REVIEW ARTICLE

Research on missed nursing care during the COVID-19 pandemic: A scoping review

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Abstract

Background: Missed nursing care is defined as care that is delayed, partially completed, or not completed at all. The scenario created by the COVID-19 pandemic may have influenced multifactorial determinants related to the care environment, nursing processes, internal processes, and decision-making processes, increasing missed nursing care.

Aim: This scoping review aimed to establish the quantity and type of research undertaken on missed nursing care during the COVID-19 pandemic.

Methods: This review was conducted following the Joanna Briggs Institute methodology for scoping reviews. We searched CINAHL, MEDLINE, Scopus, two national and

regional databases, two dissertations and theses databases, a gray literature database, two study registers, and a search engine from November 1, 2019, to March 23, 2023. We included quantitative, qualitative, and mixed studies carried out in all healthcare settings that examined missed nursing care during the COVID-19 pandemic. Language restrictions were not applied. Two independent reviewers conducted study selection and data extraction. Disagreements between the reviewers were resolved through discussion or with an additional reviewer.

Results: We included 25 studies with different designs, the most common being acute care cross-sectional survey designs. Studies focused on determining the frequency and reasons for missed nursing care and its influence on nurses and organizational outcomes.

Linking Evidence to Action: Missed nursing care studies during the COVID-19 pandemic were essentially nurses-based prevalence surveys. There is an urgent need to advance the design and development of longitudinal and intervention studies, as well as to broaden the focus of research beyond acute care. Further research is needed to determine the impact of missed nursing care on nursing-sensitive outcomes and from the patient's perspective.

K E Y W O R D S
COVID-19, missed nursing care, patient care, patient safety, quality of health care, research, scoping review, unfinished nursing care

INTRODUCTION

Missed nursing care is defined as "any aspect of required patient care that is omitted (either in part or in whole) or delayed" (Kalisch, Landstrom, & Hinshaw, 2009). This phenomenon was first described in 2001 as "tasks left undone" (Aiken et al., 2001). Subsequently, other terms appeared, including "missed nursing care" (Kalisch, 2006) and "implicitly rationed nursing" (Schubert et al., 2007). Therefore, an attempt was made to introduce a single umbrella term for all these concepts, "unfinished nursing care" (Jones et al., 2015). However, this term has not been widely adopted, as there is still debate whether these original terms reflect a common phenomenon. For instance, unlike implicit rationing, missed nursing care is associated with unconscious decision-making and unintentional acts. It means nurses do not consciously decide what care is left undone – they keep working until their time is up (Papastavrou & Suhonen, 2021; Willis et al., 2021). This terminological and conceptual diversity has contributed to increasing confusion and misunderstandings. Nevertheless, "missed nursing care" is the most frequently used term in the scientific literature to describe this phenomenon (Papastavrou & Suhonen, 2021).

Missed nursing care is a relevant and prevalent phenomenon in healthcare systems worldwide, with severe consequences on patient outcomes (Kalisch, Landstrom, & Williams, 2009). Studies show that it could result in increased mortality, adverse events, and failure to rescue (Willis & Brady, 2022). The determinants of missed nursing care are multifactorial and include characteristics of the care environment that facilitate or inhibit nursing practice, elements of

the nursing process, and nurses' internal perceptions and decision-making processes (Kalisch, Landstrom, & Hinshaw, 2009). The COVID-19 pandemic created a scenario in which these determinants could play a more significant influence on missed nursing care mainly due to the highly dynamic clinical context, fear of contracting or spreading infection, lack of resources and training, and physical and mental exhaustion (Zipf et al., 2022). However, although missed nursing care has recently generated significant interest and several literature reviews have been published on the topic (Chaboyer et al., 2021), available research on missed nursing care during the COVID-19 pandemic has not been identified in any ongoing or published reviews.

The evidence on missed nursing care during the COVID-19 pandemic is emerging, and it is not yet clear what specific questions can be raised and valuably addressed by a systematic review, which is why we decided to develop a scoping review to provide a broad overview of the research conducted on missed nursing care during the COVID-19 pandemic (Munn et al., 2018; Pollock et al., 2021).

Aim

This scoping review aimed to examine how research was conducted on missed nursing care during the COVID-19 pandemic. The following research question was formulated: What is the nature and extent of the research conducted on missed nursing care during the COVID-19 pandemic?

METHODS

Design

This review was conducted following the Joanna Briggs Institute (JBI) methodology for scoping reviews (Peters et al., 2020) and reported in accordance with the preferred reporting items for systematic reviews and meta-analyses extension for scoping reviews (PRISMA-ScR; Tricco et al., 2018). The review protocol was prospectively published in the Open Science Framework platform (available at https://doi.org/10.17605/OSF.IO/QT8E7); no changes were made to this protocol.

Search methods

The following databases and information sources to identify reports on the topic were used:

1. Key international general healthcare and bibliographic databases – MEDLINE (via PubMed) and Scopus.
2. Subject-specific databases – CINAHL (via EBSCO).
3. National and regional databases – African Index Medicus and Latin American and Caribbean Health Sciences Literature (LILACS).
4. Dissertations and theses databases – the US-based Center for Research Libraries (CRL) and the Open Access Theses and Dissertations (OATD).
5. One gray literature database – the Virginia Henderson Global Nursing e-Repository.
6. A search engine – Google Scholar.
7. Study registers – ClinicalTrials.gov and the WHO International Clinical Trials Registry Platform (ICTRP) portal.

