

# Missed care and support figures: preliminary investigation in some surgical ward

Alfonso Sollami, Federica Begarani, Giuseppe Marletta, Rita Romano

University Teaching Hospital of Parma (Italy)

**Abstract.** *Background and aims:* Missed Nursing Care is defined as planned care in the patients care process that is omitted or delayed. Despite their importance in Italy, there are just few studies that measure Missed Nursing Care's prevalence and causes. We are not aware of studies published in literature that have related Missed Nursing Care with the presence or absence of support staff. *Aims:* This study's objective, was to measure nurse's perception and reasons for missed care in surgical wards with or without Health Care Assistants, and, to assess whether there is a significant difference between the two groups of nurses. *Method:* A Cross-sectional observational study was conducted through the administration of the "Missed Nursing Care Survey" in the Italian Version to nurses of the wards surveyed. *Results:* Results have confirmed that the most frequent Missed Nursing Care are hygiene and mobilisation activities as reported in other Italian and foreign studies, with higher frequency in wards without Health Care Assistance. Also, the study confirmed other Italian and foreign study results recognising the most significant motivation for Missed Nursing Care's as the lack of staff and unexpected events. *Conclusions:* Without wishing to attribute a cause/effect relation, it is interesting to assess the results, which seem to show that the presence of Health Care Assistances contributes to reduce the prevalence of missed activities. The lack of staff has revealed higher average of Missed Nursing Care for both groups, which seems to direct our attention not only towards the presence of Health Care Assistances but in regards to their inclusion in care activities. It may be necessary to reflect on the priority that nurses give to certain activities. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Key words:** Missed Nursing Care, Health Care Assistance, Surgery

## Introduction

The first notion of missed nursing care began to show in qualitative studies conducted in some surgical wards in American hospitals in 2006 (1).

Missed nursing care is defined as "any aspect of the patient care that has been (partially or totally) omitted or delayed" (2).

It is important to emphasise that the Missed Nursing Care (MNC) are omission errors (for example: not teaching the patient) instead of commission errors (for example: giving the wrong medication to a patient) (2,3).

Furthermore, there are studies in literature, in which other related concepts were considered, such as: Unfinished care (4) and rationed care (5). Moreover, Sochalski's study (4) showed that the quality of assistance was strongly related to unfinished care. ( $r=0.634$ ;  $P<0.001$ ).

In contrast to commissioning errors, there are no studies in literature that implement (or propose) interventions to reduce MNCs.

The MNC studies used three conceptual models which depart from three different definitions and utilise three different assessment tools. The approaches are identified with the terms: Task Undone (TU), Implicit

Rationing (IR) and Missed Care (MC). The TU approach sets patients and organisational outcomes, on the contrary, MC and IR focus their attention on patient and nurses outcomes (6).

Although it's not possible to compare these studies because of the different instruments, outcomes and approaches used, the results allowed us to underline how the MNC represent an element to assess the quality of the assistance provided, therefore, deserves the attention not only of clinical nurses but also of nursing managers.

In a quantitative study on Missed care conducted by a Swiss team, it was concluded that even if the MNC levels were low, they identified significant predictors for six nursing sensitive outcomes (patient satisfaction, drug administration mistakes, patient falls, healthcare associated infections, pressure sores, and critical accidents that involved patients in the last year).

Another qualitative study on the identification of MNCs has recognised nine areas of Missed Care (Walking, passive mobilisation, delayed or missed feeding, patient education, discharge planning, emotional support, hygiene, documents collection/transmission and surveillance), and seven probable reasons for Missed Care (e.g. limited time for nursing intervention, poor cooperation etc..) (1)

Other research, most of which were observational-qualitative, have detected non completed nursing care as: Walking, mobilisation, feeding, wound care, patient education, hand washing and care of peripheral IV line (7).

Many of the reasons why it is possible to identify MNC are related to the structural dimension of the care environment, documentation procedures, technologies of nursing care, care models, worsening of patient condition (8)

MNC can lead to negative outcome for patients, as high postoperative mortality rates and low patient satisfaction rate (9,10).

Some observational/ quantitative Italian studies have identified Missed care in hospital environment. In an Italian study (11), they considered 12 medical wards (interviewing a total of 252 nurses and 165 HCAs) of a North Italian hospital and they utilised the MISSCARE tool. This research underlined that patient walking, 2 hourly positional change, and

discharge education were the most missed items. On the contrary, the less frequent Missed care included: blood sugar monitoring, hand hygiene, wound care and skin control.

