

The impact of an additional nurse assistant during evening shifts on nurses' perceptions of job demands, job resources and well-being

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Abstract

Aim: Workloads and other job demands jeopardize nurses' well-being, especially during evening shifts when there are less resources than during the day. The current study aims to shed light on how the addition of a nurse assistant to ward staffing during evening shifts has an impact on nurses' perceptions of job demands, job resources, and well-being.

Design: We performed a pre-post pilot study, whereby we compared nurses' perceptions of job demands, job resources, and well-being before and after the addition of a nurse assistant to ward staffing during evening shifts.

Methods: All nurses at the ward of a top-clinical hospital ($N = 28$) completed a baseline and follow-up survey including validated measures on job demands (workload and physical demands), job resources (autonomy and task clarity), and well-being (recovery from work and sleep problems).

Results: Compared with baseline, nurses reported fewer job demands (lower workloads and fewer physical demands) and sleep problems at follow-up. No statistically significant changes in job resources (autonomy and task clarity) and recovery difficulties were found.

Conclusions: We found preliminary evidence that the addition of a nurse assistant during evening shifts could reduce workloads, physical demands, and sleep problems among nurses.

Impact: This study highlighted that heavy job demands and sleep problems associated with evening shifts may be addressed by adding a nurse assistant to the nursing team. Future studies with larger samples and a control group are needed to provide better estimates of the magnitude of the beneficial effects and of the cost-effectiveness of an intervention of this kind.

KEYWORDS

healthcare assistants, job demands, job resources, nurses, recovery, sleep problems, staffing, well-being, workloads

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TABLE 1 Cronbach's alpha (α), means, standard deviations (SD), change and standard error (SE) of job demands, job resources and well-being at baseline and follow-up ($N = 28$)

Variable:	# items	α	Baseline		Follow-up		Change ^a	(SE)
			Mean (SD)		Mean (SD)			
Job demands								
Workload	6	0.88	10.04	(2.96)	7.57	(2.66)	-2.46 [*]	(0.74)
Physical demands	3	0.88	4.79	(1.85)	3.32	(1.47)	-1.46 ^{**}	(0.41)
Job resources								
Autonomy	4	0.66	6.61	(1.81)	6.75	(1.80)	0.14	(0.45)
Task clarity	4	0.86	9.04	(2.22)	8.04	(2.70)	-1.00	(0.62)
Well-being								
Recovery difficulties	6	0.90	6.71	(3.43)	5.18	(3.19)	-1.54	(0.96)
Sleep problems	13	0.90	4.61	(4.21)	2.39	(3.01)	-2.21 [*]	(0.80)

Note:: Paired-samples T-tests were performed to assess changes between baseline and follow-up.

* $p < 0.05$,

** $p < .01$ (after Bonferroni correction).

1 | AIM

In the past decades, nurses have been facing increasing workloads due to rising healthcare demands and personnel shortages (Duffield et al., 2011). Efforts to address personnel shortages and workloads at low costs have focused on extending nurse teams with nurse assistants (Blay & Roche, 2020; Duffield et al., 2014) – also called healthcare assistants (UK), unlicensed assistive personnel (USA), support workers (the Netherlands), or assistants in nursing (Australia) (Walker, 2019). Nurse assistants can perform routine tasks (e.g., bathing, cleaning, and providing emotional support), which, in turn, can allow licensed nurses to spend more time on their core clinical tasks and decrease their workload.

While nurses may welcome the benefit of extra time for clinical tasks, they also fear an increased workload related to supervision of nurse assistants or task unclarity (Keeney et al., 2005). Therefore, it is unclear whether the addition of nurse assistants makes nurses' work more or less demanding. Nurses are already exposed to high job demands (Laschinger et al., 2012). Job demands include stressful aspects of work, for example, workload, while job resources are energizing aspects of work, for example, autonomy (Bakker & Demerouti, 2007). Nurse autonomy may especially be facilitated when nurse assistants take over nurses' basic care tasks, thereby providing nurses with more flexibility to autonomously plan and perform their other clinical tasks. Nurses may also perceive the addition of a nurse assistant to be problematic for other job resources, such as task clarity, as nurses' and nurse assistants' involvement in (different) care tasks for the same patients can raise confusion about the distribution of work. (Duffield et al., 2014) However, little is known about how nurses' perceptions of their job demands and job resources are affected when nurse assistants are added to ward staffing.

