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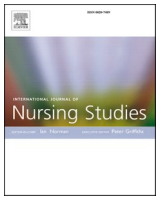

Exploring the associations of unfinished nursing care with individual, team climate, and organizational factors in nursing homes: An observational study

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ABSTRACT

Background: Care workers in nursing homes globally report failing to comprehensively provide essential nursing care. This phenomenon of unfinished nursing care has adverse impacts on residents. Inadequate staffing levels are associated with unfinished nursing care, but this alone does not explain its prevalence. Unfinished nursing care emerges in a complex reality, requiring knowledge of its associations with care workers' individual factors, team climate, and organizational factors. These associations have mainly been studied in acute care settings.
Objective: To explore associations between individual, team climate, and organizational factors and unfinished nursing care in nursing homes.
Design: An observational study utilizing two cross-sectional data sources.
Setting(s): Eighteen publicly owned nursing homes with 122 units in Finland.
Participants: Care workers (n = 503) delivering nursing care in these nursing home units.
Methods: Data were obtained from two different datasets drawn from the same nursing home units. The first dataset consisted of results at the nursing home unit level from the national Finnish Public Sector (FPS) study. The second dataset consisted of questionnaire responses from care workers related to unfinished nursing care. Multiple linear regression analysis examined the associations.
Results: Non-nursing tasks were statistically significantly associated with increased unfinished nursing care in all four care types: activities of daily living (β = 0.186, 95 % CI 0.071–0.302), caring, rehabilitation and monitoring (β = 0.260, 95 % CI 0.155–0.366), documentation (β = 0.376, 95 % CI 0.221–0.530) and social care (β = 0.487, 95 % CI 0.301–0.673). Better work-related well-being (β = −0.123, 95 % CI −0.233 to −0.012) was associated with decreased unfinished nursing care in social care. Temporary employment contracts were associated with decreased unfinished nursing care in caring, rehabilitation and monitoring (β = −0.193, 95 % CI −0.366 to −0.020) and social care (β = −0.357, 95 % CI −0.720 to −0.042). No clinically significant associations were found between unfinished nursing care and team climate factors.
Conclusions: The identified associations with unfinished nursing care in nursing homes highlight this complex issue, but the exact mechanisms remain unknown and require further investigation. Future studies should focus on nursing leadership and decision-making processes to better understand the underlying mechanisms potentially explaining unfinished nursing care.

What is already known

- Unfinished nursing care has adverse outcomes for patients and nursing staff in acute care settings.
- It is scarcely studied in nursing home settings.

What this paper adds

- Non-nursing tasks are associated with increased unfinished nursing care in all four care types.

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- Better work-related well-being is associated with decreased unfinished social care.
- Temporary employment contracts are associated with decreased unfinished nursing care in caring, rehabilitation and monitoring and social care dimensions.

1. Background

A primary goal for all nursing professionals is to provide high-quality care (Andersson et al., 2022a). Despite this, registered nurses in acute care (Jones et al., 2015) and care workers in nursing homes (Ludlow et al., 2021a) report globally failing to provide fully essential nursing care activities. This phenomenon has been studied from several approaches, such as missed care, implicitly rationed care, and care left undone (Jones et al., 2015). The current study uses the implicit rationing approach, defined as "*the withholding of or failure to carry out necessary nursing measures for patients due to a lack of nursing resources (staffing, skill mix, time)*" (Schubert et al., 2007). The study uses the term "unfinished nursing care", defined as a process starting from a problem (e.g., inadequate resources) and moving though nurses' decision-making to an outcome where individuals in social or healthcare do not receive the necessary care (Jones et al., 2015).

Unfinished nursing care has mostly been studied in acute care settings (Ludlow et al., 2021a). However, these results are not fully applicable to nursing homes due to significant differences, such as staffing structure (Ludlow et al., 2021a). In nursing homes, fewer employees are registered nurses, and employees' educational backgrounds vary more (Finnish Institute of Health and Welfare, 2024). Therefore, this study uses the broad term "care worker", referring to employees involved in residents' care, including registered nurses, practical nurses, and nursing aides. Their duties involve attending to and assisting with residents' basic needs, such as bathing, eating, mobility, and promoting social care (Finnish Institute of Health and Welfare, 2024).

The frequency of unfinished nursing care in nursing homes varies by measurement method (Ludlow et al., 2021a). It also differs between types of care, with documentation and social care more often left unfinished compared to activities of daily living and caring, rehabilitation, and monitoring (Renner et al., 2022). For instance, in Swiss nursing homes, the most frequently unfinished activities were setting up or updating care plans, scheduling activities with residents, and responding promptly to resident calls. Over 40 % of care workers reported these activities as often or sometimes unfinished (Renner et al., 2022). Similar findings have been reported in Swedish (Andersson et al., 2022a) and Norwegian (Norman and Sjetne, 2019) nursing homes.

In acute care settings, unfinished nursing care is associated with several adverse consequences for patient safety and quality of care, including post-operative mortality, inpatient mortality, falls, nosocomial infections, medication errors, pressure ulcers, and decreased patient satisfaction (Kalánková et al., 2020). While research on resident outcomes of unfinished nursing care in nursing homes is limited, an association with urinary tract infections has been found (Ludlow et al., 2021a). Additionally, care workers' perceived better quality of care is linked to less unfinished nursing care (Zúñiga et al., 2015a).