The study reported that the most likely causes to MNC were related to: an increase of number of patients, worsening of patient condition and lack of staff. Instead, the less probable were: tensions and communication difficulties between the nursing team, other wards failed to fulfil their duties and inadequate nurse handover.

A second study (12), included seven hospitals in Bolzano's county, with a total of 46 wards (interviewing a total of 934 between nurses and HCA's. They used a different tool (Basel Extent of Rating of Nursing Care questionnaire). In this case the MNC concerned: Patient care planning, confused patient surveillance, emotional support and family meetings.

Another Italian study conducted by (13), included five hospitals, with a total of 67 wards (979 nurses). This research showed that the MNC concerned: walking, passive mobilisation and oral hygiene. Instead the less omitted care included: vital signs monitoring, wound care and blood sugar monitoring. The highlighted causes were: increase number of patients, critical patient conditions, and lack of staff. Less significant causes were: other ward failed to fulfil their duties, tension between staff members, inadequate nurse handover.

Another research conducted in two hospitals in Italy, which included a total of four medical wards (total nurses 51) showed that walking, passive mobilisation and oral hygiene were the most frequent MNC. Also in this research as in the previous one, the identified causes were: Inadequate number of staff, critical ill patients, an increase number of patient or worsening of their conditions and high number of admissions/discharges (14).

The results between the Italian and foreign studies are similar.

Although there are some studies that have investigated the MNC in relation to team work and/or presence of support staff (15,16,17), not all of these studies were in a hospitalised area, indeed only few of those considered supporting figures similar to HCAs. For this reason, we encountered difficulties in comparing

results. However, the conclusion showed that MNC are a phenomenon present in different international contexts and they recognise different related predictors.

A study identifies as predictor elements for MNC: type of ward, nurses age, their perception about staffing, and their perception about work (16). This was confirmed by previous studies (18).

In Italy, Palese, Ambrosi et al (11), have measured nurses and HCAs perception about MNC related to their role and responsibility through the MISSCARE survey. The results showed that the difference between the two groups were significant for some missed care. The HCAs perception about MNC differed from nurses for oral hygiene and feeding while the food is warm. In fact, nurses considered more blood sugar monitoring, assessment of patient's general condition and evaluation of medication effectiveness. Between the two groups there were significant differences in measurements. For example, for the HCAs the unavailability of the caregiver was significant, instead for nurses, the inadequate handover between shifts, tensions or difficulties in communication between the team were deemed more significant.

There are many studies about MNC in surgical departments. A study conducted in the UK (9) was included in the European study RN4CAST. This research showed that the increase of nurse work load (10%) was related to the rise of missed care of 7% (OR 1.068, 95% CI 1.031-1.106) and the increase of 16% of probability of death for patients within 30 days from the admission.

## Patients and method

### *Aims*

The recent introduction of support figures in some operating units of the surgical department has led us to carry out a cross-sectional observational study. The research questions can be stated as follows:

- Assess nurses perception about MNC and linked reasons in wards with HCAs
- Assess nurses perception about MNC and linked reasons in wards without HCAs

- Assess if and how there are perception modifications in the two groups and the possible reasons and if these differences are significant

### *Design*

The cross-sectional study was conducted through the administration of an anonymous questionnaire, given to nurses from eight surgical wards North Italy Hospital, four of which had HCAs and four which had not.

### *Participants and procedures*

The sample is represented by nurses with at least one year of service in the following surgical departments: general surgical, week surgery, maxillofacial, otolaryngology, thoracic and vascular, traumatology (2) and urology.

They were contacted by the respective coordinators and on a voluntary basis, after having been informed and given their consent, the paper version of the questionnaire was delivered.

The questionnaires were then collected in a special box and delivered to the research manager.

### *Instruments*

The Missed Nursing Care survey in the Italian version (13) was used to measure MNC. An authorisation was requested and obtained for its use. The survey included 2 session.

First (session A) formed by 24 items each of which identify an activity. The respondent had to indicate the frequency of omission through a Likert scale (5 steps from 1=never missed to 5= always missed). (For example: Patient walking 3 times a day as planned)

Contrary to the original version, in this new one, when an activity is not included in the ward jobs, the responder could answer with "Not necessary activity". (the authors of original version have responded with a positive opinion for entering this option).

