

Aberrant Work Environments – Rationed Care As System Failure Or Missed Care As Skills Failure?

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Abstract— Missed' care has emotional, professional and legal connotations because, as one participant from our study noted, the environment can change so quickly and staffing is not allocated to accommodate this. Nurses become frustrated because they are unable to use the knowledge and skill to provide the care; rather they are forced to prioritise care, some of which is either delayed or consciously missed. In this session we explore the emotional, professional and legal contexts of 'considered' missed care. Our New Zealand team replicated the South Australian study described above in New Zealand. The analysis of the data from 199 participants is now presented.

Keywords - New Zealand, missed nursing care, nursing, rationed care, workforce

I. INTRODUCTION

This report presents an analysis on the commentaries provided in a mixed methods survey that was conducted to examine the prevalence of missed nursing care in New Zealand. 'Missed' care has emotional, professional and legal connotations because, as one participant from our study noted, the environment can change so quickly and staffing is not allocated to accommodate this. Nurses become frustrated because they are unable to use their knowledge and skill to provide the care; rather they are forced to prioritise care, some of which is either delayed or consciously missed. In this paper we provide an overview of the study's findings, and then conclude with a discussion of the emotional, professional and legal impact of 'considered' missed care.

II. BACKGROUND

The New Zealand study represents a partial replication that used the Missed Nursing Care (MISSCARE) survey tool developed by Kalisch, Landstrom, & Williams¹ to measure missed nursing care in a New Zealand setting. This tool was developed using an 8-step method of concept analysis which found that missed care can be conceptualised within the Missed Nursing Care Model, and is defined as "any aspect of required patient care that is omitted (either in part or in whole) or delayed"² (p.1509). The MISSCARE survey has previously been used in research to explore missed nursing care in the United States of America (USA)^{3 4}, in Turkey⁵ and in Lebanon⁶.

¹ Kalisch, B. J., Landstrom, G. L., & Williams, R. A. (2009). Missed nursing care: Errors of omission. *Nursing Outlook*, 57(1), 3 - 9.

² Kalisch, B. J., Landstrom, G. L., & Hinshaw, A. S. (2009). Missed nursing care: A concept analysis. *Journal of Advanced Nursing*, 65(7), 1509 - 1517.

³ Kalisch, B. J., Tschannen, D., Hyunhwa, L., & Friese, C. R. (2011). Hospital variation in missed nursing care. *American Journal of Medical Quality*, 26(4), 291 - 299.

⁴ Kalisch, B. J., Tschannen, D., & Lee, K. H. (2011). Do staffing levels predict missed nursing care? *International Journal for Quality in Health Care*, 23(3), 302 - 308.

⁵ Kalisch, B. J., Terzioglu, F., & Duygulu, S. (2012). The MISSCARE survey: Psychometric properties and findings. *Nursing Economics*, 30(1), 19 - 37.

The impetus for this study was to replicate the studies being undertaken in Australia and previous to that, in Texas, with a view to finding out if similar issues around missed nursing care were demonstrated in a New Zealand cohort. A large international study is being planned and the results from this study will help to inform the preparatory phase of this international research.

It has long been recognised that in-patient hospital nurses are frequently so short staffed that they are unable to care for their patients by providing either the basic physical care or the emotional, supportive care that is required⁷. Furthermore, a review of the research literature indicates that a combination of lower levels of nurse staffing coupled with fewer available resources during off-shifts results in worse patient outcomes⁸. This questioning of the position of nursing as a commodity in a financial plan or a profession was raised a decade ago by Disch⁹ who warned that nurses as a profession were not only victims of this change but also supporters of it. Despite evidence linking better nurse to patient staffing ratios and patient outcomes¹⁰ the commodity driven human resource system fails to acknowledge the individuality of patient needs within predefined clinical pathways, and the need for responsive planning to meet these needs. Cooke¹¹ suggests that although nurses have secured key managerial positions within the health systems, they are still not able to manage the nursing workforce in a way that supports what nurses view as total patient care. This is because health service financial outcomes drive the decision making process that decides on the value of that care. This tension between operational cost and delivery of care has been the centre of debate since health services internationally became business units in the 1980s¹². It is

hypothesised that this may be directly attributable to the phenomenon of 'missed care'¹³ which sees nurses having to make decisions and choose what cares to provide to their patients based on availability of resources (with nursing time constituting a resource). Qualitative research by Kalisch¹⁴, which involved interviewing 173 healthcare professionals (registered nurses, licensed practical nurses, and nursing assistants) in 25 focus groups identified a number of areas where nurses regularly omitted or delayed cares. These elements included such aspects of routine care as ambulating patients, turning patients, delaying or missing feeding, patient teaching, discharge planning, offering emotional support, hygiene cares, fluid balance and surveillance.

Whilst Kalisch acknowledged that missed care was not a new concept, she did note that there was as yet no formal recognition of it as a phenomenon in nursing. In light of this further research¹⁵ aimed to build on the earlier research by analysing the concept of missed care. This research concluded that the concept of missed nursing care constitutes an error of omission and that as such, missed nursing care could be defined as '...any aspect of required patient care that is omitted (either in part or in whole) or delayed.' (p. 1510). With missed care both identified as a prevalent problem and defined as a concept, the need for a tool to empirically measure missed care was evident. This would enable researchers to better understand the complex interplay between healthcare environments, staffing, and patient outcomes with a view to improving patient outcomes which in turn impacts on economic issues affecting healthcare delivery.

Using interview data and a review of the literature, the Missed Nursing Care Survey (MISSCARE) tool was developed¹⁶. It comprises three sections: demographic and workplace data; elements of nursing care that respondents rate according to how often cares are missed; and the reasons for missed care¹⁷. Initial psychometric testing demonstrated internal consistency and reliability although the authors noted that further testing was required¹⁸.

⁶ Kalisch, B., Doumit, M., Lee, K., & El Zein, J. (2013). Missed nursing care, levels of staffing, and job satisfaction: Lebanon versus the United States. *Journal of Nursing Administration*, 43(5), 1509 - 1517.

⁷ Clarke, S. (2006). Research on nurse staffing and its outcomes. In S. Nelson & S. Gordon (Eds) (Ed.), *The Complexities of Care: Nursing Reconsidered*, (pp. 161 - 184).