Unfinished nursing care also impacts nurses (Jones et al., 2015), placing them in ethically challenging situations where they must decide which care activities to prioritize (Ludlow et al., 2021b). Factors contributing to this decision-making include high workload, inadequate staffing, unexpected events, and conflicting demands (Ludlow et al., 2021b). Under overwhelming workloads, care workers must prioritize residents' needs (Ludlow et al., 2021b), conflicting with their personal and professional values (Suhonen et al., 2018). This decision-making is influenced by residents' care needs and goals, care workers' perceived role responsibilities, anticipation of consequences, and perceived teamwork and peer support (Ludlow et al., 2021b).

Despite the diminished outcomes, the underlying reasons for unfinished nursing care are not fully understood. Resource shortages, particularly staffing levels in nursing homes, are a well-known factor (Ludlow et al., 2021a). However, most unfinished nursing care cannot be attributed solely to low staffing (Griffiths et al., 2018). Studies have identified individual, unit-level, and organizational factors associated with unfinished nursing care. Andersson et al. (2022b) found that care workers' experiences of not feeling mentally or physically well, higher levels of burnout, and lower job satisfaction are linked to increased unfinished nursing care in communal older people's care and nursing homes. Additionally, in acute care, high chronic fatigue, low intershift recovery (Crincoli et al., 2024), lower occupational satisfaction (Stemmer et al., 2022) and fewer decision-making opportunities (Albsoul et al., 2023) are associated with increased unfinished nursing care. Conversely, higher commitment among nurses in acute care is linked to decreased unfinished nursing care (Babaei et al., 2024).

Unit-level factors such as a more favorable work environment, higher level of social capital (Song et al., 2020), and higher multidisciplinary collaboration are associated with less unfinished nursing care in nursing homes (Norman and Sjetne, 2024). Conversely, poor communication in the team (Andersson et al., 2022b), experienced work stress due to workload and due to conflict and a lack of recognition (Zúñiga et al., 2015b) and exposure to bullying (Hogh et al., 2018) are linked to increased unfinished nursing care. However, results regarding work environment characteristics in nursing home settings are partially contradictory, as Norman and Sjetne (2024) found that better teamwork was associated with lower levels of unfinished nursing care, whereas Zúñiga et al. (2015a) reported both lower and higher levels depending on the type of care. Song et al. (2020) discovered that better perceived organizational and work unit culture, generally reflecting a supportive work culture, was associated with higher levels of unfinished nursing care. Campagna et al. (2022) did not find this association to be statistically significant. However, it is worth noting that better culture was one aspect of a more favorable work environment, which overall was associated with lower levels of unfinished nursing care (Song et al., 2020).

From an organizational perspective, associations between non-nursing tasks (Bekker et al., 2015) and unfinished nursing care have been found in acute care settings but not in nursing homes. In acute care, time spent on non-nursing tasks (e.g., cleaning patients' rooms) detracts from essential nursing care (Bekker et al., 2015). Moreover, the knowledge about the role of nurse leaders in relation to unfinished nursing care is limited (McCauley et al., 2020). However, nurse leaders are perceived to influence several factors related to unfinished nursing care, such as the work environment and resources (McCauley et al., 2020). In nursing home settings, Song et al. (2020) found that effective leadership is one aspect of a more favorable work environment, which overall was associated with lower levels of unfinished nursing care. Similarly, Zhang et al. (2022) discovered an association between care workers' self-perceived leadership ability and less unfinished nursing care. On the other hand, findings are partly contradictory, as Norman and Sjetne (2024) and Zúñiga et al. (2014) did not find such an association. A systematic review on the effectiveness of nursing leadership found that transformational leadership positively impacts organizational culture, nursing staff outcomes, and patient satisfaction and safety (Hult et al., 2023). Therefore, this study examines the association between transformational leadership and unfinished nursing care as an organizational factor. Additionally, the type of employment contract has been associated with unfinished nursing care in nursing homes, as care workers with permanent contract reported higher levels of it (Campagna et al., 2022).

Reducing unfinished nursing care is essential for enhancing the safety and the overall quality of care in nursing homes (Ludlow et al., 2021a) and improving outcomes for residents and care workers. Simply increasing the number of care workers is challenging due to shortages and economic constraints (Papastavrou and Suhonen, 2021). Unfinished nursing care arises in a complex reality, requiring a deeper understanding of its associations, especially in nursing homes. This study

addresses this gap by focusing on care workers' individual factors, team climate, and organizational factors. Research on these associations is limited (Andersson et al., 2022b), and partially contradictory (Andersson et al., 2022b; Norman and Sjetne, 2024; Zúñiga et al., 2015b).

2. Aim

The aim of this study is to explore the associations between individual factors, team climate, and organizational factors and unfinished nursing care in nursing homes.

3. Methods

3.1. Design

An observational study utilizing two cross-sectional data sources.