The second part (Session B), was formed by 17 items, each of which identify a possible omission cause

(example: unexpected increase of number/ patient critical condition of the ward).

The participant had to answer through a 4 steps Likert scale (from 1= not significant to 4= significant) indicating “in which measure” the cause is plausible regarding the ward reality (eg.: Inadequate number of staff). In the Italian version (13), this second part acknowledges 4 factors: “Lack of resources (5 items), lack of staff (4 items), communication (6 items), Unexpected events (2 items). The instrument reliability was underlight by the Cronbach coefficient (table 1), it shows acceptable value from (65) to excellent (91, 19).

### Data analysis

The collected data were processed through IBM-SPSS23<sup>®</sup> software.

For each items and factors continuous variables including average, standard deviation/median and IQR were calculated. Meanwhile, for nominal variables only frequencies were calculated.

The comparison between the scores was obtained using the U test from Mann Withney that utilises independent samples given that the Kolmogorov- Smirnov has shown an abnormal data s distribution ( $p < .005$ ).

### Ethical statement

After reading the informed consent and expressing their agreement, the participants filled out the questionnaire. Given that we collected no personal information, participant were adult and completely anonymus, and participation was voluntary, Ethic Committee Approval was not required in accordance with with national laws (20).

### Results

#### Sample

Compared to the total number of nurses contacted (n=113), 7 did not express their consent, therefore 106 questionnaires were withdrawn and analysed, with a total response rate of 94%. The response rate in the wards varied between 68.4% and 100%

Regarding the total number of surveys (n=106). 67.9% (n=72) of the respondents were female and 30.2% (n=32) were male, meanwhile 1.9% (n=2) did not express any indication of gender.

The average respondents age is 39.05 (sd  $\pm$  10.23), with a minimum age of 22 and max of 62 years old. The

**Table 1.** Scale factors probable causes

Factors	Item	Cronbach's alpha
<b>Lack of resources</b>	<ul style="list-style-type: none"> <li>• Medications not available when needed (pharmacy has not delivered)</li> <li>• Inadequate nurses handover from the previous shift</li> <li>• Other wards did not fulfil their duties (e.g. physiotherapist did not make the patient walk)</li> <li>• Supplies/equipment not available when needed (e.g. ECG)</li> <li>• Supplies / equipment not working when needed (e.g. ECG)</li> </ul>	.787
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Lack of support/help between staff member</li> <li>• Tension or miscommunication between staff nurse and HCAs</li> <li>• Tension or miss communication between nurse staff</li> <li>• Tensions or miss communication between doctor and nurse staff</li> <li>• Failure to report missed care by HCAs</li> <li>• Caregiver not available</li> </ul>	.914
<b>Lack of staff</b>	<ul style="list-style-type: none"> <li>• Inadequate number of staff</li> <li>• Inadequate number of support staff (e.g. HCAs)</li> <li>• Not balance ratio patients to nurse</li> <li>• High number of admissions/discharges during a shift</li> </ul>	.740
<b>Unexpected event</b>	<ul style="list-style-type: none"> <li>• Clinical critical patient condition (e.g. patient worsening)</li> <li>• Unexpected rise of number/critical patient condition in a ward</li> </ul>	.657

average years of experience is of 13.44 (sd  $\pm$  9.85) with a minimum of 1 and maximum of 42 years. The average years of experience in the actual ward is 5.78 (sd  $\pm$  5.95) with a minimum of 1 and maximum of 30 years.

79.24% (n =84) of respondents have a University degree, meanwhile 17.9 % (n =19) have a Regional diploma. 2.8% (n=3) did not answer.

91.5% (n=97) work shifts, meanwhile 6.6% (n=7) only during the day. 1.9% (n=2) did not answer.

15% (n=16) of the respondents, have furthermore, declared to have a first degree Master; 2.8% (n=3) have a second level Master degree;

### *Prevalence of missed nursing care*

The following table shows the mean values and medians of omitted activities, comparing data

### **Reasons for missed nursing care**

The values shown in the following table represent the averages and medians detected, comparing the values between unit with and without HCAs

If the measures of the factors making up these item batteries are to be considered, the results are represented in Table 4.

Table 4 shows that the factors: Unforeseen, Communication and Lack of staff recorded higher measures in the group of wards without HCA. Whereas the factor "Lack of resources" recorded a greater measure in the wards with HCA. It should be pointed out, however, that the Mann-Whitney U-test for independent samples did not reveal any significance between the differences in the medians measured between the two groups.