⁸ de Cordova, P. B., Phibbs, C. S., Bartel, A. P., & Stone, P. W. (2012). Twenty-four/seven: A mixed-method systematic review of the off-shift literature. *Journal of Advanced Nursing*, 68(7).

⁹ Disch, J. (2003). Is Nursing and Profession or a Commodity? *Journal of Professional Nursing*, 19(2), 57.

¹⁰ Kane, R. L., Shamliyan, T., C, M., Duval, S., & Wilt, T. (2007). Nurse staffing and quality of patient care. Evidence Report/Technology Assessment 151. Rockville, MD. In Prepared by the Minnesota Evidence-Based Practice Center under contract no. 290-02-0009 (Ed.). Minnesota: Agency for Healthcare Research and Quality.

¹¹ Cooke, H. (2006). Seagull Management and the Control of Nursing Work. *Work, Employment and Society*, 20(2), 223 - 243.

¹² Keyzer, D., Hall, J., Mahnken, J., & Keyzer, K. (1995). *Gum Tress and Windmills*. Warrnambool, Victoria: Deakin University.

¹³ Kalisch, B., 2009, "Nurse and nurse assistant perceptions of missed nursing care", *JONA*, 39 (11), pp 485-493.

¹⁴ Kalisch, B., 2006, "Missed nursing care: A qualitative study", *Journal of Nursing Care Quality*, 21 (4), pp 306-313.

¹⁵ Kalisch, B. J., Landstrom, G. L., & Hinshaw, A. S. (2009). Missed nursing care: A concept analysis. *Journal of Advanced Nursing*, 65(7), 1509 - 1517.

¹⁶ Kalisch, B. J., Landstrom, G. L., & Williams, R. A. (2009). Missed nursing care: Errors of omission. *Nursing Outlook*, 57(1), 3 - 9.

¹⁷ Kalisch, B., 2006, "Missed nursing care: A qualitative study", *Journal of Nursing Care Quality*, 21 (4), pp 306-313.

¹⁸ Kalisch, B. J., Landstrom, G. L., & Williams, R. A. (2009). Missed nursing care: Errors of omission. *Nursing Outlook*, 57(1), 3 - 9.

III. METHODS

A mixed methodology was employed using an electronic version of the MISSCARE Survey tool to collect both quantitative and qualitative data. Quantitative data in the form of forced responses to the elements of the tool were collected in the three sections: demographic and workplace data, missed nursing cares, and reasons for missed care. The qualitative data was recorded as free typed text where respondents were given the option to reply 'other'. In recognition of the fact that the tool was developed outside of New Zealand, it was checked by the researchers to determine whether any transcultural adaptations were needed to the language used. Accordingly some questions were altered slightly to reflect the New Zealand context, for example, the word 'whānau' was added after the word 'family' wherever it appeared in deference to popular Māori language usage.

Ethics approval for the study was granted by the Eastern Institute of Technology (EIT) Research Ethics and Approval Committee. The research population included all New Zealand Registered Nurses (RN) who are members of the New Zealand Nurses Organisation (NZNO). Exclusions to the study were all staff working in un-registered or un-licensed healthcare roles. The NZNO facilitated the dissemination of the electronic survey prepared through Survey Monkey™. A random sample of 2,345 New Zealand RNs (who are members of the NZNO) was sent an e-mail by the NZNO with a link to the electronic version of the MISSCARE tool. In addition, NZNO posted the survey link on their Facebook site, and published it in their monthly members' magazine (Kaitiaki Nursing New Zealand) to encourage those nurses who had received a copy of the survey, to please complete it.

A total of 199 nurses completed the survey representing an overall response rate of 8.5%. Whilst this initially looks to be a very poor response rate, a report from the NZNO indicates that of the 2,345 possible respondents, 1,473 did not open the e-mail, seven respondents unsubscribed to the NZNO, two marked the e-mail as spam, and 27 e-mails were undeliverable. Of the 845 respondents who opened the e-mail, 247 clicked the link to the survey and 199 respondents went on to complete the survey which represents a response rate of 23.6%.

IV. DATA AND ANALYSIS

Data were collected over a three week period. The first section of the MISSCARE tool related to demographic information and information relevant to the respondents' working conditions. The second section of the questionnaire comprised the missed nursing care elements of the survey in which respondents were required to indicate, on a five-point Likert-type scale, how often each care was missed in each of four shifts (mornings, afternoons, nights, and weekends). The scale ranged from never missed (1) to always missed (5). Respondents could also indicate whether the care element was not applicable; however these responses were excluded from statistical analyses so that the null reply did not skew the

examination of care that was missed. For each nursing element, respondents were afforded the opportunity to make comments in a free-type section. The final section of the survey comprised 17 possible reasons for nursing care being missed with respondents indicating on a four-point Likert-type scale how significant each reason was with possible responses ranging from not a reason (1) to a significant reason (4). There was also a "not applicable" section for each of these responses and an option for respondents to comment, in their own words about reasons for nursing care being missed.

Descriptive statistics were used to detail the demographic characteristics and working conditions of the respondents. Inferential statistics based on correlations such as Chi squares (Pearson's and Spearman's where appropriate depending on the distribution of the data), were used to explore the associations between the demographic and working condition variables. With the exception of highly correlated factors which were not included in models together, these correlations were then used to determine their use in subsequent statistical analyses.

Individual mean missed care scores for each respondent were calculated for each of the four shifts and all of the cares – giving a mean score for each missed care by shift. In addition, an overall missed care score was calculated for all the shifts and each of the cares – thus giving a missed care score for each care across all shifts.

Repeated measures ANOVAs were used to compare the mean missed care score across all cares for each shift. This was then repeated with the mean missed care score for each individual care. Pairwise comparisons with Bonferroni corrections were used to identify differences between means. Backward stepwise multiple regressions were used to explore whether certain demographic and/or working condition factors (independent variables) impacted on the overall mean missed care score (dependent variable).

Forward and backward stepwise linear regressions were used to explore the associations between the perceived reasons for missed care (included as independent variables in the model) and overall mean missed care score, the mean missed care score for each shift and the mean missed care scores for each care (included as dependent variables in the models as appropriate).