3.2. Study setting and sampling

In Finland, approximately 46,000 older people reside in nursing homes that provide 24/7 long-term or short-term care (Finnish Institute of Health and Welfare, 2024). Female residents spend an average of 1.5 years in long-term care facilities, whereas male residents spend approximately 10 months (Korhonen et al., 2024). Most residents have dementia and need help with daily activities like bathing and eating (Finnish Institute of Health and Welfare, 2022). According to the Finnish Institute of Health and Welfare (2024), care workers in Finnish nursing homes are mainly practical nurses (70 %), registered nurses (7 %), or nursing aides (10 %). The majority are female (96 %) and have permanent contracts (82 %) (Kröger et al., 2018). Practical nurses complete a 2–3-year Vocational Qualification in Social and Health Care (Finnish National Agency for Education, 2025). Registered nurses earn a Bachelor of Health Care degree in 3.5 years (Finnish Nurses Association, 2025). Nursing aides undergo about 10 months of training, gaining basic care skills (Ministry of Social Affairs and Health, 2025). Job roles differ among these professionals. Registered nurses handle medical needs (e.g., wound care, consulting doctors) (Finnish Institute of Health and Welfare, 2022). Practical nurses assist with these tasks if no registered nurse is available, although their primary responsibility remains basic care (Finnish Institute of Health and Welfare, 2022). Nursing aides have more limited roles and cannot independently administer medications (Ministry of Social Affairs and Health, 2025).

This study targeted care workers in 18 publicly owned nursing homes in a major city providing social, rescue, and health services in a metropolitan area of Finland. These nursing homes consist of 152 units, mainly offering long-term care, and employ 2492 care workers. The number of care workers per nursing home ranged from 38 to 278, with an average of 131 per nursing home and 16 per unit. The survey collected responses from 122 units. The selected nursing homes had a total of 2118 residents in either long-term or short-term care. The number of residents per nursing home ranged from 35 to 340. Inclusion criteria required employees to be delivering nursing care during the data collection period and be able to read and understand Finnish.

3.3. Data collection

The data for this study were derived from two separate surveys, forming two datasets. Both datasets were collected from the same nursing homes and units. The first dataset was collected in the fall of 2022, and the second from October 2022 to April 2023. The results of the first dataset were merged with the second dataset, which serves as the primary data for this study.

The first dataset consisted of results from the work well-being survey coordinated by the Finnish Institute of Occupational Health as a part of the *Psychosocial Factors and Health: The Finnish Public Sector* (FPS) study. This study has provided insights into the work and communities of Finnish municipal and welfare sector employees for nearly two decades (FIOH, 2024). The Finnish Institute of Occupational Health sent the questionnaire link via email to care workers in the selected nursing homes who had permanent or more than six-month contracts, and worked over 50 % of full-time hours (N = 1915). If a care worker lacked a functional work email, the questionnaire was mailed to their home with a return envelope. Care workers received a code to enter on the questionnaire, enabling linkage to the correct nursing home units without collecting additional background information. The Finnish Public Sector study produced data on unit-level factors regarding team climate (Table 1), which describes the shared perceptions of policies, practices, and procedures among team members (Macinnes et al., 2020). The research results were provided as percentages at the unit level (N = 152) from nursing homes.

The second dataset consisted of individual care workers' responses from a survey related to unfinished nursing care, providing data on individual and organizational factors (Table 1). Individual factors refer to care workers' personal experiences of health status and work-related issues, while organizational factors relate to non-nursing tasks, leadership, and employment. Data were collected via electronic or paper questionnaires. Care workers received a link to the electronic questionnaire from their nurse leaders via email, along with an informed consent form. Paper forms were distributed in the nursing home unit offices. Participation was voluntary and anonymous. Completed surveys were mailed to the researcher's office in sealed envelopes. Researchers reminded nurse leaders three times during the response period to ensure employees were aware of the opportunity to participate.

3.4. Measures

Unfinished nursing care was measured using the Finnish version of the BERNCA-NH instrument (Hackman et al., 2023; Zúñiga et al., 2016). This instrument is tailored for all care workers in nursing homes, ensuring a valid understanding of unfinished nursing care (Zúñiga et al., 2016). The Finnish version was translated and back-translated by two independent translators and pilot tested on 33 care workers in Finnish nursing homes, with no modifications needed (Hackman et al., 2023). The instrument included 21 typical nursing care activities categorized into four subscales: 1. Activities of daily living, 2. Caring, rehabilitation, and monitoring, 3. Documentation, and 4. Social care (Table 2). Participants indicated how often they had not performed or had only partly performed these necessary care activities due to lack of time or high workload in the last seven working days. Response options were: "Care was not necessary" (1), "Never" (2), "Seldom" (3), "Sometimes" (4), "Often" (5), and "Not within my field of responsibility" (6). Response options "Care was not necessary" and "Not within my field of responsibility" were classified as non-valid and recoded as missing values. The remaining valid responses were rescaled as "Never" (1), "Seldom" (2), "Sometimes" (3), "Often" (4). Mean sum variables were formed for each subscale using these valid rescaled responses. Higher scores indicate a greater amount of unfinished nursing care (Zúñiga et al., 2016).

