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Work environment characteristics associated with quality of care in Dutch nursing homes: A cross-sectional study

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ABSTRACT

Background: A lack of relationship between direct care staffing levels and quality of care, as found in prior studies, underscores the importance of considering the quality of the work environment instead of only considering staff ratios. Only a few studies, however, have combined direct care staffing with work environment characteristics when assessing the relationship with quality of care in nursing homes.
Objectives: To examine the relationship between direct care staffing levels, work environment characteristics and perceived quality of care in Dutch nursing homes.
Design: Cross-sectional, observational study in cooperation with the Dutch Prevalence Measurement of Care Problems.
Settings: Twenty-four somatic and 31 psychogeriatric wards from 21 nursing homes in the Netherlands.
Participants: Forty-one ward managers and 274 staff members (registered nurses or certified nurse assistants) from the 55 participating wards.
Methods: Ward rosters were discussed with managers to obtain an insight into direct care staffing levels (i.e, total direct care staff hours per resident per day). Participating staff members completed a questionnaire on work environment characteristics (i.e., ward culture, team climate, communication and coordination, role model availability, and multidisciplinary collaboration) and they rated the quality of care in their ward.
Data were analyzed using multilevel linear regression analyses (random intercept). Separate analyses were conducted for somatic and psychogeriatric wards.
Results: In general, staff members were satisfied with the quality of care in their wards. Staff members from psychogeriatric wards scored higher on the statement 'In the event that a family member had to be admitted to a nursing home now, I would recommend this ward'. A better team climate was related to better perceived quality of care in both ward types ($p \leq 0.020$). In somatic wards, there was a positive association between multidisciplinary collaboration and agreement by staff of ward recommendation for a family member ($p = 0.028$). In psychogeriatric wards, a lower score on market culture ($p = 0.019$), better communication/coordination ($p = 0.018$) and a higher rating for multidisciplinary collaboration ($p = 0.003$) were significantly associated with a higher grade for overall quality of care. Total direct care staffing, adhocracy culture, hierarchy culture, as well as role model availability were not significantly related to quality of care.
Conclusions: Our findings suggest that team climate may be an important factor to consider when trying to improve quality of care. Generating more evidence on which work environment characteristics actually lead to better quality of care is needed.

What is already known about the topic?

- Work environment characteristics have been identified as determinants of quality of care in nursing homes.
- A lack of relationship between direct care staffing levels and quality of care, as found in prior studies, underscores the

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importance of considering the quality of the work environment instead of just the staff ratios.
- Using direct care staff members as informants of the overall quality of care in nursing homes is an underexplored opportunity, as they have insight into aspects of quality of care that are not necessarily documented in medical records or resident files.

What this paper adds
- Our findings suggest that team climate may be an important factor ward managers should consider when trying to improve quality of care in their wards.
- Consistent with findings from a recent other study, total direct care staffing levels were not associated with staff-reported quality of care. This may indicate that staff satisfaction may not be improved by simply adding extra manpower.

1. Introduction

Nursing staff, including certified nurse assistants, nurse aides and registered nurses, provide most of the round-the-clock direct care in nursing homes. Even though the relationship between direct care staffing levels and quality of care (QoC) in nursing homes has been assessed in many, mostly US based, studies, the relationship is unclear as studies provide inconsistent conclusions (Backhaus et al., 2014; Bostick et al., 2006; Spilsbury et al., 2011). Worldwide, little progress has been made on establishing minimum nursing home staffing standards, whereas these might positively affect the QoC and quality of life of nursing home residents (Mueller et al., 2006). However, improvements in the QoC in nursing homes in the future cannot simply focus on numbers and educational backgrounds of direct care staff. A lack of relationship between direct care staffing levels and QoC, as found in prior studies, underscores the importance of considering the quality of the work environment instead of just the staff ratios (Backhaus et al., 2014; Zúñiga et al., 2015). Only a few studies, however, have combined direct care staffing with work environment characteristics when assessing the relationship with QoC in nursing homes (Zúñiga et al., 2015; Flynn et al., 2010). Therefore, comprehensive theoretical models, integrating direct care staffing and other work environment characteristics are scarce (Schwendimann et al., 2014), while at the same time, evidence on the relationship between work environment characteristics and QoC increases (Schwendimann et al., 2014).