Whilst there was a rich dataset from the quantitative responses, it is the free text responses to the missed care associations that we want to explore in this paper. To put the findings into context, we summarise the demographic data and then focus on data that indicated conflict and discursive practices around what nurses were saying about being satisfied in their work, yet identifying areas that created conflict to this thought.

Demographic Data

The majority of the respondents were female (n = 187, 94%) and aged 45 years or over (n = 109, 55%). This is in line with recent NZNO statistics showing that the average age of the NZ nursing workforce is 46.44 years (Head, 2010). The single largest age group of all the respondents was those nurses aged 55-64 years and this group accounted for 27% of the respondents (n = 54).

The majority of respondents had 10 or more years of nursing experience (n = 134, 68%). Whilst the majority of the respondents were over 45 years old, 27% of respondents had just 2-9 years of nursing experience, and nearly 31% had over 30 years. This indicates that there may be two distinct populations within the older nursing workforce suggesting that there may be one group who have been in the nursing profession throughout their working lives, alongside another group of a similar age, who have either entered nursing in later life or have returned to nursing after a break mid-career.

Nurses working in both rural (n = 78, 40%) and metropolitan (n = 117, 60%) settings were represented, as were those from public (n = 148, 75%) and private (n = 49, 25%) sectors. The majority of the nurses worked more than 30 hours per week (n = 106, 53%), in a secondary or tertiary healthcare setting (n = 105, 58%), and for shifts that were 8 hours or less in length (n = 137, 57%).

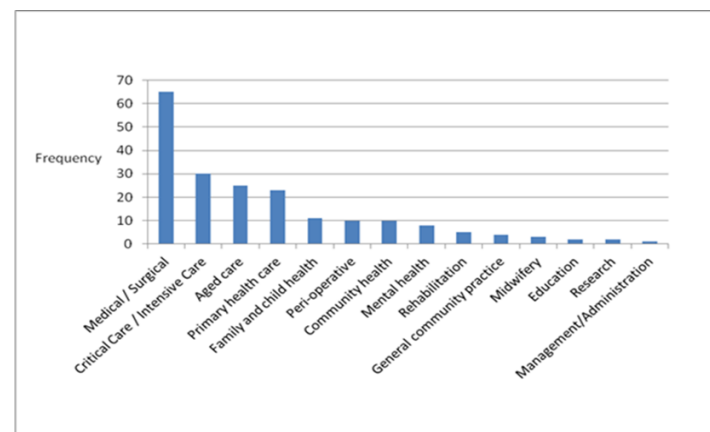
TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF THE SURVEY RESPONDENTS

Characteristic	Group	n	%
Gender	Female	187	94.4
	Male	11	5.6
Age group	< 25 y	9	4.5
	25-34 y	32	16.2
	35-44 y	48	24.2
	45-54 y	50	25.3
	55-64 y	54	27.3
	>65 y	5	2.5
Years of Experience	< 1 y	10	5.1
	2 - 9 y	54	27.3
	10 - 19 y	36	18.2
	20 - 29 y	37	18.7
	> 30 y	61	30.8
Location	Metropolitan	117	60.0
	Rural	78	40.0
Setting	Private	49	24.7
	Public	148	74.7
	Other	1	0.5
Employment Status	Full-time	106	53.3
	Part-time	87	43.7

Main area of work	Other	6	3.0
	Primary	48	26.4
	Secondary/Tertiary	105	57.7
	Aged care	25	13.7
	Other	4	2.2
Number of hours worked	< 30 h/week	47	25.5
	> 30 h/week	137	74.5
Length of shifts	Office hours	49	26.1
	Shifts ≤ 8 h	108	57.4
	Shifts > 8 h	31	16.5

The main area of practice of the survey respondents demonstrates that the single largest group worked in hospital settings, on either medical or surgical wards (n = 65, 33%). Three further areas accounted, almost equally, for a further 40% of the respondents and these were critical or intensive care (n = 30, 15%), aged care (n = 25, 13%), and primary health care (n = 23, 12%).

FIGURE 1. MAIN AREA OF PRACTICE OF THE SURVEY REPDONDENTS



When asked whether they were happy with their work schedules, the majority of respondents stated that they were (n = 150, 75%), yet in the comments section responses suggest a different view, for example, one respondent said, “*I find my schedule not to be family friendly and often take time off to accommodate commitments outside of work*” and another stated that, “*Our roster has us working mornings to afternoons in the same week I believe this is unsafe and needs to change*”. One nurse identified systems changes that did not support a work-life balance, “*centralised rostering was introduced, no personal contact which leads to unsatisfactory rosters*”. Of the 48 respondents who wrote comments, a quarter (n = 12) alluded to working night shifts being the major issue leading to dissatisfaction with their schedules.

Respondents were asked if they had, in the previous three months, worked over and above their scheduled working hours

with 88% (n = 172) reporting this. Whilst it is not clear from the question whether respondents are referring to extra minutes or hours appended to their shifts; or to extra shifts picked up on top of their contracted schedule, it is clear from the comments, that nurses are having to work beyond their shift finish time to complete their work load and that much of this work is unacknowledged and unpaid. As one respondent noted *"most shifts I am late getting away e.g. 15-30 minutes. Another commented "we do unpaid extra time.....routinely leaving 30-60 minutes late due to workloads etc."* Much of the overtime worked appears to be 'extra shifts' that are not counted as overtime or *"one or two hours at the end of each shift"* and, *"My scheduled work hours are 5 hours per day; I have been working 6 or more due to increased workload and commitments"* and, *"Due to unsafe staffing it is difficult with high number of patients to get out on time"*, and *"that is not counting the extra time at the end of the shift finishing off notes and odd jobs which is usually unpaid"*.

Not only did the majority of the respondents work more than their scheduled hours (n = 172, 88%), a large majority also reported working while they were sick, injured, stressed, or fatigued (n = 136, 69%). Nearly 20% of these respondents reported working more than six shifts in the previous three months when they were sick, injured, stressed, or fatigued, with the remainder working between one and six shifts in spite of feeling sick, injured, stressed, or fatigued. One respondent commented: *"When are you not fatigued when your (sic) on an antisocial roster with young children?"* whilst another stated, *"combination of being short staffed, poor skill mix of staff involved, and obligation to my workmates"*.