The BERNCA-NH instrument has been validated and found reliable in German, French, and Italian (Zúñiga et al., 2016). It has also been adapted for Swedish (Andersson et al., 2023) and Norwegian (Norman and Sjetne, 2019) nursing homes, with good psychometric properties. Although the Finnish version has not yet been validated, a previous study (Hackman et al., 2023) reported good internal consistency (Cronbach's alpha 0.92). In this study, Cronbach's alphas were 0.85 for the subscale of activities of daily living, 0.90 for caring, rehabilitation and monitoring, 0.83 for documentation and 0.93 for social care.

The individual factors were explored using four variables (Table 1). Participants rated their *commitment* (two items), *work-related well-being* (three items), *health status*, and *influence on their work* (two items) on scales of 0–10 and 1–5, respectively, in the survey on unfinished nursing care.

Table 1
Two datasets of the study.

First dataset: The Finnish Public Sector (FPS) study				
	Variable	Items included	Scale	%
Team climate factors	Participative safety	Interaction between team members in a participative and interpersonally non-threatening climate	Original scale 1–5 (totally disagree to totally agree) Value represents the % of 4–5 responses (ranging from 0 to 100 %)	67.03 %
	Support for innovation	Team commitment to high performance standards, shared vision achievement, readiness for continuous performance evaluation and improvement	Original scale 1–5 Value represents the % of 4–5 responses (ranging from 0 to 100 %)	45.10 %
	Task orientation	Encouragement and practical support of attempts to introduce new and improved ways of doing things in the team	Original scale 1–5 Value represents the % of 4–5 responses (ranging from 0 to 100 %)	49.28 %
	Positive atmosphere	"My work is valued at the workplace", "Our workplace is supportive", "People at our workplace can truly be trusted", "Our workplace fosters an open atmosphere", "Gossip and envy occur at our workplace" (reverse coded), "I experience discrimination at our workplace" (reverse coded), "Bullying occurs at our workplace" (reverse coded), "People on sick leave are easily stigmatized as slackers" (reverse coded)	Original scale 1–5 Value represents the % of 4–5 responses (ranging from 0 to 100 %)	53.80 %
	Bullying		Original scale Yes/No Value represents the % of "Yes" responses (ranging from 0 to 100 %)	13.28 %
	Low ethical burden	Ethically challenging situations, actions contrary to rules or norms, actions contrary to personal values	Original scale 1–5 Value represents the % of 4–5 responses (ranging from 0 to 100 %)	39.40 %

Second dataset: Survey related to the unfinished nursing care				
Individual factors	Commitment	Commitment to workplace, commitment to the profession	0–10 (no commitment at all to full commitment)	8.25 (1.81)
	Work-related well-being	Well-being at work, job satisfaction, appreciation of own work	0–10 (the worst possible to the best possible)	7.88 (1.49)
	Health status		0–10 (the worst possible he to the best possible)	7.92 (1.51)
	Influence on own work	Opportunity to participate in decision-making at work, opportunities to advance in career within organization	1–5 (very little to very much)	2.96 (1.00)
Organiza-tional factors	Non-nursing tasks	Cooking and serving food, dishwashing, cleaning, cleaning care tools, laundry, secretarial tasks, organizing or transporting residents, taking out the trash	1–4 (never to often)	2.93 (0.71)
	Transformational leadership scale	Subscales: leadership ethics, managing nursing process, feedback and rewards, professional development	1–5 (totally disagree to totally agree)	4.00 (0.85)
	Employment contract		Permanent/temporary	
	Shift work		Daytime job/shift work	

Team climate factors were assessed using six variables from the Finnish Public Sector study (Table 1). *Participative safety*, *support for innovation*, and *task orientation* from the Team Climate Inventory (TCI) instrument (Kivimäki and Elovainio, 1999), were rated on a scale of 1–5. *Positive atmosphere* was evaluated with eight items on a scale of 1–5. *Bullying* was measured as the experienced workplace bullying (yes/no). *Ethical burden* was assessed with three items on a scale of 1–5, reverse coded as low ethical burden. The results of the team climate factors were provided in a pre-processed format, indicating the percentage of respondents who selected response options 4 or 5, as well as the percentage who responded 'Yes' to the bullying item.

Organizational factors were explored using four variables from the survey on unfinished nursing care (Table 1). *Non-nursing tasks* were evaluated with eight items on a scale of 1–4, based on how often participants performed these tasks over the past seven working days. Items related to non-nursing tasks were developed based on previous research (Hackman et al., 2025). *Transformational leadership* was assessed with the Transformational Leadership Scale (TLS) instrument (Kvist et al., 2013), which measures nurses' perceptions of nurse leader practices. It includes 43 items from subscales of leadership ethics, managing the nursing process, feedback and rewards, and professional development. In a previous study (Kvist et al., 2013), the TLS instrument had Cronbach's alpha values of 0.91 to 0.97. In this study, the Cronbach's alpha for the entire instrument was 0.98. *Employment contracts* and *working hours* were also included in the organizational factors.

3.5. Data analysis

Descriptive statistics (means and standard deviations) described participants' background characteristics and study variables. Each variable of interest had 0.2–9.1 % of missing values. In addition, since the BERNCA-NH response options "Care was not necessary" and "Not within my field of responsibility" were recoded as missing values, the frequency increased to 35.5 % (Table 2). Internal consistency of the BERNCA-NH and TLS instruments were assessed using Cronbach's alphas, with a threshold of 0.7 indicating adequacy (Field, 2018).