### **Conclusion**

As shown in table 2, in the wards without HCAs, the activities most omitted were: Meal preparation and setting for auto sufficient patients (m=3.77; DS $\pm$ 1.352), Patient walking 3 times a day as planned (m=3.70; DS $\pm$ 1.043) and Patient passive mobilization (m=3.57; SD $\pm$ 1.126), Oral Hygiene (m=3.46; SD $\pm$ 1.293). For

this group of departments, the least omitted activities were: Blood sugar monitoring as prescribed (m=1.37, DS $\pm$ 0.837), Fluid balance monitoring (input/output) (m=1.56; DS 0.958) and Vital signs monitoring as planned (m=1.72, SD $\pm$ 0.978).

Similarly in the wards with HCAs the activities that were mostly omitted were: Patient walking 3 times a day as planned (m=3.27; DS $\pm$ 1.326), Patient passive mobilization (m=3.10; DS $\pm$ 1.246) and Oral Hygiene (m=2.87; DS $\pm$ 1.209). While those omitted to a lesser extent were: Blood sugar monitoring as prescribed (m=1.22; DS $\pm$ 0.743), Vital signs monitoring as planned (m=1.49; DS $\pm$ 0.916) and Hands hygiene (m=1.47; DS $\pm$ 1.002).

It is interesting to note how the activities most omitted, as well as those omitted to a lesser extent, were equal between the two groups even if with lower averages in the group of departments with HCAs. However, with respect to the average differences detected, only some of them were significant (es. Patient passive mobilisation, Meal preparation and setting for auto sufficient patients, Patient assessment at least once per shift).

As it is showed in table 3, in wards without HCAs the higher average for the groups included: inadequate number of HCAs (m=3.82 – DS $\pm$ 0.508), inadequate number of Health Care personnel (m=3.75 – DS $\pm$ 0.434) and high number of admissions/discharges (m= 3.30 – DS $\pm$ 0.89). Meanwhile, for the other group of wards (with HCAs) the higher average included: "high number of admissions/discharges within a work shift" (m=3.45 – DS $\pm$ 0.74) and inadequate number of HCAs (m=3.32 – DS $\pm$ 0.86).

The motivation that recorded lower averages, and therefore less identified as the causes of missed care in wards without HCAs included: "Supplies/equipment not available when needed (e.g. ECG)" (m=0.95 – DS $\pm$  1.04), "not operating supplies/equipment when needed (e.g. PC) (m= 2.02 – DS $\pm$  .99) and "inadequate nursing handover from the previous shift" (m= 2.05 – DS $\pm$ 0.95); In wards with HCAs the reasons with lower average were "Tensions and miscommunication between nurse staff members" (m=1.96 – DS $\pm$ 0.97), "Supplies/equipment not available when needed (e.g. ECG)" (m= 2.04 – DS $\pm$  1.07), "not operating supplies/equipment when needed (e.g. PC)" (m= 2.15 – DS $\pm$  1.11)



