Missed Nursing Care in a Sample of High-Dependency Italian Nursing Home Residents: Description of Nursing Care in Action

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Objective: The aim of the study was to describe omitted or delayed nursing care (i.e., missed nursing care [MNC]) in a sample of Italian nursing homes (NHs).

Methods: Nurses from 50 NHs located in Northern Italy selected the 20 most dependent residents in their care and reported instances of MNC for three to five consecutive shifts. They described the type of MNC, its cause(s), management, recurrence, and severity of possible consequences for the resident. Information on the residents and the NH was also collected. The instances of MNC were classified as potentially avoidable/preventable or not.

Results: Overall, 266 (85.3%) of 312 nurses participated and 1000 residents were observed during 381 shifts (164 mornings, 164 afternoons, and 53 nights); 101 (38%) nurses reported 223 instances of MNC among 175 residents (17.5%). Ninety-seven omissions and 109 delays occurred during the day shift (56 omissions were delegated to the next shift). The most frequent MNC was drug administration (n = 71, 34.5%). In 24 (44.4%) of 54 instances of delayed drug administration, the delay was less than 30 minutes. Nurses rated approximately 20% of MNC (n = 41) as highly severe because of the discomfort caused to the resident, the clinical impact, or the repetitiveness of the situation. Nurses ascribed almost half of MNC (n = 100, 48.5%) to inadequate staffing, and they categorized 26 (11.6%) instances of MNC as unavoidable.

Conclusions: The number of nurse-reported instances of MNC we reported was much lower than that previously collected with available instruments. Most MNC did not impact the comfort and safety of residents. A certain proportion of MNC was unavoidable.

Key Words: missed care, nursing homes, patient care, patient safety

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Ensuring patient safety is a global priority, and understanding how the care provided influences clinical outcomes is pivotal to improving quality of care. A growing body of evidence shows that nurses are unable to complete all planned care and stress about the negative effects this may have on patient outcomes.[1] Missed nursing care (MNC) has been proposed as a potential measure of nursing performance and quality of care,[2] and recent studies have shown that MNC acts as a mediator in the association between patient safety and nurse staffing,[3,4] suggesting that MNC may explain why more nurses on duty lead to better clinical outcomes.[5,6]

The current knowledge on MNC has some limits as it is based on findings from self-reported surveys, generally in acute care settings, on care that was regularly omitted or delayed from an inventory of nursing activities.[7] The differences in the tools used (in response options, items, and recall period) limited the possibility to make comparisons across studies, so that some authors have cast doubt on the accuracy of these estimates, noting a variation in the pattern of reported care according to the tool used.[7,8] For example, emotional and psychological support are frequently counted as missed when the Basel Extent of Rationing of Nursing Care instrument is used, whereas mobilization is one of the most reported aspects in MISSCARE survey.[7] Furthermore, the previously mentioned tools do not link MNC with individual patient's needs or situations, thus reducing the possibility to understand the relevance of MNC for that patient.[9] Because not all MNC affects patients equally,[1] it is important to discriminate between elements of nursing care that are deferrable from those that are not.[10] For example, delaying the periodic monitoring of vital signs in a chronic patient to the next shift might not have a clinical impact, whereas the same delay in an acute patient may lead to an important deterioration. Nursing care is not a standardized process[11]; thus, MNC should not be a cross-sectional measure; it should be evaluated on an individual-patient basis.

Although workload and organizational factors seem to be important predictors of MNC,[8,12] it is reasonable to assume that a certain amount of MNC occurs for unpredictable reasons. In a pilot study of 10 Italian nursing homes (NHs), almost one-third of the reported MNC was due to an unexpected rise in the volume of duties,[13] confirming that not all causes of MNC are avoidable. Identifying which and how many MNC are potentially preventable is pivotal to create proactive strategies and preserve patient safety.

To date, almost all the research on MNC has been conducted in hospital environments, only few studies in NHs,[14–18] and none of them in Italy. Nursing home residents have complex care needs, and working conditions in these environments can be suboptimal, especially for staffing.[19,20] Thus, it is imperative to fill this knowledge gap and measure the extent and potential impact of MNC on NH residents.

The aims of this study were to gain insight into MNC, defined as omitted or delayed care, among observed patients by describing MNC, the reasons for and the perceived severity of the MNC, and to show nurses' direct (and not mediated by a list of tasks) perception of MNC.