The reference list of all selected reports was screened for additional studies. We conducted a forward citation search to identify studies that cite selected reports. This search was done with the Publish or Perish software program (Harzing, 2007). This program uses a variety of data sources (Crossref, Google Scholar, OpenAlex, PubMed, Scopus, Semantic Scholar, and Web of Science, among others) to retrieve and analyze citations. Sources were searched from November 1, 2019, when the first cases of COVID-19 appeared (Roberts et al., 2021), to March 23, 2023.

An initial limited search of MEDLINE was undertaken to identify reports on the topic. The text words in the titles and abstracts of relevant reports and the index terms were used to develop a whole search strategy. The search strategy included combining all identified search terms – "missed nursing care," "missed care," "unfinished care," "omitted care," "undone care," "care not done," "unmet care," "error of omission," "errors of omission," and "nursing" – and adapting for each included database and information source. We used the general COVID-19 article filter limit (LitCGeneral) proposed by PubMed to retrieve citations on the 2019 novel coronavirus (National Library of Medicine, 2021).

A replicable search strategy for MEDLINE (via PubMed) can be found in Table S1.

Eligibility criteria

We defined the following eligibility criteria according to the JBI's approach:

- *Population*: Not applicable.
- *Concept*: We selected research studies that examined missed nursing care during the COVID-19 pandemic.
- *Context*: Quantitative, qualitative, and mixed-method studies carried out in all healthcare settings were included.

We included journal publications, preprint publications, dissertations and theses, conference abstracts, and ongoing studies. Studies in any language were included.

Following the search, all identified citations were collated and uploaded to the Rayyan QCRI web application program (Ouzzani et al., 2016), and duplicates were removed. Following a pilot test, titles and abstracts were screened by two independent reviewers for assessment against the eligibility criteria. Potentially relevant reports were retrieved in full. Two reviewers thoroughly assessed the full text of selected citations against the inclusion criteria. Reviewers were linguistically competent to assess all selected articles except for one included study published in Turkish (Özdeli Kara & Yaman, 2021). In this instance, the Google Translate tool was used (Jackson et al., 2019; Pieper & Puljak, 2021). Reasons for excluding reports in full text that do not meet the inclusion criteria were recorded and reported. Any reviewer disagreements were resolved by consensus or a third reviewer.

Data extraction

We developed a draft extraction form and piloted it on a subset of four studies. This form was refined to address the scoping review research question as required. Data were extracted from included studies by two independent reviewers. A third reviewer cross-checked the extracted data. Any disagreement on dissimilarities in data extraction was resolved by consensus. We extracted data on study characteristics and specific details about the study population, concept, healthcare context, study methods, and key findings relevant to the review question. For quantitative studies, we also recorded whether the authors explicitly recognized the use of the Transparent Reporting of Research on Unfinished Nursing Care (RANCARE) guideline for reporting the study (Blatter et al., 2021).

Quality appraisal

This scoping review aimed to map a body of literature comprehensively. Therefore, per JBI guidelines for the development of scoping

review (Peters et al., 2020, 2022), no critical appraisal or risk of bias assessment was performed on the included studies.

Synthesis of results

A narrative summary of each included study was displayed in tables. We synthesized the main findings of the studies according to the missed nursing care model (Kalisch, Landstrom, & Hinshaw, 2009). Therefore, we grouped the findings depending on whether they were related to reasons contributing to missed nursing care, missed nursing care found, and outcomes observed in either staff or patients.

RESULTS

A total of 25 studies met the eligibility criteria (Figure 1). The main details of all these studies are provided in Table 1. Table S2 describes these studies and their findings in more detail. Text S1 lists reports that could not be retrieved, reports that appeared to meet the eligibility criteria but were excluded, and the reasons for exclusion.

Description of included studies

Included studies were conducted between April 2020 and August 2021 in six European countries (n=13; Bartoníčková et al., 2022; Cengia

et al., 2022; Falk et al., 2022; Gurková, Bartoníčková, et al., 2021; Gurková, Mikšová, & Šáteková, 2021; Jørgensen et al., 2021; King et al., 2021; Moretti et al., 2021; Nymark et al., 2022; Obregón-Gutiérrez et al., 2022; Senek et al., 2022; Sugg et al., 2021; von Vogelsang et al., 2021), four Asian countries (n=8; Alfuqaha et al., 2023; Alsolami, 2021; Hosseini et al., 2022; Khrais et al., 2023; Labrague et al., 2022; Pourmovahed et al., 2022; Safdari et al., 2022, 2023), two North American countries (n=2; Edmonds et al., 2022; Qureshi et al., 2022), one South American country (n=1; Ferreira, 2022), and one transcontinental country (n=1; Özdeli̇ Kara & Yaman, 2021).

Twenty-three studies (92.0%) were conducted in acute care, one in community care (Senek et al., 2022), and one in both healthcare settings (King et al., 2021). Most were quantitative studies (n=18; 72.0%), followed by qualitative studies (n=5; 20.0%) and mixed-method studies (n=2; 8.0%). Participants were comprised of nursing care staff, including nurses, nursing technicians, nursing assistants, and nursing associates. A study simulated nurses' care delivery processes and their interaction with system design and organizational policies (Qureshi et al., 2022). Only one of the quantitative studies (Gurková, Mikšová, & Šáteková, 2021) reported adherence to the RANCARE guideline (Blatter et al., 2021).