Correlations between variables were examined using Pearson's correlation coefficient. Spearman's correlation coefficient was used for organizational factors, as two variables were dichotomous. The analysis aimed to detect possible multicollinearity. A threshold of ±0.7 indicated a strong correlation, ±0.40–0.69 a moderate correlation, and below ±0.39 a weak correlation (Schober and Schwarte, 2018).

The data were analyzed using multiple linear regression to examine the association between dependent variable and several independent variables (Field, 2018). Before the regression analysis, assumptions were tested, and multicollinearity was assessed using the variance inflation factor (VIF), with a threshold of 10 indicating significant multicollinearity risk (Field, 2018). Nominal variables were coded to dummy variables for regression analysis: gender (0 = female, 1 = male), employment contract (0 = permanent, 1 = temporary), and shift work (0 = daytime job, 1 = shift work). Age and education level were treated as continuous variables. Age, gender, and education were controlled in the regression analysis. Data from the Finnish Public Sector study (first

Table 2
Descriptive statistics of the BERNCA-NH instrument by subscales.

	Mean	SD	Valid responses				Non-valid responses recoded as missing values		
			Never %	Seldom %	Some-times %	Often %	Activity not necessary	Not within my field of responsibility	Missing
Activities of daily living	1.85	0.73							
Sponge bath/skin care	1.69	0.97	36.2	21.0	22.8	5.2	2.0	12.2	0.6
Oral hygiene	2.28	1.02	26.2	22.6	29.0	10.8	0.8	10.4	0.2
Assist to drink or eat independently	1.67	0.92	52.6	19.2	13.2	5.0	1.0	8.6	0.4
Provide food for hungry residents between meals	1.40	0.75	63.6	15.0	5.2	3.0	2.2	9.8	1.2
Mobilization/change of position	1.90	0.94	39.8	31.2	15.4	7.4	0.8	5.2	0.2
Caring, rehabilitation, and monitoring	1.98	0.69							
Leave a resident in urine/stool longer than 30 min	2.04	1.08	37.6	22.6	16.6	12.2	0.2	10.0	0.8
Emotional support	2.09	0.98	33.2	29.4	23.8	9.0	0.6	2.4	1.6
Necessary conversation with resident or family	1.89	0.92	40.8	31.8	17.8	6.0	1.2	1.6	0.8
Toileting/continence training	1.90	0.95	39.6	28.6	17.0	6.8	0.8	6.0	1.2
Activating or rehabilitating care	2.05	1.00	33.8	32.0	17.0	10.8	0.6	4.4	1.4
Monitoring residents as care workers felt necessary	2.36	1.11	27.4	24	23.2	19.2	0.6	4.2	1.4
Monitoring of confuse/cognitively impaired residents & use of restraints/sedatives	1.57	0.89	56.4	17.5	9.2	4.9	3.2	8.4	0.4
Keep residents waiting who rung	2.54	1.13	22.5	21.1	24.1	24.1	0.8	6.4	1.0
Administering prescribed medication at the recommend time	1.95	0.98	35.3	27.1	16.2	7.6	0.6	11.8	1.4
Wound care	1.39	0.67	56.2	17.7	4.8	1.2	5.4	13.1	1.6
Documentation	2.22	0.95							
Studying care plans at the beginning of shift	2.20	1.10	33.5	22.5	21.5	15.3	1.4	5.0	0.8
Set up or update residents' care plans	2.35	1.12	25.9	17.9	21.9	16.3	4.2	12.0	1.8
Documentation of care	2.14	1.08	34.3	27.1	18.3	14.5	0.8	3.8	1.2
Social care	2.43	1.11							
Scheduled single activity with a resident	2.57	1.13	20.1	19.1	22.1	22.9	6.2	7.8	1.8
Scheduled group activity with several residents	2.35	1.20	25.3	16.3	13.2	19.1	9.2	15.1	1.8
Cultural activity for residents with contact outside of nursing home	2.36	1.24	23.3	13.1	9.6	18.5	11.6	22.1	1.8

dataset) were merged with the survey data related on unfinished nursing care (second dataset) using the nursing home unit identification code.

The multiple linear regression analyses were conducted with types of unfinished nursing care (activities of daily living; caring, rehabilitation and monitoring; documentation; social care) as dependent variables. All independent individual, team climate and organizational variables were entered simultaneously. The level of statistical significance was set at <0.05 (Field, 2018). Data analyses were performed using SPSS Version 29.0.

3.6. Ethical considerations

According to Finnish legislation and the Finnish National Board on Research Integrity this study did not require an ethical committee review or ethical assessment (Finnish National Board on Research Integrity, 2019). The Institutional Review Board granted research approval (HEL-2022-006873), including approval from the organization owning the selected nursing homes for their participation and the use of pseudonymized data from the Finnish Public Sector study.

Participants were informed at the beginning of both surveys that participation was voluntary and they could withdraw at any time without consequences. Informed consent was obtained at the start of both surveys, and participants could inquire about additional information. The studies were conducted anonymously, ensuring participants could not be identified.

