

Missed nursing care in highly specialized hospitals: A Mexican case study

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Abstract

Objective: To assess the status of missed nursing care and the reasons for its occurrence in a highly specialised public hospital in Mexico.

Materials and methods: An observational cross-sectional analysis with data collected from January to June 2019 at the National Institute of Rehabilitation Luis Guillermo Ibarra Ibarra in Mexico City. We assessed missed care and its causes by conducting the MISSCARE survey among 116 nursing professionals selected from a **population** of 162 nurses. This work presents the estimated rates of missed care—overall and broken down into its four dimensions—as well as the reasons for its occurrence, namely limited labour resources, inadequate material resources and communication problems among work teams.

Results: The overall score for missed care was 16% (95% CI: 11.84%–20.15%), with the following rates by dimension: 19.48% for basic care, 14.66% for individual needs, 6.47% for patient education and discharge planning, and 4.31% for continuous patient assessment. The main reason cited for missed care was inadequate material resources, followed by limited labour resources and communication problems among work teams.

Conclusion: Basic care and individual needs interventions were the most frequently omitted services, primarily because of inadequate material resources, limited labour resources and communication problems among work teams.

An increase in the frequency of missed care can be expected in light of the high demand for health services, particularly as regards labour and material resources, imposed by the SARS-CoV-2 pandemic.

KEYWORDS

highly specialised facilities, Mexico, misscare, nursing

Highlights

- We estimated 16% prevalence of missed nursing care, less than that reported for general hospitals in the Mexican public sector
- The dimensions of patient education and discharge planning as well as continuous patient assessment yielded the lowest rates of missed care
- Is needed to ensure optimal working conditions and safe work environments
- Our results serve as a pre-pandemic reference for comparisons and for assessing the effects of the COVID-19 pandemic

1 | INTRODUCTION

Missed nursing care is a health-care issue with important repercussions for the quality of health services.¹⁻⁴ It refers to “any aspect of care required by a user of health services, that is partially or totally omitted or delayed”⁵ as a result of organizational issues, communication problems among work teams, **inadequate skill mix or resources** as well as supply restrictions in the provision of services to the users of health facilities.⁶ It has been recognized that avoiding missed care is key to providing effective health services.^{3,7-10} Notwithstanding its importance, however, missed nursing care has been studied primarily at hospitals in high-income countries,¹¹⁻¹³ and only to a lesser extent in low- and middle-income countries such as Mexico.¹⁴⁻¹⁷ Despite the need for further research in these contexts, the results obtained thus far are consistent with those published worldwide: nurses grant higher priority to continuous patient assessment than to basic care.

Our study presents original evidence concerning the status of missed nursing care at the National Institute of Rehabilitation Luis Guillermo Ibarra Ibarra (*INRLGII*, by its initials in Spanish) in Mexico City, one of the most important highly specialised public hospitals, in Mexico and in Latin America. The *INRLGII* belongs to the network of National Health Institutes in Mexico, collaborates with the World Health Organisation (WHO), and is internationally recognized for its quality of care, contributions to the training of specialised human resources and scientific research in the field of rehabilitation. In 2019, the *INRLGII* provided 231,537 consultations and physical therapy to 536,239 patients, in addition to performing 8311 highly specialised surgeries. We provide estimates of the overall magnitude and specific dimensions of missed nursing care at the *INRLGII*, as well as for the reasons for its occurrence.

2 | METHODS

We carried out an observational cross-sectional analysis with data collected, from January to June 2019, through face-to-face interviews with nurses working at the *INRLGII*. At the time of their interviews, study participants, responsible for providing direct patient care, were assigned to non-critical inpatient services; all enjoyed at least 6 months

of work experience at the hospital. Nursing staff serving as coordinators, supervisors or heads of nursing services were excluded from the study. Also excluded were recently hired nurses, those working in intensive care units, operating rooms and emergency rooms or engaged in outpatient care including surgery services, and those attending to patients with short stays. We interviewed 116 nurses with different training backgrounds, selected from a population of 162 nurses: 36 from the morning, 33 from the evening and 47 from the night shift. Participants were selected through probabilistic random sampling for finite populations, using 95% confidence interval, a 5% margin of error and 40% variability.