Different work environment characteristics have been identified as determinants for QoC in prior studies. For example, ward environment characteristics such as positive work culture and a good team climate have been associated with better QoC in nursing homes (Schwendimann et al., 2014). Also, work processes like good communication and coordination among direct care staff have been associated with better QoC in nursing homes (Colon-Emeric et al., 2013; Temkin-Greener et al., 2009). Evidence from the hospital setting suggests that multidisciplinary collaboration, such as between nurses and physicians, might lead to better QoC as well, but evidence for the nursing home sector is still scarce (Van Bogaert et al., 2014). In the international literature, increasing attention is paid to the presence of role models as a determinant for QoC. A role model is a staff member whose work is emulated by other team members (Johnson, 2015). In countries like the US and Canada, role modeling is considered part of advanced roles such as nurse practitioner, nurse consultant or nurse specialist (Elliott et al., 2016). To our knowledge, the relationship between the presence of role models within a team and QoC in nursing homes has not been reported in the research literature. Nevertheless, we hypothesize that the presence of a role model in a ward might be associated with better QoC, as role models assist other direct care staff to deal more effectively with challenging or complex situations (Backhaus et al., 2015). Based on a literature review, we developed the model presented in Fig. 1, suggesting that work environment characteristics might mediate the relationship between staffing levels and QoC.

In this study, all these factors that possibly determine QoC in nursing homes, i.e., direct care staffing levels, ward environment characteristics (work culture, team climate), as well as work processes (communication and coordination, multidisciplinary collaboration, presence of role models) will be considered jointly when examining the relationship with QoC (Fig. 1). In addition, specific attention will be paid to the selection of QoC outcomes. Nursing home QoC is predominantly operationalized as clinical outcomes for residents such as the prevalence of falls or medication incidents. Others have utilized staff perception of QoC (Zúñiga et al., 2015), since this has been found suitable in other

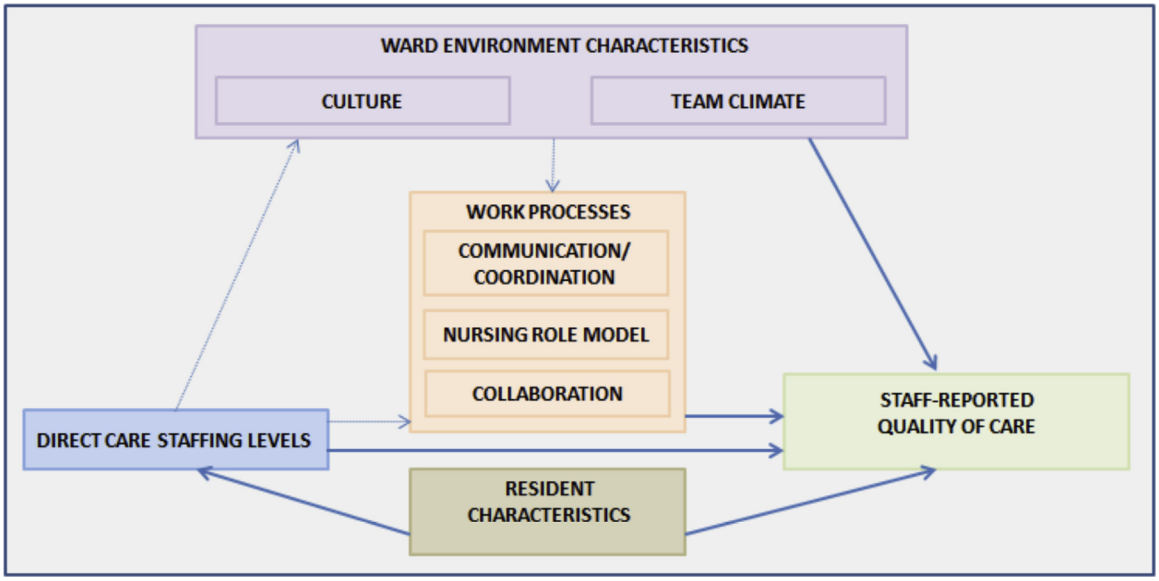

Fig. 1. Theoretical model of the relationship between direct care staffing levels, ward environment characteristics, work processes and staff-reported quality of care.
Note: Bold arrows are tested in this study.