.5)
PN	19 (65.5)	63 (34.8)
MN	7 (24.1)	2 (0.01)
Status of employment		
Temporary	12 (41.3)	39 (21.5)
Permanent	17 (58.6)	142 (78.5)
Age		
21–30	20 (69.0)	90 (49.7)
31–40	9 (31.0)	70 (38.7)
41–50	–	21 (11.6)
Length of service		
<10 years	5 (17.2)	96 (53.0)
10–20 years	24 (82.8)	61 (33.7)
21–30 years	–	24 (13.3)

Table 2. Themes and subthemes

No.	Themes	Subthemes
1.	Clinical learning activities in hospitals	a. Methods of learning in hospital b. Lack of time for learning c. Use of learning media
2.	Need for motivation in learning	a. Intrinsic motivation b. Extrinsic motivation
3.	Organizational leadership and support for CPD	a. Organizational support in implementing CPD in hospitals b. Hospital policy for CPD c. Head nurses' support for CPD
4.	Obstacles in clinical learning	a. Lack of nursing staff b. Nurses' ability to learn
5.	An overview of caring in nursing care	a. The causes of insufficient caring b. The components of caring
6.	Incidents of MNC	a. Causes of MNC b. Activity of MNC c. Prevention of MNC
7.	Expectations in CPD	a. Patient satisfaction b. Nurse competency improvement c. Leadership role model

"The learning activities in my ward also include dissemination, which is led by the senior nurse and consists primarily of training and explanation for colleagues. This was held via Zoom but not regularly" (P25, 28 years old, PN).

Another nurse stated that there was already a learning activity in the ward on a regular basis: *"The discussion of the case reflection learning method is available for our employees. Reading journals was promoted to gain knowledge about current issues or evidence-based research at least once a month"* (P22, 47 years old, PN).

Theme 2: The need for motivation in learning

Some participants stated that they lacked the motivation to attend discussions. This was due to many factors, such as the inability to learn, lack of learning references, and limited human resources.

"Due to the short timeframe and the requirement that all nurses, nurses participate in discussion programs in the ward or attend webinars to earn credit points, but often there is a lack of motivation in the discussion process due to ward busyness" (P26, 36 years old, MN).

"Some of us are exhausted as a result of the increased number of patients on the ward, and we are expected to complete the task. I do not believe I can do both" (P14, 47 years old, MN).

Theme 3: Organizational leadership and support for continuous professional development

Participants identified organizational support for implementing CPD in hospitals, hospital policies for long-term professional development, and CPD support from leaders and head nurses.

"There is support from leaders and communities working with us. He immediately conveyed the methods to us for him to see the conditions in the ward" (P21, 45 years old, PN).

"The hospital provides funding to encourage ongoing research for all employees" (P22, 36 years old, PN).

Theme 4: Obstacles to clinical learning

Some participants stated that the obstacles in clinical learning included a limited number of staff, lacking the ability to learn, and patient dependency levels.

"The barrier to clinical learning in my ward is that we are understaffed; hence, we are too occupied with providing care and do not have time to discuss patient conditions" (P14, 47 years old, MN).

"Because of our diverse educational backgrounds and the limited literature available in the room, not all nurses have the same understanding of patient cases" (P16, 41 years old, PN).

Theme 5: An overview of caring in nursing care

Participants explained that it was difficult to apply caring in nursing care due to limited communication between patients and nurses, a large number of patients, a limited number of nursing staff, and a large number of medical treatments that must be carried out by nurses, causing nurses to focus solely on activities such as drug administration.

"The level of care decreases when the ward is overcrowded, such that we do not visit as often or spend as much time with each patient" (P3, 43 years old, PN).

"Sometimes, we want be more caring but do not have a lot of staff" (P11, 30 years old, PN).

"There is a lack of care due to the greater focus on medical treatment" (P12, 26 years old, PN).