Quantitative studies

Sixteen of the 18 quantitative studies were cross-sectional surveys. All these studies used missed nursing care measurement
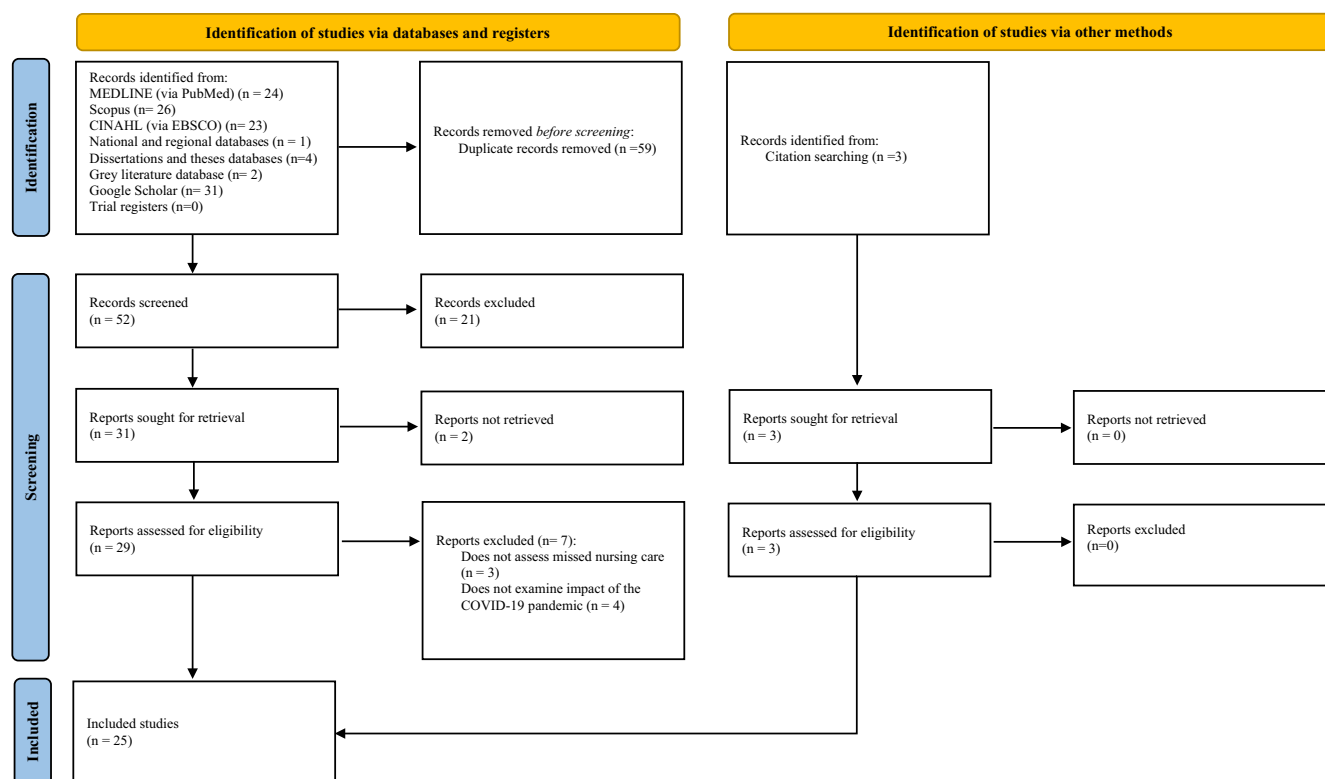

FIGURE 1 PRISMA flow diagram.

TABLE 1 Main characteristics of included studies.

Study details (authors, country, type of publication, setting, and study period)	Research aim	Study population	Research design and methods	Main results
Quantitative studies				
Alfuqaha et al. (2023) Jordan Journal article Acute care November–May 2020	To compare the perception of nurses about MNC for the patients before and during the COVID-19 pandemic	Nurses working in medical/surgical wards and intensive care units ($n = 260$)	Cross-sectional study Paper-based survey data collection Measurement instrument: MISSCARE Survey	32.6% of MNC activities during the COVID-19 pandemic and 22.8% before
Bartoníčková et al. (2022) Czech Republic Journal article Acute care January–March 2021	To examine the relationship between MNC and work environment in selected pediatric care units	Nurses worked at the bedside and were qualified to work as pediatric nurses ($n = 138$)	Cross-sectional study Paper-based survey data collection Measurement instrument: MISSCARE Survey-Ped version and the PES-NWI	The overall score and the score for each of the subscales of PES-NWI were not significantly associated with scores of MISSCARE
Cengia et al. (2022) Italy Journal article Acute care October 2020	To compare the occurrence and the reasons for unfinished care among COVID-19 and non-COVID-19 patients as perceived by nurses	Nurses caring for COVID-19 patients ($n = 90$) and caring for non-COVID-19 patients ($n = 200$)	Cross-sectional study Web-based survey data collection Measurement instrument: UNC survey	Reasons obtained a significantly higher average score among nurses caring for COVID-19 patients compared with those caring for non-COVID-19 patients (2.21 vs. 2.07)
Edmonds et al. (2022) The United States Conference abstract Acute care January–February 2021	To examine the rates of three critical nursing care processes and assess the relationship between reports of reduced nursing time at the bedside and frequency of unit staffing adequacy during the COVID-19 pandemic	A national convenience sample of RNs on labor and delivery units ($n = 836$)	Cross-sectional study Web-based survey data collection Measurement instrument: not reported	33% of RNs reported at least one of the three critical processes Time at the bedside and unit staffing were related to MNC
Falk et al. (2022) Sweden Journal article Acute care October 2019; November 2020, and May 2021	To describe and evaluate reported MNC during different phases (pre-pandemic, second wave, and third wave) of the COVID-19 pandemic	RNs at four critical care units (thoracic, neurosurgical, and two general critical care units), which are Level III critical care units that provide advanced respiratory support or monitoring and support for several organ systems Sample size: pre-pandemic ($n = 59$), second wave ($n = 38$), and third wave ($n = 37$)	Cross-sectional study Web-based survey data collection Measurement instrument: MISSCARE Survey	Less MNC was reported during the pandemic in the items: "ambulation three times a day or as ordered" ($p = .004$), "vital signs assessed as ordered" ($p = .007$), and "assist with toilet needs within 5 min of request" ($p = .036$). "Mouth care" was the only item with a significant difference that showed an increase in MCN between the data collections
Ferreira (2022) Brazil PhD thesis Acute care July–August 2021	To analyze the care omitted from the perspective of the nursing team in a care unit for patients with COVID-19 and their reasons	Nurses ($n = 28$) and nursing technicians ($n = 43$) who worked in the ward Intensive Care Unit for the care of patients with COVID-19	Cross-sectional study Web-based survey data collection Measurement instrument: MISSCARE survey	The most frequent MNC activity was "ambulation three times a day, or as ordered." The most frequent reasons for MNC were related to material resources, such as lack of equipment and medicines