4. Results

4.1. Descriptions of study participants and variables

A total of 503 employees from 18 nursing homes participated in the survey on unfinished nursing care (the dataset 2), with a response rate of 20.2 % (N = 2492). Participants per nursing home ranged from 6 to 126 (mean 27). The majority were female (90.2 %, n = 449), with 8.0 % male (n = 40). Most were practical nurses (63.8 %) or registered nurses (22.2 %), with nursing aides (2.4 %) and other professional (11.6 %), making up the rest. The mean age was 45.1 years (SD 12.69), with 6.3 years (SD 6.83) of experience in the current nursing home and 14.1 years (SD 10.80) in the profession. Most had permanent employment contracts (84.5 %), with fewer temporary contracts (15.5 %). Of the participants, 43.5 % worked two shifts (day and evening), 39.1 % three shifts (day, evening, and night), and 17.4 % daytime jobs. Background characteristics were not requested in the first dataset (Finnish Public Sector study), but the response rate was 62 % (n = 1187). Both surveys were targeted at the same care workers, though only permanent employees and those with at least six-month temporary contracts were included in the Finnish Public Sector study.

The mean score for unfinished nursing care activities in the Finnish version of the BERNCA-NH instrument was 2.02 (SD 0.68). Unfinished nursing care was more frequent in the subscales of social care and documentation, and less in activities of daily living and caring, rehabilitation and monitoring (Table 2).

Table 1 presents the results for individual, team climate, and organizational factors. From individual factors, assessments of commitment, work-related well-being, and health status were relatively aligned. Assessments of influence on your own work were slightly above the midpoint of the scale. Regarding team climate, 67.0 % of participants from the first dataset experienced good levels of participative safety, 45.1 % support for innovation, and 49.3 % task orientation. A positive team atmosphere was experienced by 53.8 %, while 13.3 % reported bullying. Additionally, 39.4 % reported a low ethical burden. For organizational factors, participants from the second dataset assessed nurse leaders as employing a transformational leadership style. The most common non-nursing tasks were cooking and serving food (mean 3.55, SD 0.92), laundry (mean 3.41, SD 0.98), and dishwashing (mean 3.06, SD 1.11) based on the second dataset. Correlations between the study variables are presented in the Supplementary file 1.

4.2. Associations between individual, team climate, and organizational factors and unfinished nursing care

Among individual factors, work-related well-being (β = −0.123, 95 % CI −0.233 to −0.012) was statistically significantly negatively associated with unfinished nursing care in social care (Table 3), indicating that better work-related well-being was linked to decreased unfinished nursing care in this area. Other individual factors had either non-significant associations or very small unstandardized beta coefficients across all types of unfinished nursing care. For team climate factors (Table 3), some were significantly associated with unfinished nursing care in different care types, but the unstandardized beta coefficients were also very small.

Regarding organizational factors (Table 3), non-nursing tasks were statistically significantly positively associated with unfinished nursing care across all care types. The largest unstandardized beta coefficients were between non-nursing tasks and social care (β = 0.487, 95 % CI 0.301–0.673) and documentation (β = 0.376, 95 % CI 0.221–0.530). Statistically significant positive associations were also found between non-nursing tasks and in activities of daily living (β = 0.186, 95 % CI 0.071–0.302) and caring, rehabilitation and monitoring (β = 0.260, 95 % CI 0.155–0.366). This indicates that performing non-nursing tasks was associated with increased unfinished nursing care in all care types. Temporary employment contracts were statistically significantly negatively associated with unfinished nursing care in caring, rehabilitation and monitoring (β = −0.193, 95 % CI −0.366 to −0.020) and social care (β = −0.357, 95 % CI −0.072 to −0.042), indicating a decrease in unfinished nursing care. Transformational leadership style and shift work were not statistically significantly associated with unfinished nursing care in any care type.

5. Discussion

This study provides new insights into the direct associations between individual, team climate, and organizational factors and unfinished nursing care in nursing homes. It found that non-nursing tasks were the most significant factors associated with increased unfinished nursing care across all care types. Conversely, better work-related well-being and temporary employment contracts were associated with reduced unfinished nursing care. This topic has been minimally studied in this context, particularly in Europe and the Nordic countries (Ludlow et al., 2021a). To our knowledge, this is the first study to evaluate the associations between transformational leadership, non-nursing tasks, and unfinished nursing care in nursing homes.

In this study, unfinished nursing care was most common in social care activities and least common in activities of daily living, similar to findings from Switzerland, Norway, Sweden, and Finland (Andersson et al., 2022a; Hackman et al., 2023; Norman and Sjetne, 2019; Zúñiga et al., 2015b). Care workers prioritize immediate safety and physical well-being, often neglecting social care (Zúñiga et al., 2015b). Ludlow et al. (2021b) noted that staff in aged care facilities view social care as important but not part of their direct role, which may explain its lower prioritization. Providing social care is essential for meeting residents' social needs, reducing boredom, and enhancing overall well-being and quality of life (Tierney et al., 2023). A lack of social care and interaction can significantly contribute to loneliness (Lapane et al., 2022). Loneliness is a common experience among nursing home residents and has been consistently linked to adverse mental health outcomes, such as depression and suicidal ideation, as well as physical health outcomes, including frailty, in older adults living in long-term care settings (Lapane et al., 2022). These findings highlight the need to reduce unfinished nursing care related to social care to mitigate its negative effects.