The two main reasons given for working when apparently unfit were either feeling obligated to work (n = 46, 35%) or because the unit was short staffed (n = 39, 30%). One respondent said, *"I felt an obligation to the team I work with and we were short staffed"*. Whilst only just under 10% of respondents (n = 14) cited financial reasons or lack of sick leave as being reasons for working when unfit". A few respondents used the comments section to draw attention to insufficient availability of sick leave as being a reason for working when sick, fatigued, or injured. As one nurse noted, *"we only have an allocation of sick leave, once it is gone it is gone, I work with very sick patients yet do not have the opportunity to stay at home sick when needed due to the little sick leave given."* It was also noteworthy that where 195 respondents answered the question regarding working when unfit, only 130 completed the question regarding the reason why they worked when apparently unfit to do so, and it is not entirely clear why so many respondents chose not to answer the question.

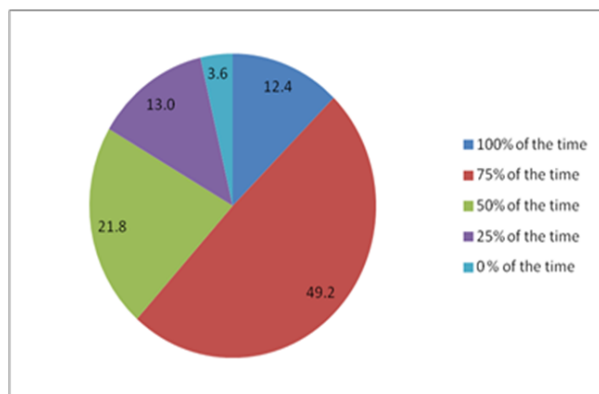
Respondents were also asked how many shifts they had missed in the previous three month period due to injury, illness, fatigue, or stress related to work with 50% (n = 98) reporting none, 21% (n = 42) just one shift, 25% (n = 50) stating between 2-5 shifts, and just over 3% (n = 7) reporting

six or more missed shifts. However, an interesting anomaly was demonstrated around the questions regarding being injured, unwell, fatigued, or stressed as in spite of the majority of respondents reporting working when apparently unfit, and 50% reporting missing at least one shift in the previous three month period, when asked about their overall health, 94% of the respondents (n = 186) rated their health as 'excellent', 'very good' or 'good', and only 3 respondents chose the 'poor' health rating. However, comments such as: *"Just exhausted from shift work and demands in work"* from one of the respondents appears to paint a bleaker picture for at least some of the survey respondents and may shed some light on respondents' perceptions of being unwell or fatigued.

Under the Multi-Employer Collective Agreement (MECA) agreement (2012 – 2015) "a full time employee shall be entitled to ten (10) working days leave for sick or domestic purposes during the first twelve months of employment, and up to an additional ten (10) working days for each subsequent twelve month period" (p. 31) (New Zealand Nurses Organisation, 2012). Despite the MECA stating that that "staff attending work unwell is to be discouraged and the focus is on patient and staff safety" (p.31), the responses suggest that there is an untold agreement that nurses should not let their colleagues down by going off duty when sick. More importantly however, the information presented suggests that managers are not enforcing the rule of sending staff home when sick.

The data collected on the perceived adequacy of staffing showed that 61% (n = 119) of the respondents thought their unit had adequate staff either all (100%) or most (75%) of the time with 17% (n = 32) of the respondents feeling that staffing was inadequate all or most of the time (Figure 2). The comments from this question however paint a different picture to this. One nurse stated, *"since starting this position there has never been a safe number of staff we are always running with them (sic) bare minimum"*, whilst another said, *"our patient acuity and requirements alter rapidly leading to a staffing shortfall"* and *"it is not always having enough staff but having enough staff with a good skill mix"*. A clear indication of the financial constraints on nursing is reflected in this comment, *"staffing numbers do not generally take into account for staff sickness, study/annual/bereavement leave or leave is allocated despite there being inadequate staff to cover rest of the duties"*. However, when asked if they planned on leaving their current position, over 70% (n = 139) stated that they had no plans to leave.

FIGURE 2. NURSES' PERCEPTION OF STAFFING ADEQUACY



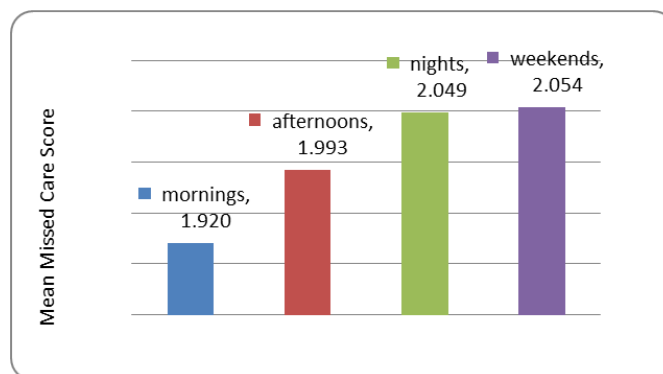
Not unexpectedly, there was a strong positive correlation between age and how long a respondent had worked as a nurse (Pearson $r = 0.733$, $P < 0.001$). However, there were also moderate negative correlations between age and question 19 which asked respondents about the number of shifts missed due to being injured, sick, stressed, or fatigued; and question 20 which asked how many shifts respondents worked when they were sick, injured, stressed, or fatigued (Spearman's $\rho = -0.154$, $P = 0.031$ and $\rho = -0.227$, $P = 0.001$, respectively). A weak positive correlation was also observed between age and working more than their scheduled hours (Pearson $r = 0.167$, $P = 0.020$); along with a moderate correlation between working more than their scheduled hours in the last 3 months and the number of shifts worked although sick, injured, stressed or fatigued (Spearman's $\rho = -0.301$, $P < 0.001$).

Moderate negative correlations were also demonstrated between years of experience as a nurse and questions 19 and 20 (Spearman's $\rho = -0.239$, $P = 0.001$, and $\rho = -0.220$, $P = 0.002$) meaning that, as years of experience increased the number of shifts missed, or worked in spite of being injured, unwell, stressed or fatigued, decreased.