Theme 6: Incidences of MNC

The sixth theme is a description of the incidences of MNC in a ward. This consists of two subthemes. The first is the causes of MNC, which include increased patient volume, fully occupied rooms, and insufficient time. The second focuses on nursing care activities that are frequently overlooked and can be further divided into three categories: inadequate documentation, drug administration, and patient mobilization delays.

"There are a large number of patients and a small number of staff; hence, we are not always optimal in documenting nursing care, and activities that are frequently missed are usually patient mobilization. However, when it comes to drug administration, we always strive to be on time" (P28, 39 years old, MN).

"Due to many surgeries in our ward, we had to transfer the patients to the operating room. As a result, the service is occasionally

delayed. Wound care and nursing care documentation are two of the most frequently delayed activities" (P24, 34 years old, PN).

Theme 7: Expectations for CPD

The seventh theme of nurses' expectations for sustainable professional development was divided into: patient satisfaction, service quality, increasing competence, and the need for a nursing leadership role model.

"It is hoped that patients can feel the nursing care, the presence of nurses, [and] *caregivers can continue to learn, even with limited working hours"* (P26).

"We expect to have a role model in the room; so that we can observe the activities of senior nurses" (P16).

"I want to be able to continue my education to improve my skills as an intensive care nurse" (P15).

The results of a quantitative study about the factors affecting knowledge transfer from continuing professional education to clinical practice are as follows.

Quantitative results

We obtained responses from 181 (83%) of the 210 participating nurses. The factors affecting knowledge transfer from CPD consist of four structural subvariables: organizational structure and climate, individual characteristics, professional nature and qualification, and educational program.

The second instrument was used to evaluate the findings of a quantitative study that sought to describe MNC on an inpatient ward. MISSCARE surveys included nurse workload in the hospital, MNC activity in the hospital, and the reason for MNC (Table 3).

According to the data in the table, 96.7% of respondents work more than 30 hours per week, with 72.4% rotating shifts. Only 8.8% of respondents reported missing work due to illness, injury, or extra rest over 6 days or shifts, while only 12.7% reported adequate staffing. The rest stated that unit staffing is insufficient (Table 4).

Based on Table 5, the activities that are often missed include turning patients every 2 hours 86%, monitoring intake output 94%, emotional support for patients and their families 88.6%.

The most significant reasons for MNC were the inadequate number of staff (67.25%), Inadequate handover from the previous shift or sending unit (67.25%), and communication breakdown within the nursing team (67.25%) – Table 6.

Table 3. Factors affecting knowledge transfer from continuing professional education in clinical practice (*n* = 181)

Variable	Mean	SD	95% CI	%
Factor 1: Organizational structure and climate				
There is a willingness to accept change in the hospital department I work in.	4.15	0.595	4.07–4.24	83.0
There is a climate of welcoming new knowledge within the hospital and the department I work in.	4.12	0.570	4.03–4.20	82.4
Authorities support us in the implementation and use of the training.	4.10	0.532	4.03–4.18	82.0
My nursing colleagues support me adequately in terms of the implementation of new knowledge.	4.12	0.570	3.98–4.15	81.4
An attitude toward providing high-quality care predominates in this hospital department.	4.20	0.535	4.13–4.28	84.0
The majority of my department colleagues participate in the education program to apply the training and implement the change.	3.68	0.808	3.56–3.80	73.6
There are sufficient equipment and facilities to implement new knowledge in this department.	3.93	0.583	3.85–4.02	78.6
The organization has considered financial incentives to apply the new knowledge.	3.34	0.962	3.20–3.48	66.8
Factor 2: Individual characteristics				
I have enough accountability in terms of the application of knowledge.	3.70	0.634	3.60–3.79	74.0
My commitment and work conscientiousness as a nurse can affect the application of my knowledge.	4.09	0.486	4.02–4.16	81.8
My interest in the nursing profession has made me apply new knowledge in the hospital department.	4.11	0,557	4.03–4.19	82.2
I have the motivation to implement the knowledge.	4.15	0.532	4.07–4.23	83.0
Factor 3: Professional nature and qualification				
Nurses' motivation to participate in education programs is usually to gain scores but not to implement knowledge.	4.15	0.532	4.07–4.23	83.0
The description of our duties has not changed based on the development of science and technology.	3.28	0.962	3.14–3.31	65.6
Time-consuming feature of the process of change prevents the implementation of new knowledge.	4.10	0.597	4.01–4.19	82.0
As a nurse, I do not have the necessary autonomy to implement the knowledge.	3.68	0.808	3.56–3.80	73.6
Factor 4: Education program				
The content of the training is new and updated.	4.18	0.569	4.10–4.25	83,6
Education programs are in line with my training needs as a nurse.	4.06	0.565	3.97–4.14	81.2