METHODS

A cross-sectional descriptive study was undertaken between April and October 2018 in the Piedmont and Valle d'Aosta Regions (Northern Italy). With some variation, the organizational

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model and services provided by the NHs of these two regions are comparable. In the Piedmont Region, publicly and privately funded NHs (20–250 beds per NH) are distributed throughout eight provinces. Nursing home staff is generally managed by a social cooperative or hired by the NH as freelancers or independent contractors. Most NHs in the Valle d'Aosta Region are smaller (<80 beds), publicly funded, and operated by associations of local municipalities; nurses are not privately employed by the NH but by the National Health System. In both regions, with few exceptions, there are no NH physicians in charge, and medical care is provided by general practitioners. The minimum standard of nursing working hours is established according to NH residents' clinical severity, as judged by a multiprofessional geriatric team who classifies patients into high, moderate, and low complexity.

Sample and Data Collection

Of the 400 NHs in the Piedmont Region, a convenience sample of 96, stratified by province and capacity (<50, 50–100, and >100 beds) was invited, and 43 (44.8%) agreed to participate. Of the 38 NHs in the Valle d'Aosta Region, nine were invited and seven agreed to join the project. After obtaining consent from the NH management, the head nurse was given responsibility for the research. All nurses with more than 1 month of working experience were invited to participate (n = 312) and 266 (85.3%) accepted.

As the NHs have different characteristics and host residents of different level of complexity, we asked to the nurses of each NH to select the 20 most dependent residents in their care, according to their clinical judgment (for a total of 1000 patients). After enrollment, NH residents' level of dependence was assessed by nurses with the use of Norton scale,[21] which assesses physical and mental condition, activity, mobility, and incontinence on a score of 5 to 20 (<11 low, 12–15 moderate, >16 high). Enrolled residents were observed for three consecutive days in Piedmont and for five consecutive days in Valle d'Aosta.

Missed nursing care was defined as any aspect of required patient care that was omitted (either in part or in whole) or delayed.[22] In accordance with the conceptual model proposed by Kalisch et al,[22] "delayed care" was defined as any nursing care considered necessary for the patient, which had been postponed. There are no rules in the NHs regarding when to consider an activity delayed; thus, it is a subjective judgment. The nurse, knowing the patient's needs and the clinical situation, reported what was necessary and missed/delayed for that patient. If care was omitted or delayed because of clinical judgment (e.g., patients' conditions) or to tailor nursing care (care delayed because the patient was out for a walk or sleeping), it was not considered MNC. At the end of each shift, participating nurses reported MNC in the 1000 NH residents: the type, the cause(s), management (delegation or time of delay/resolution), recurrence (in the previous week), and severity of possible consequences for the NH resident (scale of 0–10, with 10 being the most severe).

Causes of MNC were classified independently by three investigators (I.B., S.C., P.D.G.), using a thematic analysis based on the following analytic steps[23]: data familiarization (causes of MNC were read several times); assignment of a code (based on the meaning pattern); and collating codes into categories. Those categories included the following: inadequate staffing (workload, lack of personnel, lack of time), events that impacted the work routine: clinical events (deaths, falls, sudden patients' worsening), not clinical events (physicians unavailability, patients' refusal of care, frictions with caregivers' residents), nurse's work organization (administrative tasks or delays of tasks because the resident engaged in other activities, unavailability of the drug or device), communication problems (failure in communication between healthcare providers or among settings), nurse's error, and other causes. Any disagreement was discussed until a consensus was reached. Causes were classified as potentially avoidable/preventable (failure in communication among healthcare providers or unplanned general practitioner visit) and unavoidable (sudden patient's worsening or device malfunction). The severity of the MNC was categorized as low if nurses gave a score of 3 or less, moderate for scores 3 to 5, and high for score 7 or higher. Missed nursing care was defined as recurring if it had already occurred at least once in the previous week, not necessarily on the same NH resident.

Nurses were asked to give the overall number of NH residents for whom they were responsible during their shift and the mean number of high-dependency NH residents they usually cared for during the day/night shift. Information on NH residents' demographic characteristics, comorbidities, artificial feeding, Functional Assessment Staging Tool of 6 to 7 if severe dementia,[24] need of parenteral hydration, physical or other rehabilitation, oxygen therapy, pressure ulcers, dysphagia, indwelling or central venous catheter, and number of drugs prescribed was also collected. Finally, data on NH funding (private/public), size, and occupancy rates in 2017 were recorded. Missed nursing care that occurred during the night shift (from 9:00 P.M. to 7:00 A.M.) were described separately, as nurses generally perform different activities during the night shift, mostly supporting ancillary staff in basic care.