**Table 2.** Missed care (different between wards)

Activities	HCAs Presence										Mann-Whitney U test Sign.
	no			yes			no		yes		
	n	m	DS	n	m	DS	MD	IQR	MD	IQR	
Patient walking 3 times a day as planned	57	3.70	1.043	49	3.27	1.326	4.0	1.0	4.0	1.0	.127
Patient passive mobilisation	57	<b>3.57</b>	1.126	49	<b>3.10</b>	1.246	<b>4.0</b>	1.0	<b>3.0</b>	2.0	<b>.054</b>
Meal preparation and setting for auto sufficient patient	57	<b>3.77</b>	1.352	49	<b>2.44</b>	1.231	<b>4.0</b>	2.0	<b>2.0</b>	3.0	<b>.000</b>
Oral Hygiene	57	3.46	1.293	49	2.87	1.209	4.0	2.0	3.0	2.0	0.15
Assist not sufficient patient with feeding	57	<b>3.25</b>	1.135	49	<b>2.28</b>	1.174	<b>3.0</b>	2.0	<b>2.0</b>	2.0	<b>.000</b>
Discussion about discharge plan and teaching of care to be performed at home	57	<b>3.24</b>	1.186	49	<b>2.32</b>	1.144	<b>3.0</b>	1.0	<b>2.0</b>	1.0	<b>.000</b>
Medications administration within 30 minutes before or after the given time	57	2.35	1.101	49	1.94	0.998	2.0	1.0	2.0	2.0	.048
Filling in nurse records	57	1.80	1.043	49	1.89	1.080	2.0	1.0	1.0	2.0	.687
Patient/family teaching	57	2.29	1.202	49	2.04	0.978	2.0	2.0	2.0	2.0	.397
Patient/family emotional support	57	2.45	1.094	49	2.02	0.887	2.0	2.0	2.0	1.0	.40
Patient's hygiene and skin control	57	<b>2.21</b>	1.176	49	<b>1.51</b>	0.893	<b>2.0</b>	2.0	<b>1.0</b>	1.0	<b>.001</b>
Evaluation of the insertion site of peripheral or central venous catheters according to Hospitals protocol	57	2.25	1.148	49	1.94	0.966	2.0	2.0	2.0	1.0	.188
Answering the bell within 5 minutes from the call	57	2.18	1.120	49	1.71	0.922	2.0	2.0	1.0	2.0	.25
Administration therapy as needed within 15 minutes	57	<b>1.98</b>	1.024	49	<b>1.55</b>	0.914	<b>2.0</b>	1.0	<b>1.0</b>	1.0	<b>.020</b>
Participating in multidisciplinary wards meeting when requested	57	2.43	1.042	49	2.12	1.077	2.0	1.0	2.0	3.0	.106
Assist patient with elimination needs within 5 minutes from the call	57	<b>2.69</b>	1.136	49	<b>1.93</b>	0.925	2.0	1.0	2.0	2.0	<b>.001</b>
Wound care	57	<b>2.04</b>	1.061	49	<b>1.51</b>	0.893	<b>2.0</b>	2.0	<b>1.0</b>	1.0	<b>.005</b>
Vital signs monitoring as planned	57	1.72	0.978	49	1.49	0.916	1.0	2.0	1.0	1.0	.125
Fluid balance monitoring (input/output)	57	1.56	0.958	49	1.56	0.896	1.0	1.0	1.0	1.0	.756
Hands hygiene	57	<b>2.00</b>	1.274	49	<b>1.47</b>	1.002	<b>1.0</b>	1.0	<b>1.0</b>	1.0	<b>.009</b>
Blood sugar monitoring as prescribed	57	1.37	0.837	49	1.22	0.743	1.0	0.0	1.0	1.0	.225
Patient assessment at least once per shift	57	<b>1.95</b>	1.239	49	<b>1.45</b>	0.980	<b>1.0</b>	1.0	<b>1.0</b>	1.0	<b>.013</b>
Patient condition re evaluation	57	1.88	1.087	49	1.56	0.796	1.0	2.0	1.0	2.0	.178
Evaluation of administered medications	57	2.13	1.251	49	1.73	0.844	1.0	2.0	2.0	1.0	.212

Note: MD=median; IQR: Interquartile range

**Table 3.** Possible causes of Missed Care (difference between wards)

Reasons for Missed Nursing Care	HCAs Presence										Mann-Whitney U test Sign.
	no			yes			no		yes		
	n	m	DS	n	m	DS	MD	IQR	MD	IQR	
Inadequate number of staff	57	<b>3,75</b>	0,434	49	<b>3,38</b>	0,866	<b>4.00</b>	1.00	<b>4.00</b>	1.00	<b>.023</b>
Urgent patient condition (worsening of patient condition)	57	3,23	0,809	49	3,09	0,915	3.00	1.00	3.00	2.00	.450
Unexpected rise in number of patient /patient's critical condition	57	3,27	0,774	49	3,28	0,861	3.00	1.00	3.00	1.00	.726
Inadequate number of staff (e.g. HCAs)	57	<b>3,82</b>	0,508	49	<b>3,32</b>	0,862	<b>4.00</b>	0.00	<b>4.00</b>	1.00	<b>.000</b>
Unbalance number of patients per nurse	57	3,27	0,904	49	3,29	0,898	3.00	1.00	4.00	1.00	.853
Medications not available when needed	57	<b>2,07</b>	0,912	49	<b>2,45</b>	0,951	<b>2.00</b>	2.00	<b>2.00</b>	1.00	<b>.042</b>
Inadequate nurses handover from the previous shift	57	2,05	0,951	49	2,19	0,960	2.00	2.00	2.00	3.00	.505
Other wards failed to fulfil their duties	57	2,47	0,908	49	2,44	1,109	3.00	1.00	3.00	1.00	.861
Supplies/equipment not available when needed(e.g .ECG)	57	1,95	1,042	49	2,04	1,071	2.00	2.00	2.00	2.00	.641
Supplies / equipment not working when needed (e.g. ECG)	57	2,02	0,991	49	2,15	1,111	2.00	2.00	2.00	2.00	.643
Lack of support/help between staff member	57	2,45	1,127	49	2,31	1,035	3.00	2.00	2.00	2.00	.534
Tension or miscommunication between staff nurse and HCAs	57	2,39	1,056	49	2,21	1,010	2.50	1.00	2.00	1.00	.372
Tension or miss communication between nurse staff	57	2,30	1,085	49	1,96	0,967	2.00	2.00	2.00	1.00	.104
Tensions/communication problems between doctors and nurses	57	2,46	1,019	49	2,42	0,919	2.50	2.00	2.00	1.00	.869
Failure to report missed care by HCAs	57	2,40	1,098	49	2,48	0,937	2.00	1.00	3.00	1.00	.579
Caregiver unavailable	57	2,67	0,852	49	2,86	0,842	3.00	1.00	3.00	1.00	.217
High number of admissions/ discharges during a shift	57	3,30	0,893	49	3,45	0,738	4.00	1.00	4.00	1.00	.488