Ward staffing is especially challenging during evening shifts, when nurse-patient ratios and workloads are higher than during day

shifts. Shift work hinders recovery after work and results in more sleep problems, thereby putting nurse well-being at risk (Karhula et al., 2013). It is however unknown whether these well-being-related risks of shift work may be aggravated or reduced when nurse assistants are added during evening shifts and how nurses perceive the impact of this intervention on their job demands and job resources. Therefore, this pilot study explores how the addition of nurse assistants during evening shifts impacts nurses' perceptions of job demands, job resources, and well-being.

2 | DESIGN

This pilot study employed a pre-post study design in the Netherlands. In the Dutch healthcare setting, nurse assistants complete a two-year training, after which they perform basic care tasks (e.g., bathing) under supervision of licensed nurses. All licensed nurses ($N = 28$) at a ward of a top-clinical hospital were invited to complete a baseline survey from mid-January to mid-February 2019. From mid-February on, a nurse assistant was added to ward staffing during evening shifts. In April, all nurses were invited to complete a follow-up survey. The Medical Ethics Committee of the hospital waived ethical approval for the study.

3 | METHODS

The baseline and follow-up survey included questions about job demands, job resources, and well-being indicators; these were measured using the validated Questionnaire on the Experience and Evaluation of Work (QEEW). (Veldhoven et al., 2002) Job demands included workload and physical demands (Table 1). Job resources included autonomy and task clarity. Well-being indicators included recovery after work and sleep problems. The job

demands and resources items and the recovery after work items, were structured by a four-point scale ranging from 1 ('never')–4 ('always'); response categories for the items on sleep problems were 'yes' and 'no'. Paired-samples *t*-tests were performed to test whether job demands, job resources, and well-being improved after the intervention. Bonferroni corrections were applied to account for the fact that we performed pre/post comparisons for multiple outcomes.

4 | RESULTS

All 28 nurses (26 female, 2 male) participated in both the baseline and the follow-up survey. Compared with the baseline, nurses reported fewer job demands (lower workloads and fewer physical demands) at follow-up (Table 1). No statistically significant changes in job resources (autonomy and task clarity) were found. Regarding well-being, nurses reported significantly fewer sleep problems, but reported recovery difficulties did not change significantly.

Kolmogorov–Smirnov tests indicated that the assumption of a normal distribution was violated for physical demands and sleep problems. As a sensitivity test, we therefore also performed non-parametric Wilcoxon signed-rank tests to assess changes in these variables. These tests, that do not assume normality, also indicated that respondents reported significantly lower physical demands ($z = 3.04, p < .01$) and fewer sleep problems ($z = 2.48, p < .05$) at follow-up compared with the baseline level.

5 | CONCLUSIONS

The current pilot study provided initial evidence that the addition of a nurse assistant to ward staffing during evening shifts may reduce workload, physical demands and sleep problems among nurses. We did not find evidence that the addition of nurse assistants affects nurses' perceived task clarity or autonomy in their work. Future studies with larger samples and a control group are needed to provide better estimates of the magnitude of the effects and of the cost-effectiveness of interventions involving the addition of nurse assistants to ward staffing.

The current pilot study relied on a small sample and accounted for multiple testing and therefore the possibility of type II errors (not rejecting the null hypothesis when there is systematic change in the population) should be considered. The absence of evidence of systematic change in autonomy, task clarity, and recovery difficulties should thus by no means be interpreted as evidence that the addition of an assistant nurse to the nursing team yields no such change.

Future studies on the impact of the addition of a nurse assistant to the nursing team could also consider outcomes for patients, rather than just for nurses. Research is still inconclusive about whether or not adding nurse assistants is beneficial for patients (Blay & Roche, 2020; Twigg et al., 2016). This impact may also vary across healthcare settings, as nurse assistants' training level varies across

countries. The impact of nurse assistants thus needs to be studied systematically across healthcare systems.

6 | IMPACT

This study provided preliminary evidence that the heavy job demands and sleep problems associated with evening shifts may be addressed by extending the nursing team with a nurse assistant.

CONFLICT OF INTEREST

RS and TB report no conflict of interest.

IS is employed as a team leader at the hospital where data collection took place. She did not participate in the survey.

AUTHOR CONTRIBUTIONS

All authors have agreed on the final version and meet at least one of the following criteria (recommended by the ICMJE*):

1. substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;
2. drafting the article or revising it critically for important intellectual content.

PEER REVIEW

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