We provided an individual training to each head nurse who had been appointed as project manager, and we made available written instructions for nurses with the operational definitions and information on how to fill in the data collection form.

Data were treated confidentially. The Bioethic Committee of the University of the Study of Turin approved the study (Prot. 291041 of 13/7/2018).

TABLE 1. Characteristics of NH Residents With MNC (N = 175)

	n (%)
Female	125 (71.4)
Age, mean (SD)	83.1 (11)
Length of stay, y	
<1	58 (33.1)
1–3	54 (30.9)
>3	63 (36.0)
No. patient with advanced dementia	71 (40.6)
Dependency level (Norton scale)	
High	110 (62.9)
Moderate	37 (21.1)
Low	28 (16.0)
Characteristics and treatments	
Rehabilitation (any)	65 (37.1)
Dysphagia	44 (25.1)
Pressure ulcers	42 (24.0)
Bed-ridden ≥22 h/d	26 (14.9)
Oxygen therapy	21 (12.0)
Devices	
Indwelling bladder catheter	35 (20.0)
Tube feeding	14 (8.0)
Central venous catheter	11 (6.3)
Tracheostomy	3 (1.7)
Median number of drugs (IQR)	7 (5–10)

Abbreviation: IQR, interquartile range.

TABLE 2. Characteristics of MNC

	n (%)
Time frame	
Day	206 (92.4)
Morning	*128 (62.1)*
Afternoon	*78 (37.9)*
Night	17 (7.6)
MNC per NH*	
0	8 (16.0)
1–2	14 (28.0)
3–5	15 (30.0)
≥6	13 (26.0)
Recurrent MNC°	75 (36.4)
Residents with >1 MNC*	32 (18.3)
2	20 (11.4)
>3	12 (6.9)
Severity*	
≤3	78 (37.9)
4–6	80 (38.8)
≥7	41 (19.9)
Missing	7 (3.4)

*NH excluding MNC that occurred at night.

Data Analysis

Data were examined using Statistical Package for Social Sciences (SPSS) for Windows 25.0 (SPSS Inc, Chicago, IL). Descriptive statistics were used to describe the characteristics of MNC; quantitative variables were expressed as average and the standard deviation or median and interquartile range, whereas categorical variables were summarized as sums and percentages.

RESULTS

Of the 50 participating NHs (33 privately and 17 publicly funded), 21 had less than 50, 17 had 50 to 100, and 12 had more than 100 beds, for a total of 3784 NH residents. One-third ensured nighttime nursing care; in the others, nurses were available on call; in 16, there was also a physician in charge for 3 to 38 (median = 17.5) hours per week.

The 266 participating nurses observed 1000 NH residents during 381 working shifts (164 mornings, 164 afternoons, and 53 nights); 101 nurses (38%) reported 223 MNC among 175 NH residents (17.5%). Nursing home residents with MNC were mostly female (71.4%), with a mean (SD) age of 83.1 (11) years (Table 1). In the Piedmont Region (3-day data collection), there were up to 24 MNC per NH (median [range] = 3 [0–24]), whereas in the Valle d'Aosta Region (5-day data collection), there were up to 17 (median [range] = 1 [0–17]). In eight NHs (seven in the Piedmont Region), no MNC was reported.

Characteristics and Severity of MNC

Two hundred six MNC (92.4%) occurred during the day shift, including 109 delays and 97 omissions, 56 of which were delegated to the next shift. Every nurse reported a median of two MNC (up to 10) (Table 2).

The most frequent MNC (n = 71, 34.5%) was related to drug administration: oral therapy (n = 34, 47.9%), artificial nutrition/hydration (started late or stopped before the end; n = 12, 16.9%), or topical medications (n = 11, 15.5%) (Table 3). The omissions included missed administration of oral medications (e.g., diuretics, corticosteroids, antiacids), eye drops, aerosol therapy, or subcutaneous hydration; 10 of the 17 missed drugs were administered in the next shift. There were 54 delays in drug administration, 24 (44.4%) of which were less than 30 minutes. With the exception of two delays in the administration of insulin and of one pro re nata (PRN) analgesic drug (considered severe), in the remaining cases, the drugs delayed were antipsychotics, antiparkinsonians, or benzodiazepines; in one case, the start of the enteral nutrition was delayed; the consequences of only one of the previously mentioned was considered severe for the resident.