Note: MD=median; IQR: Interquartile range

Only for a few items, a significant difference was found between the two groups of UNITS, namely for the items: Inadequate number of health personnel ( $p < .005$ ), Inadequate number of healthcare personnel (e.g. HCAs, auxiliaries) ( $p < 0.005$ ), with a greater extent in UNITS without HCAs. While the other significant difference, albeit at the limit of significance ( $p < .005$ )

between the two groups of wards is the one referring to "Medicines not available when needed" and contrary to the other two significant differences, the highest measure was in the wards with HCA.

Table 4 shows that the factors: Unforeseen, Communication and Lack of staff recorded higher measures in the group of wards without HCA. Whereas the

**Table 4.** Likely reasons factor (difference between wards)

Likely reasons factor	HCAs Presence										
	no			yes			no		yes		Mann-Whitney U test
	n	m	DS	n	m	DS	MD	IQR	MD	IQR	Sign.
Unexpected event	57	3,24	0,726	49	3,18	0,804	3.50	1.00	3.50	1.00	.981
Lack of staff	57	3,54	0,486	49	3,42	0,649	3.75	.38	3.75	1.00	.915
Communication problem	57	2,44	0,852	49	2,40	0,796	2.50	1.25	2.33	1.17	.696
Lack of resources	57	2,11	0,721	49	2,25	0,776	2.00	.80	2.20	1.00	.346

Note: MD=median; IQR: Interquartile range

factor "Lack of resources" recorded a greater measure in the wards with HCA. It should be pointed out, however, that the Mann-Whitney U-test for independent samples did not reveal any significance between the differences in the medians measured between the two groups.

In agreement with the results of international (21) (22) (23) and Italian studies (12) (13), even for our respondents "active/passive walking", are the most compromised activities. As hypothesised by Sist et al (13), as this activities needs at least two operators at the same time, nurses tend to neglect it. It is important to emphasise as this omitted activity can have a significant value in the failure to prevent some serious complications such as deep vein thrombosis and stagnation of bronchial secretions with consequent stasis pneumonia, as well as contributing to decrease relational capacity and space/time orientation and therefore rehabilitation.

The third and fourth most omitted interventions are respectively "Meal preparation and setting for auto sufficient patient" and "Oral hygiene", each of which determines the quality of care provided, as they represent a principal intervention on patient's comfort.

Then, in agreement with other pervious international (22) (23) and Italian studies (11)(12) (13) among the activities that have registered higher average were: "discharge plan", "education", "emotional support" and "drugs administration within 30 minutes from prescription". These are direct nurses activities, which means that they do not need support personnel. Therefore they represent specific professional activities of considerable importance that contribute to

guaranteeing not only quality intra-hospital care, but they even represent strategic interventions to ease the transition to other setting of care (or patient's home), and they reduce the possibility of complications and patient's re-admission.

It is important to underline as these activities have registered higher average in wards without HCAs (therefore the most omitted), rather than in wards with HCAs. For one of these activities "emotional support" the difference between averages has been found significant. This could support the hypothesis that in wards with HCAs, nurses have the possibility to fully perform some of their duties, as the one just described. This entails an advantage to the quality of care provided and improves not only nursing outcomes.