Note: SD: standard deviation, CI: Confident Interval.

Table 4. Nurses' workload in hospitals (*n* = 181)

Variable	*n* (%)
Typical number of working hours per week	
1. Less than 30 hours per week	6 (3.3)
2. 30 hours or more per week	175 (96.7)
Working hours	
1. Days (8- or 12-hour shifts)	41 (22.7)
2. Evenings (8- or 12-hour shifts)	9 (5.0)
3. Nights (8- or 12-hour shifts)	–
4. Rotates shift between days, nights, or evenings	131 (72.4)
Experience in their role	
1. Up to 6 months	3 (1.7)
2. From 6 months to 2 years	10 (5.5)
3. From 2 years to 5 years	30 (16.6)
4. From 5 years to 10 years	44 (24.3)
5. More than 10 years	94 (51.9)
Overtime in the past three months	
1. None	95 (52.5)
2. 1–12 hours	68 (37.6)
3. More than 12 hours	18 (9.9)
Missed work due to illness, injury, extra rest	
1. None	77 (42.5)
2. 1 day or shift	57 (31.5)
3. 2–3 days or shifts	23 (12.7)
4. 3–6 days or shifts	8 (4.4)
5. Over 6 days or shifts	16 (8.8)
Leaving the current position	
1. In the next 6 months	–
2. In the next year	9 (5.0)
3. No plans within the year	172 (95.0)
The unit staffing is adequate	
1. 100% of the time	23 (12.7)
2. 75% of the time	89 (49.7)
3. 50% of the time	60 (33.1)
4. 25% of the time	9 (5.0)

Table 5. Missed nursing care activities in the hospitals (*n* = 181)

Variable	Mean	SD	%
Ambulation three times per day or as ordered	4.27	0.729	85.4
Turning patient every 2 hours	4.30	0.708	86.0
Feeding patient when the food is still warm	3.96	0.718	79.2
Setting up meals for patients who feed themselves	4.04	0.802	80.8
Medications administered within 30 minutes before or after the scheduled time	4.12	0.917	82.4
Vital signs assessed as ordered	3.98	1.003	79.6
Monitoring intake/output	4.70	0.567	94.0
Full documentation of all necessary data	4.24	0.799	84.8
Teaching patient about their illness, tests, and diagnostic studies	4.35	0.681	87.0
Emotional support for patient and/or their family	4.43	0.651	88.6
Patient bathing/personal bodycare	4.33	0.690	86.0
Mouth care	4.30	0.641	83.6
Hand hygiene	4.18	0.866	83.4
Patient discharge planning and health education	4.17	0.744	83.0
Bedside glucose monitoring as ordered	4.15	0.781	79.2
Patient assessments performed each shift	3.96	0.829	84.4
Focused reassessment according to patient condition	4.22	0.812	84.4
IV/central line site care and assessments according to hospital policy	2.24	1.113	44.0
Response to call light is initiated within 5 minutes	2.20	1.267	44.8
PRN medication requests were acted on within 15 minutes	2.37	1.165	47.4
Assess the effectiveness of medications	2.37	1.106	47.4
Attend interdisciplinary care conferences whenever held	2.64	1.010	52.8
Assist with toilet needs within 5 minutes of request	2.44	1.071	48.8
Skin/Wound care	2.23	1.111	44.6