Of 51 instances of MNC related to resident monitoring, 14 (27.5%) concerned blood glucose (e.g., preprandial monitoring), 13 (25.5%) the lack of repeated or close monitoring in critical patients (e.g., oxygen saturation or pain assessment), 14 the routine monitoring of blood pressure, seven concerned planned wound assessments, and three the check of intravenous therapy, deambulation, and bowel functioning.

Approximately 20% of MNC (n = 41) (Table 3) were categorized as severe because of discomfort caused to the resident (e.g., omitted administration of a PRN analgesic or omitted assessment of a foot wound before walking; delayed accompanying to the toilet during dinner time), clinical impact (e.g., the oxygen tank replaced 1 hour after or the missed assessment of a resident

TABLE 3. Frequency and Severity of MNC During the Day Shift

	Omission, n (%)	Severe, n	Delays, n (%)	Severe, n	Total, n (%)	Severe, n (%)
MNC						
Drug administration	17 (23.9)	8	54 (76.1)	9	71 (34.5)	17 (41.5)
Residents' monitoring	29 (56.9)	5	22 (43.1)	4	51 (24.8)	9 (22.0)
Wound dressing change/assessment	22 (56.4)	2	17 (43.6)	2	39 (18.9)	4 (9.7)
Device management*	10 (71.4)	2	4 (28.6)	—	14 (6.8)	2 (4.9)
Management of basic needs	2 (20.0)	—	8 (80.0)	3	10 (4.9)	3 (7.3)
Emotional support	2 (50.0)	—	2 (50.0)	—	4 (1.9)	—
Nursing documentation	3 (100)	2	—	—	3 (1.4)	2 (4.9)
Other†	12 (12.4)	4	2 (1.8)	—	14 (6.8)	4 (9.7)
Total	97 (100)	23 (23.7)	109 (100)	18 (16.5)	206 (100)	41 (19.9)

*Bladder catheter, tube feeding, central venous catheter, or tracheostomy.

†Enema execution or rectal probe insertion (n = 7), lab tests (n = 3), compression stockings or antipressure ulcer mattress positioning, suture removal, other urgency.

just discharged from hospital), or the repetitiveness of the situation (e.g., artificial nutrition was stopped before the end four times in two residents because of the absence of a nurse in the night shift; 1-hour delay in feeding a bed-ridden resident). All the previously mentioned episodes had already occurred the previous week. In eight instances (related to three residents), the omissions led to shortcomings (e.g., urinary retention was not assessed; as a consequence, the bladder catheter was not flushed (twice) leading to a blockage; pain was not assessed after a fall, and thus, the PRN analgesic was not administered; the medication chart was not updated and an error of drug administration occurred). In four instances, the nurses were unable to provide emotional support to two patients who required attention: the problem had already occurred the previous week.

Of the 75 recurrent MNC (36.4%), 21 were considered to be of high severity (11 concerned drug administration). Other examples are reported in Box 1. Seventy-eight (37.9%) MNC were considered to be of low severity (see Box 2). For example, 21 concerned a delay in drug administration (e.g., a diuretic administered in the next shift), 17 concerned resident monitoring, and 16 concerned the changing of wound dressing.

Box 1. Examples of the 41 (19.9%) highly severe instances of missed nursing care

Missed placement of an antipressure ulcer mattress (recurrent)

Missed administration of a PRN analgesic drug

2-hour delay in the administration of the scheduled therapy (benzodiazepine, diuretic, and selective serotonin reuptake inhibitors antidepressant) to 1 resident who refused therapy

Missed updating of the medication chart

Missed administration of a diuretic, β-blocker, selective serotonin reuptake inhibitors antidepressant, antihypertensive, antipsychotic, proton pump-inhibitor to a resident who refused therapy

30- to 60-minute delay in patients' feeding

Blood test not performed

Blood pressure measured 60 minutes after the resident's worsening

Anxiolytic drug administered 30 minutes after the inception of agitation

Box 2. Examples of the 78 (37.9%) mild to moderately severe instances of missed nursing care

90-minute delay in the positioning of compression stockings

Missed change of the gastrostomy dressing

3-hour delay in giving the requested emotional support

Missed performance of a rectal swab

3-hour delay in subcutaneous hydration administration

Missed performance of periodic blood pressure monitoring

Seventeen MNC (7.6%) occurred during the night shift in five of the 17 NHs that provide 24-hour nursing care (range of reports per NH: 1–8): six described a delayed basic need (thickened water given 40 minutes after the NH resident's request) and four described drug administration. Four of the 17 instances of MNC were categorized as highly severe.