Missed Cares

This section of the MISSCARE survey required respondents to indicate on a five point Likert scale how often a care was missed (1 = never, 2 = rarely, 3=sometimes, 4=often, 5 = always). With the exception of one variable (ambulation), there were no significant differences between mean missed care scores for each shift (repeated measure ANOVA, $P > 0.05$, data not shown). However there was a significant difference in ambulation missed care (Repeated measures ANOVA, $P < 0.001$) between night shift and each of the other shifts (Pairwise comparisons - Bonferroni corrected, $P \leq 0.01$).

FIGURE 3. MEAN MISSED CARE SCORE FOR EACH SHIFT ACROSS ALL CARES

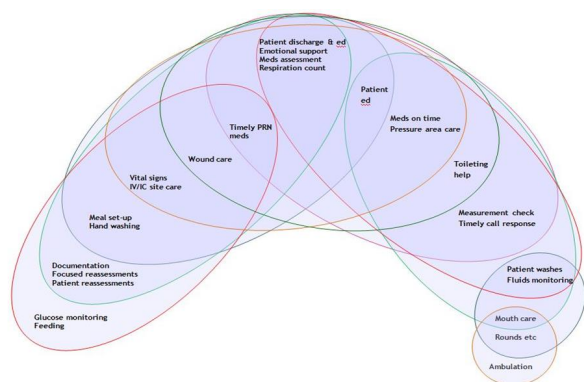


The mean missed care score across all cares for each shift demonstrates an overall low incidence of missed care. However, whilst these do not demonstrate a statistically significant difference, it would suggest that incidences of missed care are higher in those after-hours shifts represented by nights and weekends, indicating that cares are more likely to be omitted in after-hours shifts.

As there was no significant difference between shifts for missed care, all mean missed care scores were calculated across all shifts for use in subsequent analyses. Data were analysed across mean missed care scores for each care across all shifts, with significant differences detected between the means for some of the cares (Pairwise comparison - Bonferroni corrected, $P \leq 0.05$), specifically, urgent clinical situations, other departments not providing care that was required, tension or inadequate communication from the nursing team, tension or inadequate communication with shift managers, tension or inadequate communication from support departments and increased acuity of the patient workload over a shift.

Backward stepwise multiple regressions were used to explore whether demographics or working conditions impacted on the overall mean missed care score across all cares and shifts. In the first demographic model, work setting ($P = 0.001$), working hours ($P = 0.008$) and age group ($P = 0.004$) were all found to be associated with the overall missed care score. The second demographic model demonstrated that work setting ($P < 0.001$), working hours ($P = 0.033$) and age group ($P = 0.004$) along with area of practise ($P = 0.023$) and employment status ($P = 0.024$) were associated with missed care. In the working conditions model, working while unfit to work was found to be associated with the overall missed care score ($P = 0.001$). These results persisted when the demographic (regardless of which model was used) and working condition models were combined suggesting they are independent effects (data not shown).

FIGURE 4. MEAN MISSED CARE SCORES ACROSS ALL SHIFTS (LARGER DIAGRAM AT END OF PAPER)



The data also suggests that as age increases the overall missed care score decreases meaning that fewer incidences of missed care are reported as participants' age. Whilst the large amount of data cannot be presented here to demonstrate the analysis, this did indicate that there is a tendency for increasing years of experience to be associated with lower mean missed care score (ANOVA, $P = 0.094$). However, as the result did not reach statistical significance it needs to be interpreted with caution.

Other variables that were associated with lower incidences of missed care included nurses working in the private sector, in primary care settings, with full time employment status, and working during office hours. This was compared with those working in public sectors, in secondary/tertiary or aged care settings, with part time employment, and working shifts. It was also noted that those respondents who work shifts, incidences of missed care were lower if the shifts were greater than 8 hours in length. It was perhaps not surprising to find that as the number of shifts worked while sick, injured, stressed or fatigued increases so does the overall missed care score meaning that presenteeism is associated with higher incidences of missed care.

The final section of the questionnaire asked respondents to rate the perceived significance of factors that impacted on the missed nursing cares. Over half of the respondents perceived three factors to be significant reasons for missing nursing care and these were: 'increased acuity of patient workload over the shift', 'urgent clinical situations' and 'inadequate staff numbers'. A possible slight anomaly was noted whereby 60% of respondents ($n = 119$) perceived that their unit is adequately staffed 75 - 100% of the time, yet just over 50% ($n = 71$) cited an inadequate number of staff as a reason for care being missed, and 33% ($n = 43$) felt that 'inadequate number of assistant or administrative staff' was a significant reason for missed care.

Just under 50% of the respondents also thought that an 'unexpected rise in patient volume' and 'heavy discharge,

transfer and admission activity' were significant reasons for missed care, and 'inappropriate patient allocation' was deemed a moderate reason for 31% ($n = 43$) of the respondents.

The association between reasons for missed cares and mean missed care scores was explored using forward and backward stepwise linear regressions. When the overall mean missed care score was included as the dependent variable, and each of the reasons for missed care was included as the independent variables, 'urgent clinical situations' ($r = 0.530$, $P = 0.004$), 'other departments did not provide the care required' ($r = 0.479$, $P = 0.006$), 'tension or inadequate communication from the nursing team' ($r = 0.567$, $P = 0.023$) and 'tension or inadequate communication with shift managers' ($r = 0.437$, $P < 0.001$) were retained in the model. This was the case in both the forward and backward regressions.

When this analysis was repeated for each shift individually some variation was observed. The four reasons stated above were retained in the model when weekend shifts were analysed; however, in the morning and afternoon shift models three of the reasons were retained – 'urgent clinical situations', 'tension or inadequate communication from the nursing team', 'tension or inadequate communication with shift managers'; and 'tension or inadequate communication from other support departments' replaced 'other departments did not provide care required'. Furthermore, the night shift model retained 'urgent clinical situations', 'tension or inadequate communication with shift managers', and 'other departments did not provide care required'; and 'increased acuity of patient workload over the shift' replaced 'tension or inadequate communication from the nursing team'.