In 2019, the first author of this article requested assistance from the INR hospital authorities, including the nursing director, in order to explain to the nursing staff the background, purpose and data collection methods of our study as well as relevant ethical issues. After receiving the required authorisation and assistance, we piloted the MISSCARE data collection instrument. It was administered in a paper-based format by trained personnel with ample experience in handling the MISSCARE questionnaire and gathering sample characteristics, with the intention of standardizing the collection of the data. Data collection was continually supervised according to specific fieldwork protocols. To minimise data-entry errors, a member of the fieldwork team transcribed the data collected onto an Excel sheet. The quality of the data was guaranteed through auditable algorithms designed to systematise the identification of possible errors in the recorded data. To protect the confidentiality of participants at all times, the record of each interviewee was classified by means of a unique participant identification code excluding personal identifiers. Only the principal investigator was allowed access to the collected data.

Participation was voluntary, with all respondents providing prior informed consent. Our research protocol was approved by the Research and Ethics Committees of the National School of Nursing and Obstetrics (*ENEO*, by its initials in Spanish) of the National Autonomous University of Mexico (*UNAM*, by its initials in Spanish; CI-125/123/18-113), and by the Sub-directorate of Nursing at the *INRLGII* (01/2019). This study is part of a larger research project, the details and general results of which has been published elsewhere.¹⁸

We assessed missed nursing care and the reasons for its occurrence using the MISSCARE survey¹⁹ previously tested for validity and reliability,¹⁹ linguistically adapted for the Mexican population and evaluated by experts for clarity and relevance.¹⁵ **The MISSCARE instrument, designed for nursing personnel, composed of 64 items divided into three sections:**

- (1) Demographic and work-related characteristics (23 items): age (<30, 30–39, 40–49 or ≥50 years); sex (female or male); highest educational level (technical/post-technical or bachelor's/graduate degree); years of work experience; professional category (auxiliary, general or specialised); working hours per week (≤40 or >40); number of incoming and outgoing patients per shift; workload (number of assigned patients); shift (morning, evening, night or other); and job satisfaction.
- (2) Four dimensions of missed nursing care were considered: individual needs, patient education and discharge planning, basic care and continuous patient assessment. This section consisted of 24 Likert-type items with six response options each. The nurses were asked how often they missed nursing care by dimension and were required to select one of the following answers: always = 5, frequently = 4, occasionally = 3, rarely = 2, never = 1 and not applicable = 0 (care not performed during the night shift such as feeding and ambulation). We recategorised the responses in binary form: 1 = always or frequently and 0 = otherwise, and calculated unweighted additive scores of missed care, expressed as percentages overall and by dimension. Higher values denoted higher levels of missed nursing care.
- (3) Reasons for missed care: limited labour resources, inadequate material resources and communication problems among work teams. This section consisted of 17 Likert-type questions with four response options each: significant = 4, moderate = 3, minor = 2 and insignificant = 1.

For all analyses we used the Stata v15.1MP statistical package.²⁰ First, we described the main sociodemographic and work-related characteristics of our analytical sample (expressed as means and percentages with 95% CI). Next,

we assessed missed nursing care, overall and by dimension (expressed as average rates with 95% CI), as well as the reasons for its occurrence (limited labour resources, inadequate material resources and communication problems among work teams).

3 | RESULTS

Among the nursing professionals interviewed, 82.7% reported being between 30 and 49 years old, and 87.1% were women. Overall, they had an average of 16.9 years of work experience; 61.0% had a bachelor's or graduate degree and 63.8% provided general nursing services while 36.2% provided specialised nursing services. As many as 94.8% reported working up to 40 hours a week and attending to an average of five patients per shift; 31.0% worked the morning, 28.5% the afternoon and 40.5% the night shift. Finally, 75.9% reported being satisfied with their jobs (Table 1).