(Continues)

TABLE 1 (Continued)

Study details (authors, country, type of publication, setting, and study period)	Research aim	Study population	Research design and methods	Main results
Gurková, Bartoníčková, et al. (2021) Czech Republic Journal article Acute care April–September 2020	To find the differences in reasons for unfinished nursing care according to the type of hospitals and wards	Nurses who provided care to adult patients and worked shifts (n = 371)	Cross-sectional study Paper-based survey data collection Measurement instrument: MISSCARE Survey (part B)	Nurses working in regional hospitals, compared to nurses working in university hospitals, reported higher scores on the reasons for MNC related to human and material resources
Gurková, Mikšová, and Šáteková (2021) Czech Republic Journal article Acute care April–September 2020	To examine the frequencies, type of MNC, and the associations between nurses' reported nursing work environment and MNC variables during the COVID-19 pandemic	Nurses (n = 371) who (a) worked in the adult surgical or internal medicine wards, (b) provided direct nursing care to adult patients, (c) worked in rotating shifts, and (d) worked full-time or part-time	Cross-sectional study Paper-based survey data collection Measurement instruments: MISSCARE survey (part A) and PES-NWI	63.8% of nurses reported at least one MNC activity (mean 2.89 activities) Nurses working in favorable conditions reported a lower prevalence of MNC activities than nurses working in a mixed or unfavorable nursing work environment
Hosseini et al. (2022) Iran Journal article Acute care Summer of 2020	To investigate MNC and its reasons during the COVID-19 pandemic	Nurses working different shifts in COVID-19 units at educational hospitals (n = 135)	Cross-sectional study Measurement instrument: MISSCARE survey	"Patient teaching about illness, tests, and diagnostic studies" was the most frequently reported MNC activity Insufficient staff was the main reported reason for MNC
Khrais et al. (2023) Jordan Journal article Acute care March–May 2021	To examine the effect of perceived organizational support, accountability, and nurses' characteristics on MNC under the impact of COVID-19	RNs (n = 536) from eight hospitals in different health sectors (three public, three private, and two teaching hospitals)	Cross-sectional study Web-based survey data collection Measurement instruments: MISSCARE survey, the "Accountability Index-Individual Referent," and "the perceived organizational support survey"	Nurses' accountability, perceived organizational support, and total years of experience were the highest predictors of MNC
Labrague et al. (2022) Philippines Journal article Acute care No information about the date	To identify factors that contributed to MNC and nurse-assessed quality of care during the COVID-19 pandemic	Licensed nurses working as frontline nurses with no <6 months of work experience in their present organization (n = 295)	Cross-sectional study Web-based survey data collection Measurement instruments: TU tool, the Safety Attitudes Questionnaire, and a single-item measure of nursing care quality	MNC had a significant negative correlation with staffing levels and safety culture
Nymark et al. (2022) Sweden Journal article Acute care Reference sample: October 2019 COVID-19 sample: May–June 2020	To evaluate MNC and patient safety during the outbreak and first wave of the COVID-19 pandemic in in-patient wards at the cardiology department	COVID-19 sample: RN (n = 20) and nurse assistant (n = 23) Reference sample: RN (n = 28) and nurse assistant (n = 31)	Cross-sectional study COVID-19 sample: paper-based data collection Reference sample: web-based data collection Measurement instrument: MISSCARE Survey	In comparison with the reference sample, respondents of the COVID-19 sample reported: More MNC for the items "ambulation three times per day or as ordered", "turning patient every two hours", "response to call light is initiated within five minutes", and "wound care" Less MNC for the items "setting up meals for patients who feed themselves" and "medications administered within 30min before or after the scheduled time" Lower patient safety perceived (76.7% vs. 94.7%)

TABLE 1 (Continued)