Generally, in our study it was found that in wards with HCAs, all average MNC were lower, and therefore, it was less probable to have an omitted or delayed nursing care, regardless of whether these were of exclusive nursing relevance or nursing ctivities that can be assigned to HCAs.

Considering the limitations of our study determined by the small sample of convenience, it is interesting to evaluate the data in relation to the difference between wards with and without HCAs. With respect to the the data to be reflected upon is the small difference in terms of the average (absolute value) that was measured between the two groups. This suggests that the presence of support personnel to specific functions is not enough, but rather a reorganization the perception of inadequate staff numbers is in fact something that the two groups of departments have in common. It will be necessary to examine the activities and the



times (in the individual wards) in which these activities are implemented in order to better identify organisational models that meet patients' needs.

"Communication" seems to be an element that is positively correlated to both "lack of resources" and "lack of staff" (table 4). The data suggest to evaluate the process of information transmission between the two groups wards.

As already mentioned previously, although the measured average of each MNC are greater in wards without HCAs, only for few of them significant difference were found, while for others the difference found was even minimal in terms of absolute value.

Although highlighting the serious problem of the quantity of health care staff related to workload, the results analysis wants to be a matter for a broader reflection, that takes into account, in an analytical way, the nature of the omitted/delayed activities in relation to the setting where they were measured.

In our opinion, it is important to turn our attention not only to the data collected, but also on the fact that Missed Care concerns above all the peculiar aspects of nursing such as: emotional support, staying close to a patient, guaranteeing physical comfort, helping to eat and drink, mobilisation.

Picking up on Prof. R. Watson's thought (24) we also need to reflect on the terminology we use, it is not by chance that the MNCs concern that sphere of 'basic' activities, making them seem like secondary activities. We need to discuss these activities in the classroom (with students) on the wards (with nurses) and begin to identify them as 'must-have' activities, to give them the importance they have also in relation to clinical outcomes.

A careful examination of the omitted treatments and their motivations contextualised in the wards where they were measured can be one element among many for a careful and timely reflection on the development of care and the improvement of care.

It would be desirable to conduct similar studies throughout the national territory and not only in the surgical field, and possibly with mixed method research designs in order to more thoroughly analyze the types and reasons for NCDs, which in any case represent a limitation of the quality of the assistance offered.

**Acknowledgements:** The authors thank the coordinators and nurses who allowed data collection.

**Conflict of Interest:** Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

**Fundings:** The study did not have any form of funding

## References

1. Kalisch BJ. Missed nursing care: A qualitative study, *J. Nurs. Care Qual.* 2006; 21(4):306–13. <https://doi.org/10.1097/00001786-200610000-00006>.
2. Kalisch BJ, Landstrom GL, Hinshaw AS. Missed nursing care: a concept analysis. *J. Adv. Nurs.* 2009; 65(7):1509–17. <https://doi.org/10.1111/j.1365-2648.2009.05027.x>.
3. Kalisch BJ, Xie B. Errors of Omission: Missed Nursing Care. *West. J. Nurs. Res.* 2014;36 (7): 875–90. <https://doi.org/10.1177/0193945914531859>.
4. Sochalski J. Is More Better? The Relationship Between Nurse Staffing and the Quality of Nursing Care in Hospitals, *Med. Care.* 2004;42:1167-73. <https://doi.org/10.1097/01.mlr.0000109127.76128.aa>.
5. Schubert M, Glass TR, Clarke SP, et al. Rationing of nursing care and its relationship to patient outcomes: The Swiss extension of the International Hospital Outcomes Study. *Int. J. Qual. Heal. Care.* 2008;20(4): 227–37. <https://doi.org/10.1093/intqhc/mzn017>.
6. Bassi E, Tartaglini D, Palese A. Missed nursing care terminologies, theoretical concepts and measurement instruments: a literature review. *Assist. Inferm. e Ric.* 2018; 37 (1): 12–24.
7. Krishnagopalan S, Johnson EW, Low LL, et al. Body positioning of intensive care patients: Clinical practice versus standards, *Crit. Care Med.* 2002;30(11): 2588–92. <https://doi.org/10.1097/00003246-200211000-00031>.
8. Ball JE, Griffiths P, Rafferty AM, et al. A cross-sectional study of 'care left undone' on nursing shifts in hospitals. *J. Adv. Nurs.* 2016; 72 (9): 2086–97. <https://doi.org/10.1111/jan.12976>.
9. Ball JE, Bruyneel L, Aiken LH, et al. Post-operative mortality, missed care and nurse staffing in nine countries: A cross-sectional study. *Int. J. Nurs. Stud.* 2018; 78:10–15. <https://doi.org/10.1016/j.ijnurstu.2017.08.004>.
10. Lake ET, Germack HD, Viscardi MK. Missed nursing care is linked to patient satisfaction: A cross-sectional study of US hospitals, *BMJ Qual. Saf.* 2016;25(7): 535–43. <https://doi.org/10.1136/bmjqs-2015-003961>.
11. Palese A, Ambrosi E, Prospero L, et al. Missed nursing care and predicting factors in the Italian medical care