TABLE 1 Sociodemographic and work-related profile of the analysed nursing professionals

<i>n</i> = 116	Percentage or average [95% CI]
Age (years), <i>average</i>	40.79 [39.50–42.08]
<30	6.03 [1.64–10.43]
30–39	33.62 [24.89–42.35]
40–49	49.14 [39.90–58.37]
≥50	11.21 [5.38–17.03]
Sex	
Female	87.07 [80.87–93.27]
Male	12.93 [6.73–19.13]
Highest educational level	
Technical/post-technical	18.97 [11.72–26.21]
Bachelor's degree	49.14 [39.90–58.37]
Graduate degree	31.90 [23.29–40.51]
Work experience (years), <i>average</i>	16.86 [15.34–18.38]
Professional category	
General	63.79 [54.92–72.67]
Specialized	36.21 [27.33–45.08]
Working hours (hours/week)	
≤40	94.83 [90.74–98.92]
>40	5.17 [1.08–9.26]
Incoming patients per shift, <i>average</i>	1.86 [1.60–2.13]
Outgoing patients per shift, <i>average</i>	1.27 [1.04–1.50]
Workload: Assigned patients	4.83 [4.55–5.11]
Work shift	
Morning	31.03 [22.49–39.58]
Afternoon	28.45 [20.11–36.78]
Night	40.52 [31.45–49.59]
Job satisfaction	75.86 [67.96–83.77]

The average overall score for missed nursing care reached 16% (95% CI: 11.84%–20.15%). By dimension, the scores were 19.48% for basic care, 14.66% for individual needs, 6.47% for patient education and discharge planning and 4.31% for continuous patient assessment (Table 2). Within each dimension, individual needs showed the highest rates of missed care in administering medications within 30 min before/after the scheduled time (14.6%) and attending interdisciplinary care-evaluation visits (12.9%); discharge planning and patient education yielded the highest rates in preparing discharge plans (11.6%); basic care showed the highest rates in feeding (34.4%), walking three times a day (19.8%), bathing (17.2%) and mouth care (12.9%); and finally, continuous patient assessment registered the most frequent omissions in controlling fluids (3.4%; see Table A1).

Surveyed nurses reported that inadequate material resources constituted the most frequent cause of missed care (mean = 80.65, 95% CI: 76.64–84.66%). They also stated that equipment was unavailable or did not work properly when needed. Finally, they cited limited labour resources and related issues such as a dearth of support personnel, unexpected increases in the number of patients and communication problems among work teams. These included failure of communication with medical staff and inadequate handover of the previous shift (see Table 3 & Table A2).

4 | DISCUSSION

Overall, we estimated 16% prevalence of missed nursing care, less than that reported for general hospitals in the Mexican public sector,^{14–16} but similar to those reported for other highly specialized hospitals in Mexico.¹⁸ The dimensions of patient education and discharge planning as well as continuous patient assessment yielded the lowest rates of missed care, whereas basic care and individual needs recorded the highest. This may relate to the absence of family caregivers, who in many countries play a fundamental role in patient care, compensating for the deficit of professional nurses.²¹ Nurses often delegate basic care tasks to caregivers^{8,22} in order to prioritise other functions such as continuous patient assessment.²³ Mexico has not regulated the activities in which caregivers accompanying patients in health institutions can intervene. It is important to establish guidelines for the promotion of patient self-care as well as a nurse-patient-caregiver collaboration.

It has been recognized that inadequate patient education and discharge planning undermines the safety of patients and the quality of the services provided to them.^{6,19,24} Compared to the findings of a previous study in the US, where one in three nurses reported omitting patient education and hospital discharge planning,²⁵ our results

TABLE 2 Overall indices of missed nursing care, by care dimension

<i>n</i> = 116	Average [95% CI]
Indices, %	
Overall	16.00 [11.84–20.15]
Individual needs	14.66 [9.80–19.51]
Patient education and discharge planning	6.47 [3.14–9.79]
Basic care	19.48 [14.34–24.63]
Continuous patient assessment	4.31 [0.56–8.06]

TABLE 3 Indices of the reasons for missed nursing care

<i>n</i> = 116	Average [95% CI]
Factors, %	
Limited labour resources	69.54 [66.04–73.04]
Inadequate material resources	80.65 [76.64–84.66]
Communication problems among work teams	59.82 [55.60–64.04]

revealed lower levels of missed care in this area. The difference may derive from the fact that the US study sample included nursing professionals assigned to intensive-care and acute medical-surgical services, whereas our study sample included only the latter and considered the assistance of family caregivers in a number of nursing activities.