Table 6. Reasons for missed nursing care

Variable	Mean	SD	%
Inadequate number of staff	2.69	1.040	67.25
Urgent patient situations	2.67	1.069	66.75
Unexpected rise in patient volume and/or acuity in the unit	2.48	1.093	62.0
Inadequate number of assistive and/or clerical personnel	2.41	1.064	60.25
Unbalanced patient assignments	2.62	0.985	65.5
Medication was not available when it was needed.	2.64	1.010	66.0
Inadequate handover from the previous shift or sending unit	2.70	1.049	67.5
Other departments did not provide the care needed (*e.g.*, the patient was not ambulated as a result of physical therapy)	2.65	1.030	66.25
Supplies/equipment not available when they were needed	2.62	1,066	65.5
Supplies/equipment were not functioning properly when they were needed	2.62	1.175	65.5
Lack of backup support from team members	2.52	1.093	63.0
Tension or communication breakdown with other ancillary/support departments	2.64	1.010	66.0
Tension or communication breakdowns within the nursing team	2.70	1.049	67.5
Tension or communication breakdowns with the medical staff	2.65	1.030	66.25
The nursing assistant did not communicate that care had not been provided	2.64	1.064	66.0
Caregiver was off the unit or unavailable	2.61	1.171	65.25
Heavy admission and discharge activity	2.52	1.093	63.0

Discussion

The COVID-19 pandemic posed a great challenge to the healthcare system; hence, it is time to determine how best to support nurses in their CPD. COVID-19 presented a challenge to health workers in terms of CPD in providing care to COVID-19 patients. With limited time to provide care, a limited number of nursing human resources, and restrictions on nursing care activities, nurses are expected to provide nursing care without failing patients. According to the study, clinical learning is an essential competency that nurses should possess. The clinical environment is an essential component of nurse education that is constantly changing due to current healthcare system challenges (Stenberg et al., 2020). CPD activities must be regularly carried out on inpatient wards to ensure that nurses have appropriate knowledge and understand appropriate interventions (Choperena et al., 2020). CPD activities refer to nurses' learning methods, which range from formal continuing education to spontaneous learning while working with patients or socializing with colleagues. Formal education programs, reflective practice, journal clubs, case-conferences, clinical supervision, learning sets, preceptorship, mentorship, workshops, distance learning, blended learning, e-learning, sourcing information, and self-directed learning are examples of activities that may contribute to a nurse's professional development (Hakvoort et al., 2022).

A workplace that fosters respectful relationships (as well as individual and collective knowledge creation and practice transformation) is essential for effective CPD. Self-motivation, relevance to practice, workplace learning preferences, and strong enabling leadership are key factors in promoting the positive impact of CPD on nurses' motivation. (King et al., 2021). Organizational support is required in the implementation of CPD programs (Fencl and Matthews, 2017), and this includes an individual commitment to organizational development, analysis of training requirements based on staff needs, development of policies based on needs, and provision of training and education. According to Alilyyani et al. (2018), organizational support is also a method of ensuring the continuity of CPD by providing effectiveness and improvement in the quality of staff and nursing care. Intrinsic motivation, such as acquiring new knowledge and skills, is a primary motivator for conducting professional development (King et al., 2021; Oldland et al., 2022). Nurses must be motivated to participate in CPD activities in order to improve knowledge acquisition, retention of core skills, career advancement, and nursing role expansion.