Study details (authors, country, type of publication, setting, and study period)	Research aim	Study population	Research design and methods	Main results
Obregón-Gutiérrez et al. (2022) Spain Journal article Acute care May 2020	To analyze the quality of care provided during the COVID-19 pandemic, identifying care that was prioritized and exploring personal, professional, emotional, or work environment factors and characteristics that may have influenced care	Nurses (n = 225) who had worked directly in the care of COVID-19 patients	Cross-sectional study Web-based survey data collection Measurement instruments: TU tool, visual analog scale to measure self-perceived assessment of the care provided, and the degree of autonomy (ranged from 1 to 10); and a list identifying feelings and barriers that nurses have had (degree of agreement ranged from 1 to 10)	MNC was more frequent among nurses who perceived lower quality of care compared to those who perceived higher quality of care in: skincare (75% vs. 48%); care planning (81% vs. 44%); talking and comforting (75% vs. 45%); changes to posture (75% vs. 42%); appropriate preparation of the patient (69% vs. 27%); techniques and treatments (50% vs. 27%); and pain control (56% vs. 24%)
Özdeli Kara and Yaman (2021) Turkey Journal article Acute care February–April 2021	To determine the amount and causes of health anxiety and MNC needs of nurses working during the pandemic	Active nurses (n = 200) during the pandemic	Cross-sectional study Web-based survey data collection Measurement instruments: MISSCARE survey and a single item to measure health anxiety with a range of scores between 1 and 10, and the higher the score, the greater the anxiety	No statistically significant correlation was found between MISSCARE sub-dimensions and health anxiety scores
Pourmovahed et al. (2022) Iran Journal article Acute care During the COVID-19 pandemic (2021)	To determine the effect of teamwork training on MNC among the nurses in a Neonatal Intensive Care Unit	Nurses (n = 20)	Before–after study. Intervention based on the team strategies and tools to enhance performance and patient safety Measurement instrument: MISSCARE survey	MNC had a significant and inverse relationship with the mean teamwork between nurses
Qureshi et al. (2022) Canada Journal article Acute care	To develop, validate, and test a DES modeling approach that can quantify nurse workload and care quality parameters under varying COVID-19 pandemic scenarios	Simulant nurse	Experimental simulation study A demonstration model was created using DES environment software	When nurses were providing care for COVID-19-positive patients, an increase in nurse workload, MNC, and care task waiting time were observed
Senek et al. (2022) United Kingdom Journal article Community care February–April 2021	To examine the association between types of MNC, work and caseload, and staffing levels	Community or district nurses (n = 533)	Cross-sectional study Web-based survey data collection Measurement instrument: MISSCARE survey	59.4% of nurses reported MNC on the last shift The proportion of permanent staff capacity, active caseload size, and the number of nurses on the team were statistically significant predictors of MNC

(Continues)

TABLE 1 (Continued)

Study details (authors, country, type of publication, setting, and study period)	Research aim	Study population	Research design and methods	Main results
von Vogelsang et al. (2021) Sweden Journal article Acute care Reference sample: October 2019 COVID-19 sample: May–June 2020	To evaluate frequencies, types, and reasons for MNC during the COVID-19 pandemic	Reference sample: RNs (n = 79) and NAs (n = 78) COVID-19 sample: RNs (n = 59) and NAs (n = 71)	Cross-sectional study Paper-based survey data collection Measurement instrument: MISSCARE survey	Compared to the reference sample, the study population reported more MSN in "response to the call light within 5 min" (15.4% vs. 6.0%). No significant differences were found between samples concerning reasons for MNC, satisfaction with teamwork, perceptions of staffing, quality of care, and patient safety
Qualitative studies				
Alsolami (2021) Saudi Arabia Journal article Acute care April 2020	To explore the clinical working experiences of nurses during the COVID-19 outbreak, identify the challenges they face, and determine how these challenges affect their nursing practice	RNs (n = 8) who provided care to patients who were suspected of having COVID-19 or positively diagnosed with the disease	Virtual face-to-face semi-structured interviews Thematic analysis approach	The following main themes were identified: psychological and physical distress, challenging nursing practice, and issues with management support
Jørgensen et al. (2021) Denmark Journal article Acute care June–August 2020	To explore RNs' experiences of how COVID-19 influenced nursing care in non-COVID-19 units	RNs (n = 11)	Semi-structured interviews for data generation Inductive qualitative content analysis	The following main themes were identified: the challenge of an increased workload for RNs remaining in non-COVID-19 units and the difficulty of navigating the contradictory needs for closeness to and distance from patients
Moretti et al. (2021) Italy Journal article Acute care October–November 2020	To investigate if nurses had perceived changes in the nursing care provided to COVID-19-positive patients between the first and the second waves of infections	Nurses (n = 21) who had at least 1 year of work experience and cared for patients with COVID-19	Phenomenological approach Semi-structured interviews	Because clinical and technical techniques were prioritized, the interaction between nurses and patients changed. This was caused by a variety of causes, including nurses' fear of becoming infected and a lack of adequate time to offer a holistic and integrated treatment to a rising number of patients in challenging conditions
Safdari et al. (2022) Iran Journal article Acute care December 2020–February 2021	To explore the causes of MNC during the COVID-19 pandemic from the perspective of nurses	Nurses with at least 1 year of experience as a clinical nurse and at least 2 weeks of experience in providing care for COVID-19 patients (n = 14)	Content analysis approach. Face-to-face in-depth semi-structured interviews	The causes of MNC were categorized into four groups: unfulfilled care, care at an improper time, incomplete care, and incorrect care
Safdari et al. (2023) Iran Journal article Acute care December 2020–February 2021	To explain the factors forming MNC during the COVID-19 pandemic from the perspective of nurses	Nurses with at least 2 years of nursing experience and at least 1 month of experience in providing care for COVID-19 patients (n = 14)	Content analysis approach. Face-to-face in-depth semi-structured interviews	The factors forming MNC were categorized into four main categories: care-related factors, disease-related factors, patient-related factors, and organization-related factors