However, whilst the quantitative data pointed to both clinical and organisational reasons for missed care, the comments from some of the participants identified the tension and conflict that appears to exist between nurses attempting to provide the care required, and the time and human resource constraints imposed upon them:

I nurse...6 bells...maths doesn't work

Lack of back up support is due to that person's workload, it is not that they don't want to help, they are unable to because of their workload. Told by managers there are no other staff available.

I have found at times the staff mix and skill level isn't safe and staff are struggling. On some wards the nurses are stating "we just have to manage" even if it means staying late or not having meal breaks till later in the shift.

Skill mix is another concern being raised as there can be shifts "top heavy" with experienced senior staff and other shifts very clearly lacking the experience and skill level to SAFELY (emphasis in original) meet the needs of the patients.

Lack of adequate numbers of experienced carers and lack of a stable work force would be the main reasons for poor care. Our team works at 130% capacity, 100% of the time.

As a nurse, I feel we are 'forgotten' until we make an error. We work extremely hard and deliver the best care we can for our patients, but are constantly given a hard time by management and not given any credit for the work we do. We generally work short one nurse most shifts and are just expected to do so. We are never offered overtime/or any incentive to work extra shifts. There is little support in winter when we are our busiest. In the summer we are deployed to work in other wards instead of letting us enjoy working with 2-3 patients and give the ultimate nursing care. I would love to change careers as I am feeling quite disillusioned with nursing, but cannot afford to at the present time. I would not encourage anyone to do nursing as a career.

V. DISCUSSION

Despite nurses indicating their satisfaction at work, the analysis of the commentaries suggest a workforce that is stressed because they are tired, unable to meet all the cares for patients, and feeling somewhat undervalued. This sense may be aggravated by work situations that frequently see nurses burdened with a workload that does not reflect the acuity and care needs of their patients and this in turn results in nurses compensating for the lack of human resource on a shift by missing certain aspects of nursing care. It was of note that comments from the participants about adequacy of staffing was not primarily or solely about numbers of staff on shift but that, to these nurses, it also meant adequacy of experience of the staff as this is critical in delivering safe and effective nursing care to vulnerable patient populations.

Research has shown that stressed nurses contribute to an environment of anxiety and with that, a reduced ability to manage their nursing effectively, which in turn creates a feeling of insecurity with patients¹⁹. In addition, other studies have identified positive correlations between stress, burnout, and negative patient outcomes²⁰⁻²¹ indicating that stressed nurse really are unable to deliver the safe and effective nursing that their patients deserve. This is further borne out by research by Cimiotti et al. who identified burnout and high nurse to patient ratios being associated with increased incidences of urinary tract infections in patients.

When examining specific elements of missed care in our study, glucose monitoring was reported as being missed rarely, occasionally, or frequently by 48.5% of respondents for whom this monitoring was applicable. Whilst the overall mean score for this element of missed care was low (1.6) indicating that the care is rarely missed, the immediate implications of this care being missed at all are possibly both deleterious and far-reaching. It is perhaps significant that those missed care elements with the highest mean scores are those cares that when missed are unlikely to have immediate consequences – for example ambulating patients and attending ward rounds. We suggest that perhaps nurses may rationalise not immediately attending to these cares as there are unlikely to be serious consequences if a patient is ambulated in the morning, and that the afternoon staff will tend to this care. There are also interesting issues around whether nurses deliberately miss cares, or whether they delay them and they then become missed care when the nurse's time finally runs out at the end of the shift and the care has yet to be attended to. In light of respondents' comments around debilitating workloads, this may well be what is happening in nurses' working days.

Missed care coupled with tired staff who may be working when sick or injured has implications for patient outcomes, the quality of care nurses deliver, and nurses' professional practice (including careers). Moreover, the risk of creating the potential for adverse clinical events remains unacceptably high when nursing care is missed. The working-when-sick phenomenon (presenteeism) noted in this study is particularly significant because of its co-existence with increased incidences of missed care. This finding is supported by research by Letvak, Ruhm, and Gupta²², who found that presenteeism creates a significant risk to patient outcomes because of the reduced productivity of the worker. Thus, where a worker who reports as sick and is absent from work can potentially be replaced, an ill worker who presents for work, is present and therefore not replaced despite being unable to function to their full capacity. Letvak et al. suggest that this presenteeism increases the clinical risk and therefore has the potential to compromise patient care and so have a potential negative impact on patient outcome.

It is perhaps an interesting predicament created in that both the comments and the quantitative data in our study demonstrate that nurses practice presenteeism from a position of obligation to their colleagues and their patients. However, as research indicates that presenteeism in fact compromises patient care and places extra strain on a team due to reduced ability to work, then the sense of duty and obligation is misplaced and likely to place further strain on already strained nursing teams. The questions which present become why do nurses feel such a sense of duty that leads them to work when

¹⁹ Sheppy, B. (2013). Effects of Stress on Nursing Integrity. *Art and Science*, 27(25), 35 - 40.

²⁰ Cimiotti, J., Aiken, L., Sloane, D., & Wu BS, E. (2012). Nurse Staffing, Burnout, and Health Care - Associated Infection. *American Journal of Infection Control*, 40, 486 - 490.

²¹ Teng, C., Shyu, Y.-L., Chiou, W.-K., Fan, H.-C., & Lam, S. (2010). Interactive Effects of Nurse-experienced Time Pressure and Burnout on Patient Safety: A Cross-sectional Survey. *International Journal of Nursing Studies*, 47, 1442 - 1450.

²² Letvak, S., Ruhm, C., & Gupta, S. (2012). Nurses Presenteeism and its Effects on Self-Reported Quality of Care and Costs. *The American Journal of Nursing*, 112(2), 30 - 38.

apparently unfit to do so and why do nurses and nurse managers allow this to happen when patient care is clearly compromised?