Table 3
Multiple linear regression analysis by subscales of the BERNCA-NH instrument.

Intercept	Activities of daily living		Caring, rehabilitation and monitoring		Documentation		Social care	
	β	95 % CI	β	95 % CI	β	95 % CI	β	95 % CI
Individual factors								
Commitment	−0.064*	−0.114 to −0.014	−0.027	−0.073–0.019	−0.006	−0.073–0.061	−0.019	−0.100–0.062
Work-related well-being	−0.028	−0.097–0.041	−0.062	−0.125–0.001	−0.094*	−0.187 to −0.002	−0.123*	−0.233 to −0.012
Health status	−0.049	−0.103–0.005	−0.060*	−0.110 to −0.010	−0.054	−0.128–0.019	−0.054	−0.141–0.034
Influence on own work	−0.098*	−0.179 to −0.017	−0.038	−0.112–0.037	−0.017	−0.128–0.019	−0.044	−0.170–0.090
Team climate factors								
Participative safety	−0.004	−0.012–0.004	−0.006	−0.013–0.002	0.001	−0.010–0.012	−0.013*	−0.026–0.000
Support for innovation	−0.005	−0.014–0.004	−0.004	−0.012–0.004	−0.006	−0.017–0.006	−0.008	−0.022–0.006
Task orientation	0.004	−0.006–0.013	0.001	−0.007–0.010	0.004	−0.009–0.016	0.009	−0.006–0.024
Positive atmosphere	0.011*	0.001–0.021	0.013**	0.004–0.022	0.010	−0.037–0.008	0.018*	0.002–0.033
Bullying	0.003	−0.014–0.020	0.006	−0.009–0.022	−0.014	−0.037–0.008	0.003	−0.034–0.030
Low ethical burden	0.010*	0.002–0.018	0.004	−0.004–0.011	−0.003	−0.014–0.007	0.008	−0.005–0.021
Organizational factors								
Non-nursing tasks	0.186**	0.071–0.302	0.260***	0.155–0.366	0.376***	0.221–0.530	0.487***	0.301–0.673
Transformational leadership style	−0.063	−0.160–0.034	−0.074	−0.164–0.016	−0.066	−0.196–0.064	−0.009	−0.168–0.150
Temporary employment contract[a]	−0.042	−0.233–0.149	−0.193*	−0.366 to −0.020	−0.170	−0.427–0.086	−0.357*	−0.720 to −0.042
Shift work[b]	−0.219	−0.447–0.008	−0.047	−0.252–0.159	−0.158	−0.461–0.144	−0.336	−0.702–0.029
Adjusted r-square	0.155		0.187		0.122		0.154	

β = unstandardized beta, CI = confidence interval.
[a] 0 = permanent, 1 = temporary.
[b] 0 = daytime job, 1 = shift work.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$. Controlled for participants' age, gender, and education.

Non-nursing tasks were most strongly associated with increased unfinished nursing care across all care types. Care workers frequently reported cooking, serving food, doing laundry, and washing dishes. According to the Finnish Institute of Health and Welfare (2022), practical nurses in Finnish nursing homes spend about 30 min daily on these tasks, registered nurses 13 min, and nursing aides 1 h and 41 min. This time is significantly higher compared to the 1–6 min spent on promoting residents' functional ability, rehabilitation, outdoor activities, and scheduled social activities (Finnish Institute of Health and Welfare, 2022). It is paradoxical that care workers report unfinished nursing care while simultaneously performing non-nursing tasks. Utilizing support services for cleaning and food can enhance nursing professionals' contribution to direct patient care (Bekker et al., 2015). It is concerning that care workers cannot fully utilize their expertise, as non-nursing tasks are linked to lower job satisfaction (Bekker et al., 2015).

Results show that better work-related well-being among care workers is associated with decreased unfinished nursing care in social care, supporting previous research (Andersson et al., 2022b). Well-being staff may be more attuned to residents' needs and motivated to provide extra effort in social care (Hult et al., 2023). These results suggest that nurse leaders should support care workers' well-being and optimize their contributions to all nursing activities to reduce unfinished care. Additionally, nurse leaders should promote a resident-centered approach to enhance care quality. While some associations between individual and team climate factors and unfinished care were statistically significant, they were not clinically significant due to small beta coefficients. Further research is needed in this area.

Temporary employment contracts were associated with a decreased unfinished nursing care in caring, rehabilitation and monitoring and social care. This finding supports a previous study, in which care workers' with permanent employment contracts reported more unfinished nursing care (Campagna et al., 2022). In our qualitative study (Hackman et al., 2025), care workers noted that colleagues with short-term contracts had more time for nursing care due to fewer other responsibilities. This suggests that the nature of employment contracts may influence task allocation. Previous research supports this, indicating that care workers prioritize tasks clearly defined as their responsibilities (Ludlow et al., 2021a). Nurse leaders play a crucial role in ensuring appropriate task allocation and promoting resident-centered care. Clearly defining staff roles and aligning them with their educational background is essential. Future studies should explore the differences in job tasks between temporary and permanent employees to improve work planning and equitable task distribution, thereby reducing unfinished nursing care.