TABLE 1 (Continued)

Study details (authors, country, type of publication, setting, and study period)	Research aim	Study population	Research design and methods	Main results
Mixed-methods studies				
King et al. (2021) England Journal article Acute care (35%) and community care (65%) July 2020	To explore how COVID-19 pandemic affected nursing associate work, training, and well-being experiences	Trainee nursing associates (n = 43) and newly qualified nursing associates (n = 21)	Cross-sectional study and qualitative research (embedded design) Web-based survey data collection Measurement instrument: ad hoc developed questionnaire with 26 open and closed questions across six domains Answers to open-ended questions were analyzed thematically	53.2% reported increasing workload, with 24.2% reporting duty extensions. 32.3% were redeployed, and 24.2% did not believe safety issues were addressed effectively when expressed Staffing, working overtime, MNC, and safety were higher among those working in the community Most participants (75.8%) reported they provided the same level of care
Sugg et al. (2021) United Kingdom Journal article Acute care August 2020	To identify the views and experiences of registered nursing staff on MNC and the barriers to fundamental care	RNs and non-registered nursing care staff who had actively engaged in nursing inpatients with the SARS-CoV-2 virus not invasively ventilated (n = 978)	Cross-sectional study and qualitative research (embedded design) Mixed-methods explanatory design guided by a pragmatic philosophy Web-based survey data collection Measurement instrument: ad hoc questionnaire based on the fundamentals of care model Thematic analysis of free-text responses by inductive and deductive approaches	A majority of respondents rated their ability to meet the needs of COVID-19 patients as worse than that of other patients Eight barriers were identified (in rank order): wearing PPE, the severity of patients' conditions, inability to take items in and out of isolation rooms without donning and doffing PPE, lack of time to spend with patients, lack of presence from specialized services, lack of knowledge about COVID-19, insufficient stock, and reluctance to spend time with patients for fear of catching COVID-19

Note: DES, Discrete Event Simulation; MNC, Missed Nursing Care; NA, Nursing Assistant; PES-NWI, Practice Environment Scale of the Nursing Work Index; PPE, personal protection equipment; RN, Registered Nurse; TU, Task Undone; UNC, Unfinished Nursing Care.

instruments. The MISSCARE survey tool, in its original version (Kalisch & Williams, 2009) and pediatric and community care versions (Bagnasco et al., 2018; Phelan et al., 2018), was used in 13 studies, the Task Undone tool (Ball et al., 2014; Lake et al., 2017) in 2 studies, and the Unfinished Nursing Care Survey (Bassi et al., 2020) in 1 study. Table 2 briefly describes the measurement instruments used in the identified studies.

All these cross-sectional studies determined the prevalence of missed nursing care and the possible determinants. Furthermore, 14 studies analyzed the influence of missed nursing care on nurses and organizational outcomes (Alfuqaha et al., 2023; Bartoníčková et al., 2022; Cengia et al., 2022; Edmonds et al., 2022; Falk et al., 2022; Ferreira, 2022; Gurková, Mikšová, & Šáteková, 2021; Hosseini et al., 2022; Khrais et al., 2023; Nymark et al., 2022; Obregón-Gutiérrez et al., 2022; Özdeli Kara & Yaman, 2021; Qureshi et al., 2022; von Vogelsang et al., 2021). Two studies compared

missed nursing care during different phases of the COVID-19 pandemic (Falk et al., 2022; Nymark et al., 2022), and one study compared the perception of nurses about missed nursing care before and during the COVID-19 pandemic (Alfuqaha et al., 2023). Two studies analyzed the association between missed nursing care and the work environment (Bartoníčková et al., 2022; Gurková, Mikšová, & Šáteková, 2021). Both studies measured the work environment with the Practice Environment Scale of the Nursing Work Index (Lake, 2002). Cengia et al. (2022) compared the frequency of missed nursing care between nurses caring for COVID-19 and non-COVID-19 patients. Moreover, one study (Labrague et al., 2022) analyzed the relationship between missed nursing care and safety culture, as measured by the Safety Attitudes Questionnaire (Sexton et al., 2006), and another study (Khrais et al., 2023) examined the effect of perceived organizational support and accountability on missed nursing care measured by the Perceived Organizational Support Survey (Rhoades

TABLE 2 Description of the measurement instruments of missed nursing care used in the included quantitative studies.