Causes and Potential Avoidability of MNC

The causes of MNC at night did not differ from causes during the day shift.

Almost half of the MNC (n = 100, 48.5%) was ascribed to inadequate staffing (Table 4). During the day shift, nurses were responsible for 10 to 90 NH residents (median = 44), of whom 50% (median value) were highly dependent; at night, the median (range) number grew to 73 (41–96).

Among the MNC attributed to the lack of personnel, in five instances, nurses' absence at night was a cause of inappropriate treatment and significant discomfort for the NH resident (e.g., artificial nutrition stopped before the end or urine bag of the suprapubic catheter not replaced). In six instances, there was only one nurse on staff, and she had to accompany the physician on periodic visits and planned care (e.g., the wound dressing change or artificial nutrition preparation) had to be delayed.

Twenty-six MNC were due to unavoidable factors (see the Box 3 for some examples): in 14, the intervention was not performed because of resident refusal or agitation, in seven, the resident was engaged in other caring activities, and three were caused by the physician unavailability (e.g., anticoagulant not administered because of missing dosage).

Box 3. Examples of unavoidable factors

Discussion with another resident's caregiver

Residents' agitation

No prescription for the PRN medication

Resident's refusal of care

Resident engaged in another activity

General practitioner's unavailability

Sixty-seven percent (138) of MNC was potentially avoidable/preventable; most were due to inadequate staffing (100/138, 72.5%), the remaining were due to a mix of other factors, such as organizational issues (e.g., nurse had to perform administrative tasks, thus delaying the change of wound dressings) or communication problems between colleagues or with the hospital (a nurse's aide did not tell the nurse that a resident was agitated, or the hospital did not report catheter removal and urine output was not assessed). One-third (n = 68) of the MNC were unavoidable (e.g., a patient's fall), because of the resident's worsening or refusal of care.

DISCUSSION

To our knowledge, this is the first study that attempted to provide the incidence rate of MNC for at least three consecutive days, showing a total of 223 MNC during 381 shifts among the 17.5% of NH residents observed, and the nurses' assessment impact of each MNC on the resident. Although the differences in the detection methods make comparisons with other studies difficult, when nurses freely report MNC, the frequency of the phenomenon seems much lower compared with measurements based on a pre-established inventory.[7] Asking nurses to report MNC that occurred in the previous week from such an inventory may lead them to identify what could be described as "ideal care," i.e., care that should be performed, such as talking to patients, but is not usually done, thus overestimating MNC. Our method allowed the identification of actual MNC, giving a picture of the care nurses are responsible for and of their priorities. Communication with patients was rarely reported by the nurses in our study, whereas in other studies,[15–18] it is one of the most common aspects of MNC, as well as nursing documentation practices.[15,25]

One of the criticisms of MNC research is the lack of measurement of patient outcomes.[1] In our study, more than 20% of MNC were categorized as highly severe because of their possible impact

TABLE 4. Reasons for and Avoidability of MNC During the Day Shift

	Avoidable Factors, n (%)	Unavoidable Factors, n (%)	Total, n (%)
Inadequate staffing	100 (72.5)	—	100 (48.6)
High workload	*56*	—	*56 (27.2)*
Lack of personnel	*38*	—	*38 (18.5)*
Lack of time	*6*	—	*6 (2.9)*
Clinical events that impacted the working routine	—	35 (51.5)	35 (17)
Clinical events that did not impact the working routine	7 (5.1)	19 (27.8)	26 (12.6)
Nurse's work organization	17 (12.3)	7 (10.3)	24(11.6)
Communication problems	12 (8.7)	1 (1.5)	13 (6.3)
Nurse's errors	-for	5 (7.4)	5 (2.4)
Others*	2 (1.4)	1 (1.5)	3 (1.5)
Total	138 (67)	68 (33)	206 (100)

*The resident asked for the intervention more often than necessary; recurrent lipothymic episodes; nurse thought it was better to carry out the procedure in the morning.

on the resident (clinical impact or discomfort) or their repetitiveness, indicating organizational problems. Most MNC involved drug administration, which occupies up to 72% of NH nurses' time,[26] followed by resident monitoring, which was omitted much more frequently in our study than in others.[8] One possible explanation may be because of our sample, including that the most dependent residents may have led nurses to report activities strictly related to patient's physical conditions, giving less importance to educational or relational activities.