Alongside of presenteeism, tiredness, and extra hours, the issue of integrity and missed care needs to be further explored. Sheppy²³ defined integrity as “consistent, habitual honesty and a coherent integration of reasonably stable, justifiable moral values, with consistent judgment and action over time” (p. 13) and noted that when nurses are stressed, their integrity is compromised. Our study showed that all reported elements of care are missed to some extent and also that respondents proffered commentary about all the elements of missed care all except three elements. Thus, although nurses have indicated that they miss blood glucose checking, feeding patients, and administering prescribed medications within 30 minutes of ordered time, in the survey response, no respondents have commented on any of these elements of missed care. As such, it is unclear what documentation, admission of this omission, or outcome of such an omission was associated with it as not a single one of the nurses who responded to this question chose to make a comment about it. The significance of a total absence of comments on these elements of care being omitted as compared with other cares, suggests that there may be a conscious realisation on the part of the respondents to the clinical risk associated with this rationalisation of care to the extent that they cannot offer any justification or reason that would explain the care being omitted and so instead opt not to try. This is perhaps further evidenced by comments from respondents about all other elements that offer some justification or further explanation for the care being missed. Some examples are detailed below:

On pressure area cares, one respondent noted that this was “dependent on workload within the emergency department at any given time”; another commented that it was “something we try to be aware of in Theatre, but sometimes miss”; and one noted “Most likely LATE rather than missed” (emphasis in original).

On patient washes, the comment “sometimes a (sic) early AM wash is planned, and only if the more important issue needs to be the priority, then the next shift get it done. PRIORITY LIKE AIRWAY, BREATHING, CIRCULATION.” (emphasis in original)

On assessing vital signs, one respondent said “This is of course dependent on patient acuity and condition. Also changes in orders from medical staff is (sic) not always clearly communicated therefore some observations are missed.”

When asked about counting respirations, one comment was “never missed on patient who is not doing as well as expected.”

On full documentation of patient condition: “It is difficult to keep up documentation as patient (sic) are constantly moved, or workload is so high or demanding. No extra time allowed to catch up. This is one area of my practice that worries me”

In response to the element regarding setting up meals for patients, one participant commented that it was “very shift-variable. Depends on number of admissions, discharges, community calls, and other unforeseen events such as patient codes or other patient distress”.

All these comments indicate that, for these nurses at least, some elements of nursing can be considered to be expendable in the face of more pressing needs. It is unclear however how that need is determined, and what contributes to the decision making in decisions to omit elements of nursing care. However, as Sheppy²⁴ contends, missing care goes against the moral and ethical standards that nurses work by and, whilst the commentaries of the respondents in this survey suggest honesty in their approach to omissions of care, the consequence of such tensions can be seen in their responses related to working sick; their dissatisfaction with rosters; skill mix of staff not meeting the needs of patients; communication with others; and overall management of their teams:

...too many new graduate nurses on including myself, however one of the new graduate's performance is far below the expectation which cause a lot more stress to other team members

Depending on the acuity of the ward sometimes another nurse would help the work load to be more evenly spread however this is not acknowledged by management and we are told to improve our time management.

I feel at present that I am burnt out and have no option to work because of family commitments. I often feel that I am unable to give my children the time they need and it is becoming more and more obvious that this is the case. I am looking at other work that won't have the extended hours attached to it that require attention and being unpaid.

The nurses on the ward work well as a team. However, the next level up, and subsequent levels do not provide effective support needed at ground level.

In addition to the factors described above, is the observation that none of commentaries in our study allude to an appreciation of the possible relationship between missed nursing care and advancing age of nurses. As noted earlier, our study demonstrated a trend in that increasing age of nurses was associated with fewer incidents of missed care ($P = 0.04$) and it is clear that his needs to be investigated further. This is especially germane in light of research by Purcell, Kutash, and

²³ Sheppy, B. (2013). Effects of Stress on Nursing Integrity. Art and Science, 27(25), 35 - 40.

²⁴ Sheppy, B. (2013). Effects of Stress on Nursing Integrity. Art and Science, 27(25), 35 - 40.

Cobb²⁵ who noted this phenomenon when examining the stress levels of nurses and patient workload.

VI. CONCLUSION

Studying what care is missed is to understand how nurses manage their work within their working environment. So much of nurses' care work has become invisible in the face of escalating costs and financially driven targets related to bed-days and the reduction of the human resource related costs of healthcare^{26 27 28} Harvey, 2010, 2011; Wolosin, Ayala, & Fulton, 2012).

More importantly, this study is about missed care that ultimately affects patients who are reliant on nurses and the care they provide. Fundamental nursing care such as prevention of pressure areas, bathing, and feeding, may be considered inconsequential yet it is well known that health budgets are significantly affected when such care omissions result in pressure ulcers, staphylococcal infections, malnutrition and dehydration that significantly increase care requirements, hospital stays, and ultimately the healthcare budget²⁹. The tension between making provision such that care can be delivered, over-arching budget constraints, patient satisfaction, and nursing autonomy is something that needs an international approach in order to provide recommendations and solutions to a balance in care that is truly patient centred, managed appropriately and is cost effective.

Further research originating from this study needs to not only focus on nurses and their ability to manage care, but also the effects that missed or rationed care has on patient outcomes.

Limitations

The major limitation to this study was the small sample size. Whilst care was taken in statistical analysis, a larger sample size would have afforded a far more accurate profile of missed care. Information collated does however provide a very

insightful overview to the issues related to managing care within an environment of cost constraint.

Given the variations between the statistical data and the free flowing text that respondents provided, in-depth interviews would have provided further clarification to some of the comments made, and the data that was emerging throughout the analysis.

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²⁵ Purcell, S., Kutash, M., & Cobb, S. (2011). The Relationship between Nurses' Stress and Nurse Staffing Factors in a Hospital Setting. *Journal of Nursing Management*, 19, 714 - 720.

²⁶ Harvey, C. (2010). Through the Looking Glass – The Politics of Advancing Nursing and the Discourses on Nurse Practitioners in Australia (Doctor of Philosophy), Flinders University of South Australia, Adelaide.

²⁷ Harvey, C. (2011). Legislative hegemony and nurse practitioner practice in rural and remote Australia. *Health Sociology Review*, 20(3), 269 - 280.

²⁸ Wolosin, R., Ayala, L., & Fulton, B. (2012). Nursing Care, Inpatient Satisfaction and Value-Based Purchasing. *Journal of Nursing Administration*, 42(6), 321 - 325.