Measurement instrument (reference development study)	Brief description	Version used (identified studies using the measurement instrument)
MISSCARE Survey original version (Kalisch & Williams, 2009)	It consists of two sections: section A "Missed Nursing Care Activities" (22 items), and section B "Reasons for Missed Nursing Care Activities" (16 items, 3 factors: communication, material resources, and labor resources). The two sections of the tool can be used independently. From this initial development, the tool has been modified according to the adaptation processes, and most of the adapted versions have expanded the number of items	Arabic version (Alfuqaha et al., 2023; Khrais et al., 2023) Brazilian version (Ferreira, 2022) Czech version (Gurková, Bartoníčková, et al., 2021 and Gurková, Mikšová, & Šáteková, 2021) Persian version (Hosseini et al., 2022; Pourmovahed et al., 2022) Swedish version (Falk et al., 2022; Nymark et al., 2022 and von Vogelsang et al., 2021) Turkish version (Özdeli Kara & Yaman, 2021)
MISSCARE Survey Pediatric version (Bagnasco et al., 2018)	Developed to measure missed care in pediatric nursing care. It consists of two sections: section A "Missed Nursing Care Activities" (29 items), and section B "Reasons for Missed Nursing Care Activities" (17 items, 3 factors: communication, material resources, and labor resources)	Czech version (Bartoníčková et al., 2022)
MISSCARE Survey community care version (Phelan et al., 2018)	Developed to measure missed care in community nursing care. It consists of two sections: section A, "Missed Nursing Care Activities" (64 items, divided into 10 categories: home nursing care, care management, family support, older people, disadvantaged groups, health promotion, education, provision of other community services, and primary care teams and administration), and section B "Factors affecting missed care" (3 items)	UK English version (Senek et al., 2022)
Task Undone Tool – 12 and 13 items (Ball et al., 2014; Lake et al., 2017)	Nurses respond about whether 12 or 13 nursing care activities (depending on the version) were necessary but left undone because they lacked time to complete them on the most recent shift worked. It is featured in the form of a checklist with a dichotomous response (yes/no)	Spanish version (Obregón-Gutiérrez et al., 2022) US English version (Labrague et al., 2022)
Unfinished Nursing Care Survey (Bassi et al., 2020)	It is developed considering the MISSCARE survey and other tools available in the field of missed care. It consists of two parts: part A "Elements of unfinished care" (21 items), and part B "Reasons for unfinished care" (18 items, 5 factors: communication, priority setting, nurses' aide's supervision, material resources, human resources, and workflow predictability)	Italian version (Cengia et al., 2022)

& Eisenberger, 2002) and the Accountability Index-Individual Referent (Specht & Ramler, 1994).

Besides these cross-sectional studies, we identified two experimental studies, a simulation study (Qureshi et al., 2022), and a before–after study (Pourmovahed et al., 2022). Qureshi et al. (2022) used discrete event simulation to quantify the effects of varying COVID-19 policies on nurse workload and quality of care. Pourmovahed et al. (2022) analyzed the effect of teamwork training on missed nursing care in a neonatal intensive care unit during the COVID-19 pandemic.

Qualitative studies

We identified five qualitative studies conducted from the perspective of nurses and used semi-structured interview methods for data generation. They explored their experiences during the COVID-19 pandemic to understand its influence on nursing care (Jørgensen et al., 2021), the challenges nurses have faced (Alsolami, 2021), the changes nurses have had to introduce into their practice (Moretti et al., 2021), and the causes and factors forming missed nursing care during the COVID-19 pandemic (Safdari et al., 2022, 2023).

All studies explored determinants for missed nursing care, three studies further explored the type of missed nursing care (Alsolami, 2021; Jørgensen et al., 2021; Moretti et al., 2021), and two studies explored the perceived influence of missed nursing care on nurses and patients outcomes (Jørgensen et al., 2021; Moretti et al., 2021).

Mixed-method studies

Identified mixed-method studies combined data from a cross-sectional survey with qualitative research. In addition, these studies used an ad hoc questionnaire and conducted a thematic analysis of the free-text responses.

These studies analyzed the prevalence of missed nursing care and its possible determinants. However, the influence of missed nursing care on nursing staff outcomes was only examined in the study by King et al. (2021). This same study also explored how the COVID-19 pandemic affected two healthcare settings: acute care and community care.

DISCUSSION

This review identified 25 studies conducted in 14 countries (Brazil, Canada, Czech Republic, Denmark, Iran, Italy, Jordan, Philippines, Saudi Arabia, Spain, Sweden, Turkey, the United Kingdom, and the United States of America). These studies used different research designs, the most common being acute care cross-sectional designs based on the administration of the MISSCARE survey tool and its subsequent developments. Identified studies focused primarily on determining the influence of missed nursing care on nurses and organizational outcomes. Furthermore, few included studies compared findings across COVID-19 and non-COVID-19 patient care (Cengia et al., 2022; Jørgensen et al., 2021), care settings (acute care vs. community care; King et al., 2021), and care provided in pre-pandemic conditions (Alfuqaha et al., 2023; Falk et al., 2022; Nymark et al., 2022).

The review's results align with those of a previous narrative review of research on missed nursing care conducted before the COVID-19 pandemic (Vincelette et al., 2019). The findings of this scoping review also showed that most studies measured missed nursing care through nurses' self-reports. Self-reported data are vulnerable to biases, and missed nursing care is a complex phenomenon that goes beyond the nurses' perspective (Jones et al., 2015; Papastavrou & Suhonen, 2021; VanFosson et al., 2016). Similarly, we found that cross-sectional studies were the most frequent. Experimental studies were rarely used, and no longitudinal studies were identified. Longitudinal research is needed to robustly establish causal inferences about the determinants of missed nursing care and its impact on patient outcomes and nurses' jobs, especially during conditions such as those experienced during the COVID-19 pandemic (Papastavrou & Suhonen, 2021). We identified only one intervention study (Pourmovahed et al., 2022). Several interventions could have had the potential to reduce missed nursing care during the COVID-19 pandemic, such as improving teamwork and staffing (Kalisch et al., 2007), care reminders (Piscotty & Kalisch, 2014), or technological solutions as supportive factors to enhance nurses' environment and nursing care processes (Moazzami et al., 2020; Zheng et al., 2014). The greater complexity of conducting these studies compared to cross-sectional studies, exacerbated by the workload of the COVID-19 pandemic, has made them difficult to plan and conduct.