Although the study did not find associations with unfinished nursing care and transformational leadership, supporting previous research (Norman and Sjetne, 2024; Zúñiga et al., 2015b), it highlighted individual and organizational factors influenced by nurse leaders (Bekker et al., 2015; McCauley et al., 2020; Hult et al., 2023). The leadership style may not directly impact unfinished care but rather through mediating factors. A systematic review indicated that nurse leaders' influence is conveyed through these mediators, improving staff and patient outcomes (Hult et al., 2023). Factors such as non-nursing tasks, care workers' well-being, and differences in duties based on employment contracts fall under nurse leaders' responsibilities. Future research should examine the mediating role of nursing leadership in unfinished care. Reducing unfinished care requires care workers to recognize and address it comprehensively. Nurse leaders play a crucial role by fostering open dialog and ensuring appropriate task allocation focused on resident-centered care.

This study addressed the research gap, revealing the complexity of the phenomena and identifying interrelated factors for consideration in future studies and in the nursing leadership development. Future research should explore effective interventions to reduce unfinished nursing care and evaluate their efficacy (Ausserhofer et al., 2021).

5.1. Strengths and limitations

A major strength of this study is the data collection from 18 nursing homes of various sizes. Examining multiple factors simultaneously provided insights into the complex phenomenon of unfinished nursing care. Despite a low response rate for the unfinished nursing care survey, the sample size was acceptable. According to Field (2018), the minimum required sample size was 333 respondents, with a 5 % error margin and a 95 % confidence interval, for a population of 2492. The response rate for the first dataset (Finnish Public Sector study), which provided data on team climate, was high. It is also a strength that the participants were key informants working in direct patient care, with diverse educational backgrounds. This diversity is crucial for a comprehensive understanding of the issue, as it involves different responsibilities in nursing care.

The BERNCA-NH instrument used to measure unfinished nursing care was suitable for care workers with various educational backgrounds. This study utilized internationally validated instruments, increasing the reliability of the results. Additionally, using data from two different sources reduces common method bias, as the data were not collected with a single survey at the same time (Podsakoff et al., 2024). Using two separate surveys also reduced respondent fatigue and inattention associated with long surveys (Podsakoff et al., 2024). However, conducting multiple surveys within a short period may lead to lower response rates (Podsakoff et al., 2024).

However, this study has several limitations. Data were collected at different levels: the first dataset (the Finnish Public Sector study) was based on unit-level means (n = 122) from 18 nursing homes, while the second dataset consisted of individual care workers' responses from the same units. The small beta coefficients or non-existent associations between unfinished nursing care and team climate factors may be due to the Finnish Public Sector study data not being at the individual level. Alternatively, small beta coefficients might indicate the irrelevance of these factors. Furthermore, multilevel analysis to control for potential clustering effects was not feasible due to the small number of nursing homes included in the study.

In the second dataset, a high Cronbach's alpha value (above 0.95) for the TLS instrument suggests possible redundancies, potentially compromising reliability (Taber, 2017). Self-reported surveys might increase common method bias, as respondents could provide socially desirable answers (Podsakoff et al., 2024). As a limitation, it should be noted that a few items from the BERNCA-NH had over 20 % missing values due to the recoding, in which the options "Care was not necessary" and "Not within my field of responsibility" were treated as missing. Additionally, responses to these options may indicate that nursing staff perceive certain tasks outside their scope of responsibility, even though these tasks actually represent unfinished nursing care. Moreover, the number of participants varied across nursing homes, and there is no information about non-respondents. The Finnish Public Sector study lacked participants' background characteristics, which made it impossible to assess the compatibility between participants in the datasets. However, both surveys targeted care workers in the same units, and it is reasonable to assume no major staff changes occurred during data collection. The demographic representativeness of the second dataset matched the basic population in terms of gender and employment type, though not fully in education level. Finally, given the cross-sectional design, findings should not be interpreted as causal (Field, 2018). Future research should consider a longitudinal design. The results can be cautiously generalized to Finnish nursing homes but not beyond Finland due to variations in care workers' education level and staff structures across countries.

5.2. Conclusions

This study explored a scarcely studied topic in nursing home settings by examining multifaceted associations related to unfinished nursing care. It enhanced understanding of the phenomenon's complexity and

provided evidence of associations between unfinished nursing care, non-nursing tasks, care workers' well-being, and temporary employment contracts. To reduce non-nursing tasks among trained care workers, the range of job duties in nursing homes should be expanded, as these tasks can be performed with less training. In addition to this responsibility, nurse leaders must also promote employee well-being at work. Overall, identifying and addressing unfinished nursing care, along with establishing specific protocols, is crucial for humane and ethically sound care for the older people. Further research should focus on nursing leadership and nurses' decision-making processes to better understand the underlying mechanisms of these associations.

CRediT authorship contribution statement

Pauliina Hackman: Writing – original draft, Validation, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Arja Häggman-Laitila:** Writing – review & editing, Validation, Supervision, Project administration, Methodology, Investigation, Conceptualization. **Marja Hult:** Writing – review & editing, Validation, Supervision, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

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Declaration of competing interest

The authors declare no competing interests.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijnurstu.2025.105203.

Data availability

The data are available from authors upon reasonable request.

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