Regarding the dimension of care pertaining to individual needs, the most frequently omitted tasks reported by our sample were administering medications within 30 minutes prior or subsequent to the scheduled time and attending interdisciplinary care assessment visits. Errors of omission or delay in medication are frequent²⁶ and can cause serious and even fatal harm, depending on the drugs and the clinical condition of the patient.²⁷ Conversely, effective teamwork among health professionals can contribute to improving the education and, consequently, deepening the personal commitment, of patients, entailing, among other benefits, their engagement in decision-making and self-care.²⁸ The influence of the preceding practices on positive patient outcomes has been documented.²⁹ Considering that omissions in these dimensions significantly undermine the quality of care and patient safety, special importance must be attached to establishing supervision and control measures for both processes.^{9,30}

The reason cited most frequently by participants to account for missed care was inadequate material resources, more specifically, equipment that proved unavailable or nonfunctional when needed. This is consistent with the reports of nurses from other countries.^{1,32} Working with limited resources increases the number of adverse events that directly involve the nursing staff³¹; it is therefore critical to establish controls in the provision of materials and ensure strict compliance with preventive and corrective maintenance programs for biomedical equipment.

Limited labour resources were also reported by participants as a fundamental reason for omitted care.^{6,32-34} This concerned not only insufficient personnel, but also unexpected increases in the volume of patients and service workload.^{5,33} It has been recognized that reduced human resources are positively associated with the risk of negative patient outcomes.^{3,33,35-38} Furthermore, it has been observed that staffing problems constitute a major barrier to fulfilling responsibilities in the areas of individual and basic care.

Our study was subject to several limitations. Salient among these was the fact that data collection was carried out in only one highly specialised hospital and cannot be generalised to other contexts. **Moreover, our data collection instrument measures the perception of nursing staff; therefore, measurement errors due to underreporting bias, particularly as regards the missed-care inventory, cannot be ruled out.**

Our findings revealed that patient education and discharge planning together with continuous patient assessment—both independent care interventions that are indispensable during patient hospital stays—were the least omitted dimensions of care. The reasons most frequently cited by nurses to account for these omissions were inadequate material resources, followed by limited labour resources and recurring communication problems among work teams.

These findings acquire special relevance in the current context of the SARS-CoV-2 pandemic. COVID-19 has imposed an unusually large and unrelenting demand for hospital services, causing the displacement of labour, material, and infrastructure resources, and forcing hospitals to reorganise their management of available resources. This scenario has been particularly evident in low- and middle-income countries marked by scarce health-care resources.^{24,32,33,39} However, studies in high-income countries have reported similar indices of missed care before and during the pandemic.^{40,41} This suggests the need to conduct comparative studies in low- and middle-income countries, given that working conditions in these contexts have clearly worsened during the pandemic, abetting the intention of nurses to leave their jobs.⁴² Higher turnover rates and heavier workloads caused by the absence of caregivers during patients' hospital stays could be generating additional negative changes in nursing care.

The present study highlights the need to ensure optimal working conditions and safe work environments, allowing health-care professionals to fully carry out their functions. Our results serve as a pre-pandemic reference for comparisons and for assessing the effects of the COVID-19 pandemic not only on patients, but also on health-care providers and institutions.

AUTHOR CONTRIBUTIONS

SHC and ESM conceived the idea for the paper. ESM designed the study and analysed the data. SHC and ESM wrote the first draft of the manuscript. LABCh, GN and RAZG provided critical input on multiple iterations. All authors were involved in revising the paper and approved the final manuscript. NG is the guarantor of this work.

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CONFLICT OF INTEREST

The authors declare that they have no competing interests.

DATA AVAILABILITY STATEMENT

Data used in this study are publicly available and can be obtained from the corresponding author (eservan@insp.mx).

ETHICS STATEMENT

Our dataset included 117 nurses working at the Institute of Rehabilitation Luis Guillermo Ibarra (INRLGII, by its initials in Spanish) interviewed from January to June 2019, through face-to-face interviews with nurses. Participation was voluntary, with all respondents providing prior informed consent. Our research protocol was approved by the Research and Ethics Committees of the National School of Nursing and Obstetrics (ENEO, by its initials in Spanish) of the National Autonomous University of Mexico (UNAM, by its initials in Spanish; CI-125/123/18-113), and by the Sub-directorate of Nursing at the INRLGII (01/2019).

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SUPPORTING INFORMATION

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

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