More than 50% of omissions were delegated to the next shift, and the delays were often less than 1 hour. Not all care needed to be performed at a fixed time, and the reporting of such delays may indicate discomfort or difficulties in rescheduling the work plan.

The observed median of 40 residents assigned to each nurse is consistent with previous studies, and inadequate staffing was among the most reported causes for MNC.[14,25,27] Nurses' perception of poor staffing is associated with reporting MNC[15,28] and quality of care.[29,30] Not increasing the number of nurses when medical visits were scheduled and nurses' absence at night were sources of omissions or delays, causing significant discomfort to NH residents and in some cases even malpractice (e.g., daily withdrawal of the artificial nutrition before its end).

As many as one-third of MNC was due to unpredictable, mainly clinical, events. Of course, when the number of staff is hardly enough to comply with routine management, any event that disrupts the routine may cause problems. Critical thinking is an essential skill in the nursing practice that provides guidance in setting priorities and establishing which activities can be safely delegated to nursing assistants[31]; therefore, it should be a focus of undergraduate nursing education.

Fourteen patients refused treatment and presented neuropsychiatric symptoms; dealing with these patients requires both expertise and time; these situations are common in NH, and they can pose ethical dilemmas and often result in omission of care.[32]

A noteworthy result is that almost 40% of the reported MNC were not categorized as highly severe by nurses, as they had no consequences for the resident, partly because they were delayed within the same or to the next shift. Postponing the change of a wound dressing by a few hours may be clinically irrelevant if it does not cause discomfort to the resident; indeed, its status as a MNC could be debated. Moreover, some reported MNC does not seem like a real shortcoming in care, but rather a delay on the nurse's work plan (e.g., delay in monitoring the vital signs because a bedfast resident was taking a shower scheduled by the ancillary staff).

In complex organizations is nearly impossible to comply with all the planned activities within the planned time. Should each instance of omitted or delayed care be considered a MNC? Or only those that may potentially impact patients (including on patients' comfort)? The scientific nursing community should reflect critically on the concept of MNC, taking into account all the elements that can contribute to its clinical significance. In addition, the current estimation of MNC, based on broad measure, should be questioned because of the substantial risk of distortions.

Strength and Limitations

Some limitations have to be considered when interpreting these findings. Even if this method permitted us to override the limits of other studies conducted to date, we still used a self-reported measure. Therefore, the reporting may be susceptible to response bias; the head nurse and the management were not blind to the data collection and nurses might have underreported MNC for the fear of blame or retaliation. Similarly, the assessment of the perceived severity of the reported MNC, in an attempt to associate omissions with patient outcomes, may have been influenced by individual and contextual values. Further studies based on rigorous objective measures and able to explore unequivocally the associations between MNC and adverse patient events are needed. Moreover, because we did not investigate which care is usually carried out by nurses in NHs, we cannot explain the underreporting of specific categories of MNC, such as psychological aspects of care and documentation practices.

Despite the convenience sample of participating NHs, the number and the organizational differences of the NHs involved allow us to generalize the findings to NHs with similar characteristics. Furthermore, the data collection for three consecutive days permitted us, for the first time, to capture the recurrence of MNC through multiple notifications.

CONCLUSIONS

Measuring MNC at the individual level has allowed us to highlight some organizational limits both at the NH and the regional service delivery model level, which could be subject to correction and improvement. On the other hand, we must be aware that a certain proportion of MNC is unavoidable; nurses should use their critical thinking when prioritizing and delegating nursing

activities, and collaborative teamwork may prove effective to improve health care communication.

Given the potential value of the MNC as a quality indicator, the scientific nursing community should reconsider the tools used so far to measure it; this research calls into question the current knowledge of the phenomenon and the way it is measured.

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