The results showed that nurses experienced obstacles to clinical learning. Nurses did not have enough time to provide caring in nursing care due to crowded conditions on the ward, a limited number of staff nurses, and routine activities. According to the MISSCARE survey, 96.7% of respondents worked more than 30 hours per week, and the majority of nurses who worked overtime worked more than 12 hours overtime per month. This can lead to burnout and a decrease in learning motivation Furthermore, the factors that improve self-motivation are the perceived relevance of CPD, a desire to provide high-quality, safe, and effective care, peer attitudes and the valuing of learning, and a desire for career progres-

sion and concomitant remuneration (Hakvoort et al., 2022). However, nurses face challenges in meeting their learning objectives. The perceived barriers include the small number of employees and their ability to learn. It was difficult for nurses to participate in learning activities due to certain obstacles and problems with balancing work and study, a lack of control over their schedules, and their work duties (Lamb et al., 2018). Barriers to learning needs are caused by a lack of organizational support, lack of individual desire to change, lack of self-awareness in learning, inappropriate clinical skills, knowledge, and professional development, fear of learning new things, and lack of incentives to participate in educational programs.

According to the study findings, 65.6% of nurses believed that job descriptions did not change in response to advances in science and technology. Nurses need to develop qualities such as being innovative, having influence and advocacy to influence their work environment and professional development in a positive way. Workplace activity is another element that impedes the learning motivation of nurses (Harrison-Blount et al., 2019). Therefore, it is essential to create highly functional workplace teams and a positive ward climate without fear of punishment. The key to effective CPD is a workplace that promotes knowledge creation and transformation (King et al., 2020). Furthermore, the desire to expand and develop new roles, increase job opportunities, achieve professional goals, and have an interest in the impact of nursing research on patient care are all motivating factors for further professional development (Hakvoort et al., 2022).

This study's results reveal the impact of CPD on MNC in various wards. It was discovered that labor resources are the most commonly reported cause of MNC, followed by material and communication factors. This might be explained by the fact that when staffing levels are low during a shift and the quantity or severity of patients is high, nurses may be obliged to prioritize care (Cho et al., 2020). Interestingly, we found that an MNC on the ward was caused by two factors: an increase in the number of patients and a shortage of nursing staff during the pandemic. Based on the study, nurses do not have time to conduct case studies or incorporate CPD knowledge into nursing care; nurses prioritize care based on patient needs due to time constraints. This results in nursing care activities being missed. Past studies have shown that the involvement of nurse managers was reduced by leadership when they assessed staffing needs and implemented staffing plans, improved time management skills, promoted teamwork, and effectively managed admissions and discharge (Longhini et al., 2021). To reduce MNC, nursing managers should pay closer attention to staff mix rates, nurses' competency levels, workload, non-nursing tasks, the availability of supportive or auxiliary staff, and patient acuity.

This study showed the causes of MNC, which included three categories: an increased number of patients, crowded rooms, and insufficient time. The quantitative data showed that most MNC activity during the COVID-19 pandemic was related to monitoring intake output and delivering health education to patients regarding their illness. MNC not only has a negative impact on patients but also on the quality of nursing care (Cho et al., 2020). Insufficient staff levels can lead to MNC (Rahmah et al., 2022; Recio-Saucedo et al., 2018). According to Kalisch and Lee (2010), MNC can occur due to a variety of factors, including staff roles, teamwork, hospital setting, hospital type, and number of working hours. A past study has shown that despite 94% of nurses reporting having missed at least one caring activity, their role remains critical when someone is hospitalized (Griffiths et al., 2018). The study revealed that efforts to prevent MNC fall into three categories: teamwork, family support, and leadership supervision. Various efforts have been made in various countries to reduce the incidence of MNC, including those made by Cho et al. (2016), who implemented a model of increasing the number of human nursing resources on wards. Moura et al. (2020) applied the primary nurse assignment method model in hospitals; the model was successful in reducing the number of MNC incidents by 78.2%. Srulovici and Drach-Zahavy (2017) developed an accountability model that includes personal responsibility as well as inpatient room responsibility for handling MNC.