- setting. *Intern. Emerg. Med.* 2015;10:693–702. <https://doi.org/10.1007/s11739-015-1232-6>.
12. Muzzana C, Saiani L, Mantovan F, et al. Extent and type of implicit rationing of nursing care in seven South Tyrolean hospitals: a descriptive study. *Assist. Inferm. Ric.* 2018; 37(3):128–35. <https://doi.org/10.1702/2996.29981>.
  13. Sist L, Contini C, Bandini A, Palese A, Ferraresi A, et al. MISSCARE Survey - Italian Version: findings from an Italian validation study. *Ig. Sanita Pubbl.* 2018; 73 (1): 29–45.
  14. Pegoraro S. Missed Care: Indagine esplorativa nelle medicine dell'USL 15 (Missed Care: Exploratory investigation into the medicines of the USL 15), 2015.
  15. Zúñiga F, Ausserhofer D, Hamers JPH, et al. The relationship of staffing and work environment with implicit rationing of nursing care in Swiss nursing homes - A cross-sectional study. *Int. J. Nurs. Stud.* 2014; 52 (9): 1463–1474. <https://doi.org/10.1016/j.ijnurstu.2015.05.005>.
  16. Bragadóttir H, Kalisch BJ, Tryggvadóttir GB. Correlates and predictors of missed nursing care in hospitals. *J. Clin. Nurs*; 2017; 26(11-12):1524–34. <https://doi.org/10.1111/jocn.13449>.
  17. Gravlin G, Bittner NP. Nurses' and Nursing Assistants' Reports of Missed Care and Delegation, *Jona.* 2010;40(7/8): 329–35.
  18. Kalisch BJ, Gosselin K, Choi SH. A comparison of patient care units with high versus low levels of missed nursing care. *Health Care Manage. Rev.* 2012; 37 (4): 320–28. <https://doi.org/10.1097/HMR.0b013e318249727e>.
  19. Tan S. Misuses of kr-20 and cronbach's alpha reliability coefficients *Education and Science.* 2009; 34 (152): 101–112.
  20. European Union. Regulation 2016/679 of the European Parliament and the Council of the European Union Off J Eur Communities. Published online 2016
  21. Kalisch BJ, Landstrom G, Williams RA. Missed nursing care: Errors of omission, *Nurs. Outlook.* 57 (2009) 3–9. <https://doi.org/10.1016/j.outlook.2008.05.007>.
  22. Kalisch BJ, Terzioglu F, Duygulu S. The Misscare Survey-Turkish: Psychometric properties and findings. *Nurs. Econ.* 2012; 30 (1): 29–37. <https://pubmed.ncbi.nlm.nih.gov/22479961/> (accessed February 7, 2021).
  23. Bragadóttir H, Kalisch BJ, Smáradóttir SB, et al. Translation and psychometric testing of the Icelandic version of the MISSCARE Survey. *Scand. J. Caring Sci.* 2015; 29 (3): 563–72. <https://doi.org/10.1111/scs.12150>.
  24. Sironi C. Un saluto a tutti gli Associati e Lettori di Professioni Infermieristiche Assistenza di base : tutto tranne che di base (Greetings to all Nursing Associates and Readers Basic care: anything but basic). *Prof. Inferm.* 2018;71 (4) 193.

---

**Correspondence:**

Received: 29 March 2023

Accepted: 29 June 2023

Alfonso Sollami, RN, MSN, PhD

Azienda ospedaliero Universitaria di Parma, Italy

Via Gramsci 14, Parma, 43125 Italy

E-mail: sollamiphd@gmail.com