In contrast to the review by Vincelette et al. (2019), which identifies several studies conducted in the United States and Switzerland prior to the COVID-19 pandemic, we identified only one study conducted in the United States (Edmonds et al., 2022). This finding is surprising as it is in both countries that the three original terms used as conceptual labels to define the missed nursing care phenomenon first emerged: (1) tasks left undone, (2) missed nursing care, and (3) implicitly rationed care (Aiken et al., 2001; Kalisch, 2006; Schubert et al., 2007). Perhaps because of their greater experience with the phenomenon, they are planning or carrying out more complex studies whose protocols or results have not yet been published.

In May 2020, it was estimated that approximately half of COVID-19 deaths in France and Ireland happened in nursing homes, with even larger proportions reported in countries such as the United States and Canada (Giri et al., 2021). Furthermore, despite the dramatic impact of the COVID-19 pandemic on nursing homes worldwide, we found no studies carried out in this healthcare setting. This may be because research on missed nursing care is still recent and originated in acute care settings. Thus, acute care is the setting where missed nursing care is most frequently studied, whereas in other settings, such as community care or nursing home care, it is comparatively less studied (Andersson et al., 2021).

One study exclusively evaluated the figure of a new nursing role: the nursing associate (King et al., 2021). This role was introduced

in 2019 to the healthcare workforce in England to bridge the gap between unregistered healthcare assistants and registered nurses and provide an alternative route into nursing. Nursing associates undertake a 2-year training program before registering with the Nursing and Midwifery Council and are required to adhere to national proficiency standards (Nursing & Midwifery Council, 2019). Moreover, the estimate of missed nursing care may be biased in studies that only include nurses because the provision of nursing care is a team effort by several nursing providers; what a nurse may perceive as "missed" could have been provided by other nursing staff members. However, only 4 (Ferreira, 2022; Nymark et al., 2022; Sugg et al., 2021; von Vogelsang et al., 2021) of the 25 studies identified in this review included other nursing staff in addition to nurses.

Strengths and limitations of this review

The main strength of this scoping review is that it was conducted following a rigorous methodology and reported according to a recognized framework (Peters et al., 2020; Pollock et al., 2021). The bibliographic databases searched do not currently index controlled vocabulary terms related to the concept of missed nursing care. We consequently built a comprehensive search strategy with a wide range of free-text terms; however, we may not have identified all potential studies due to this lack of index terms and the tremendous terminological diversity of missed nursing care. Therefore, we conducted a forward citation search from the selected studies to increase the chance of finding studies not retrieved by the search.

Implications for future research on missed nursing care

This scoping review describes the nature and diversity of research on missed nursing care during the COVID-19 pandemic. Research in missed nursing care remains mainly descriptive without moving toward more analytical studies such as longitudinal and experimental studies. Longitudinal studies are needed to generate more robust evidence on missed nursing care determinants. Moreover, although specific interventions may positively influence the performance of a given nursing care activity, there is no firm evidence of an overall reduction in missed nursing care through these interventions (Schubert et al., 2021). Therefore, further intervention studies with a high-quality experimental design to prevent and reduce missed nursing care are needed.

Furthermore, most studies on missed nursing care, both in pre-and-post COVID-19 pandemic conditions, still focus on self-reported data from nursing staff. This affected the robustness of their results. One way to decrease this bias would be to accompany these data with objective workload measures, nursing-sensitive outcomes, or patient-reported outcome and experience measures.

The results of this scoping review show that while acute care has been the central healthcare setting for studies on missed nursing care during the COVID-19 pandemic, different healthcare settings, such as community care, have been scarcely studied, and others, such as nursing home care, have not been studied. Nursing care is one of the significant components of community-based services, so there is a need to substantially expand the focus of missed nursing care research into these care settings to increase the likelihood of achieving the intended health outcomes.

Review findings also show that using the RANCARE guideline (Blatter et al., 2021) for reporting missed nursing care in quantitative research could be more extensive. Adopting this guideline and other generic reporting guidelines is crucial to effectively communicate this research field's conceptualization, methodology, and study findings. Furthermore, its implementation could aid in making meaningful comparisons across studies, settings, and countries (Papastavrou & Suhonen, 2021). This reporting guideline is relatively new, and more efforts should be made to expand its use, particularly with the help of nursing journal editorial teams.

CONCLUSIONS

During the COVID-19 pandemic, nurses-based prevalence surveys were the most common type of missed nursing care research studies. More significant efforts are required to advance the development of high-quality longitudinal and intervention designs. Therefore, objective measures of workload, nursing-sensitive outcomes, and patient perspective must be included in future missed nursing care research. Moreover, the findings of the review suggest the need to expand the research focus on missed nursing care beyond acute care. This scoping review contributes to a comprehensive compilation of research on missed nursing care during the COVID-19 pandemic and could serve as a basis for identifying knowledge gaps, priorities for future research, and areas for additional specific systematic reviews.

CONFLICT OF INTEREST STATEMENT
No conflict of interest has been declared by the authors.

DATA AVAILABILITY STATEMENT
The authors confirm that the data supporting the findings of this study are available within the article and its Appendix S1.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.