During the COVID-19 pandemic, nurses attended CPD to develop patient care competencies as part of their roles. CPD refers to the experiences, activities, and processes that help a nurse grow as a health care professional. As a result, CPD is a lifelong process of both structured and informal learning. Finally, CPD opportunities influence the ability of nurses to increase their skills in providing high-quality care to patients and preventing MNC.

Limitations

This study asked nurses to recall MNC events from their previous shifts, so recall bias should not be an issue here. However, the study also had limitations. It was based on nurses' self-reported MNC activities rather than an objective assessment of the parameters, which might have led to response bias in the data. Moreover, this study did not find a statistically significant relationship between nurse participation in CPD and incidences of MNC in hospitals, so further research is needed to establish a link between nurse participation in CPD and its impact on reducing MNC in hospitals.

Conclusion

According to the study findings, nurse participation in CPD activities does not reduce the occurrence of MNC. However, CPD can raise awareness of MNC in nursing care. The results showed that many obstacles occurred in professional development activities during the COVID pandemic, including the need for additional nursing staff, increased competence, and leadership role models to prevent missed nursing care in hospitals.

Ethical considerations

Ethical approval was also obtained from the Ethics Committee of the Faculty of Nursing, University of Indonesia (Approval ID: 227/UN2.F12.Di.2.1/PPM.00.02/2021). All participants were informed about the study's purpose and procedures, as well as the confidentiality of the data at the individual, unit, and hospital levels. The names of the participants were removed during verbatim transcription to ensure anonymity. The participants were informed that no personally identifiable information would be published in this paper, and their written informed consent was obtained.

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Contributors
NMR conceived the study, performed data analysis, interpreted the results, and drafted the manuscript. RTSH contributed to the introduction, managed the literature searches, and interpreted the results. RS contributed to the introduction and interpreted the results. TAP contributed to data analysis and interpreted the results.

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Ethical aspects and conflict of interests
The authors declare that there are no conflict of interests concerning this work.

Neustálý profesní rozvoj sester a jeho dopad na zameškanou ošetřovatelskou péči v nemocnicích v Indonésii: studie smíšenou metodou

Souhrn
Cíl: Cílem této studie bylo prozkoumat důsledky neustálého profesního rozvoje a jeho dopad na zameškanou ošetřovatelskou péči (ZOP) v nemocnicích během pandemie covidu-19.
Design: Použitou metodou byl sekvenční vysvětlující smíšený design.
Metodika: Tato kvalitativní studie zahrnovala 29 sester, které se účastnily hloubkových rozhovorů a diskusí ve skupinách. Všichni účastníci byli dotazováni v rámci pěti polostrukturovaných rozhovorů, přičemž kvantitativní data byla rozdělena na faktory ovlivňující postupy přenosu znalostí a průzkumy nadnárodních společností. Velikost vzorku pro kvantitativní výzkum byla 181 osob.
Výsledky: V kvalitativní studii bylo identifikováno sedm hlavních témat: klinická vzdělávací aktivita v nemocnicích, potřeba motivace při učení, organizační vedení a podpora kontinuálního profesního rozvoje (KPR), překážky v klinickém učení, přehled péče v ošetřovatelské péči, incidenty ZOP a očekávání pro ZOP. Kvantitativní údaje ukazují, že sestry (n = 181) uvedly, že jedna nebo více pečovatelských činností byly vynechány kvůli nedostatku času na směně (31,5 %), reakci na zvonek (44 %) a kontrole účinnosti léků (47,4 %). Nejčastějšími důvody ZOP jsou nedostatečný počet personálu, nedostatečné předávání směn a špatná komunikace v ošetřovatelském týmu.
Závěr: Během pandemie covidu-19 došlo v nemocnicích k četným incidentům ZOP. Zvýšené povědomí o KPR může sestrám poskytnout znalosti o ZOP v ošetřovatelské péči.

Klíčová slova: covid-19; neustálý profesní rozvoj; zameškaná ošetřovatelská péče

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