²⁹ Ausserhofer, D., Schubert, M., Desmedt, M., Blegen, M., De Geest, S., & Schendimann, R. (2013). The association of patient safety climate and nurse-related organizational factors with selected patient outcomes: A cross-sectional survey. *International Journal of Nursing Studies*, 50, 240 - 252

TABLE 2. COMPARATIVE MEAN MISSED CARE SCORES BY SHIFTS AND ACROSS ALL SHIFTS

Care	Mean Missed Care Score \pm SE (n)				
	All shifts ²	Morning	Afternoon	Nights	Weekends
Ambulation	2.8 \pm 0.09 (110)	2.7 \pm 0.11 (102)	2.8 \pm 0.10 (100)	3.1 \pm 0.16 (60)	2.7 \pm 0.10 (99)
Rounds etc.	2.7 \pm 0.11 (121)	2.7 \pm 0.11 (115)	2.8 \pm 0.12 (103)	2.6 \pm 0.16 (62)	2.6 \pm 0.13 (89)
Mouth care	2.5 \pm 0.08 (123)	2.5 \pm 0.10 (109)	2.5 \pm 0.09 (111)	2.4 \pm 0.11 (96)	2.4 \pm 0.09 (107)
Fluids monitoring	2.3 \pm 0.09 (125)	2.4 \pm 0.10 (115)	2.4 \pm 0.10 (117)	2.2 \pm 0.10 (108)	2.3 \pm 0.10 (110)
Patients washes	2.3 \pm 0.08 (123)	2.2 \pm 0.09 (113)	2.4 \pm 0.09 (115)	2.4 \pm 0.11 (96)	2.2 \pm 0.09 (112)
Call response	2.3 \pm 0.08 (128)	2.3 \pm 0.09 (119)	2.3 \pm 0.08 (119)	2.3 \pm 0.09 (107)	2.3 \pm 0.09 (112)
Measurement check	2.2 \pm 0.11 (126)	2.2 \pm 0.11 (117)	2.3 \pm 0.11 (111)	2.4 \pm 0.12 (98)	2.3 \pm 0.11 (106)
Toileting help	2.2 \pm 0.07 (126)	2.3 \pm 0.08 (116)	2.3 \pm 0.08 (117)	2.2 \pm 0.08 (106)	2.3 \pm 0.08 (112)
Pressure area care	2.2 \pm 0.08 (122)	2.2 \pm 0.09 (112)	2.2 \pm 0.08 (114)	2.2 \pm 0.11 (105)	2.2 \pm 0.09 (107)
Medication on time	2.2 \pm 0.07 (139)	2.2 \pm 0.07 (129)	2.2 \pm 0.07 (129)	2.2 \pm 0.07 (116)	2.2 \pm 0.07 (124)
Patient education	2.1 \pm 0.07 (151)	2.1 \pm 0.08 (141)	2.2 \pm 0.08 (130)	2.3 \pm 0.11 (91)	2.2 \pm 0.09 (121)
Respiration count	2.1 \pm 0.08 (141)	2.1 \pm 0.09 (130)	2.1 \pm 0.09 (122)	2.0 \pm 0.09 (110)	2.0 \pm 0.09 (120)
Medication assessment	2.0 \pm 0.07 (147)	2.1 \pm 0.07 (137)	2.1 \pm 0.07 (134)	2.2 \pm 0.08 (118)	2.1 \pm 0.07 (125)
Emotional support	2.0 \pm 0.07 (160)	2.0 \pm 0.08 (148)	2.1 \pm 0.08 (137)	2.1 \pm 0.09 (112)	2.1 \pm 0.08 (128)
Patient discharge & education	2.0 \pm 0.07 (151)	2.1 \pm 0.07 (142)	2.2 \pm 0.08 (131)	2.3 \pm 0.11 (73)	2.2 \pm 0.08 (120)
Timely PRN meds	1.9 \pm 0.06 (134)	1.9 \pm 0.07 (124)	1.9 \pm 0.07 (122)	1.9 \pm 0.07 (110)	1.9 \pm 0.07 (119)
Wound care	1.8 \pm 0.06 (138)	1.8 \pm 0.06 (128)	1.9 \pm 0.06 (126)	2.0 \pm 0.08 (99)	1.9 \pm 0.07 (117)
Vital signs	1.8 \pm 0.06 (145)	1.8 \pm 0.07 (135)	1.9 \pm 0.07 (131)	1.8 \pm 0.07 (116)	1.9 \pm 0.07 (124)
IV/CL site care	1.8 \pm 0.07 (117)	1.7 \pm 0.07 (107)	1.8 \pm 0.07 (108)	1.9 \pm 0.09 (97)	1.8 \pm 0.07 (102)
Meal set up	1.8 \pm 0.08 (113)	1.8 \pm 0.09 (107)	1.8 \pm 0.08 (109)	1.7 \pm 0.12 (51)	1.8 \pm 0.08 (103)
Hand washing	1.8 \pm 0.06 (165)	1.8 \pm 0.06 (154)	1.8 \pm 0.07 (140)	1.8 \pm 0.07 (118)	1.8 \pm 0.07 (127)
Documentation	1.7 \pm 0.06 (157)	1.7 \pm 0.06 (146)	1.8 \pm 0.07 (135)	1.8 \pm 0.08 (118)	1.8 \pm 0.07 (129)
Focused reassessments	1.7 \pm 0.07 (154)	1.7 \pm 0.07 (143)	1.8 \pm 0.08 (134)	1.8 \pm 0.08 (116)	1.8 \pm 0.08 (125)

Patient assessments	1.7 ± 0.07 (149)	1.7 ± 0.07 (138)	1.8 ± 0.07 (132)	1.9 ± 0.08 (112)	1.8 ± 0.08 (121)
Glucose monitoring	1.6 ± 0.06 (137)	1.6 ± 0.06 (127)	1.6 ± 0.06 (124)	1.6 ± 0.07 (112)	1.6 ± 0.06 (122)
Feeding	1.6 ± 0.07 (114)	1.6 ± 0.08 (107)	1.6 ± 0.08 (108)	1.7 ± 0.12 (62)	1.6 ± 0.08 (105)
All cares		1.9 ± 0.05 (159)	2.0 ± 0.05 (146)	2.0 ± 0.05 (124)	2.1 ± 0.05 (134)

FIGURE 4. MEAN MISSED CARE SCORES ACROSS ALL SHIFTS

