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## Featured Article

## Nursing assistants and resident satisfaction in long-term care: A systematic review

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## ABSTRACT

**Background:** The number of nursing assistants (NAs) in the long-term care industry is on the rise, helping to service the needs of an increasingly aging population. Understanding influences on NAs service qualities and resident satisfaction is important to sustainable long-term care services. To date, the research evidence about NAs factors and resident satisfaction has not been synthesized. We aimed to address this gap in the evidence. **Research design and methods:** Utilizing a mixed-methods systematic review, we searched PubMed, PsycINFO, AgeLine, MEDLINE, Scopus, and Google Scholar databases for journal articles with primary data published from database inception to March 2021. Both qualitative and quantitative literature were considered and a narrative summary provided. Study reporting quality was assessed using the Joanna Briggs Institute Critical Appraisal Checklists and Critical Appraisal Skills Programme Checklist.

**Results:** A total of 25 articles, spanning 9 countries and regions, were included in the review. Study reporting quality was good. A positive relationship between aged-care resident satisfaction and NAs job satisfaction ( $n = 8$ ) was identified. Resident satisfaction was enhanced through NA training programs ( $n = 7$ ), quality of daily interaction with NAs ( $n = 6$ ), and the overall contribution of NAs in promoting residents' experiences ( $n = 4$ ).

**Discussion:** The current findings highlight the important role of NAs in improving resident care in long-term care settings. Nursing home administrators need to better understand the value of NAs and to provide supports for growth and development in their work. Continuing the professional development of NAs can not only improve their skills but also benefit resident satisfaction and organizational sustainability.

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## Introduction

From a global perspective, the number of older adults is steadily increasing. By 2050, it is estimated that 1/6 of the global population will be over the age of 65 (up from 1/11 in 2019) - or 1.5 billion older adults in the world.<sup>1</sup> All societies are in the transition of this aging revolution -some are in early stages whilst others are in a period of rapid development, however all will face multiple challenges. One particular challenge is the need for a sustainable, long-term care industry to cater for the growing number of older adults seeking residential or supported care. As an example, in 2016 long-term care services in the United States were provided by 4600 adult day services centers, 12,200 home health agencies, 4300 hospices, 15,600 nursing homes, and 28,900 assisted living and similar residential care communities, serving more than 8.3 million people.<sup>2</sup> Notably, the majority of these older adults have comorbid chronic conditions (e.g.,

vascular disease, dementia, arthritis) requiring specialist, on-site 24-hour health care support – including nursing home, assisted, living, continuing care retirement community, and residential aged care.<sup>3</sup>

In order to prepare for such a demand, society needs to invest in facility-based services for older adults and, in turn, the promotion of quality of care and life in residential nursing facilities. Since 1987, with the passage of the Omnibus Budget Reconciliation Act, the federal government has mandated new standards of care for licensed nursing homes which recognizes user satisfaction as a key quality indicator.<sup>4</sup> Resident and family satisfaction has now become a requirement for nursing homes to remain licensed and stay in business in many states.<sup>5</sup> This requirement aligns well with the person-centered care model, which emphasizes the importance of engaging and working with service users and consumers to better target their needs.<sup>6</sup> Despite this new regulation, adverse resident outcomes such as resident abuse and neglect, poor care quality, medication errors, and resident/family complaints of the care services continue to be reported.<sup>4</sup>

Resident satisfaction reflects an individual's attitudes toward the health care system and, as such, offers a potential tool for improving

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service delivery.<sup>7,8</sup> The complexity of operationalizing satisfaction, as a construct, is highlighted by the numerous survey instruments that are available at a federal, state, or local level consistently.<sup>9,10,11,12</sup> In saying this, measures have consistently acknowledged the importance of nursing assistants (NAs) as a contributor to resident satisfaction with long-term care.<sup>13,14,15</sup> The term NA comprises a broad range of non-professional workers - including nurse aides, care aides, frontline caregivers, and direct care workers - whose primary role is to help frail and disabled persons with daily care tasks (i.e., eating, dressing, bathing).<sup>16</sup> In addition to intensive assistance, NAs help residents participate in social activities - such as classes, outings, and religious services, under the supervision of a licensed professional - typically a registered nurse or nurse practitioner.<sup>15, 17</sup> Today, NAs represent the largest component of the aged care workforce and are even considered the core of the long-term care system, accounting for 63.9% in nursing homes and 83.3% in residential care communities, respectively.<sup>18</sup> Moreover, it is estimated that nursing homes will have to fill 680,000 NA jobs between 2016 and 2026, providing critical support for more than 1.5 million residents who require 24-hour care.<sup>19</sup>

Given their frequent interactions with residents, NAs are well-positioned to observe changes in resident conditions and, in turn, impact resident satisfaction. To date, however, much of the research in this area has been quantitative. This includes available systematic and narrative reviews on the relationship between various aspects of the NA role with resident satisfaction.<sup>20,21,22</sup> Yet, the accumulating research evidence on NA factors and resident satisfaction has yet to be aggregated to inform quality improvements in long-term care services. The present review consolidates and summarizes the quantitative and qualitative evidence in this area to provide an up-to date, holistic perspective of NA factors that impact on resident satisfaction in long term care settings. In doing so, we aim to improve current understanding of how NAs help to improve residents' satisfaction as well as identify gaps in existing knowledge that can be addressed in future research.

## Methods

### Research design and protocol registration

We carried out a mixed-methods systematic review,<sup>23</sup> to determine the state of the evidence on NA factors and resident satisfaction in long-term care facilities. A mixed methods systematic review is an integrated approach, which combines quantitative and qualitative studies into a single synthesis.<sup>24</sup> It was appropriate for this study aim to examine and synthesize the evidence on NA factors and resident satisfaction across research paradigms for a comprehensive perspective. As part of our review study, we prospectively registered the protocol on the PROSPERO International Prospective Register of Systematic Reviews (CRD42021251015). The review adheres to the PRISMA guidelines.<sup>25</sup>

### Search strategies

We conducted a systematic literature search to identify relevant articles from the PubMed, PsycINFO, AgeLine, Medline, and Scopus databases, published from inception to 2021. For the search strategy, we utilized keywords focused on the population (i.e., NA and relevant synonyms), setting (i.e., supported care) and outcomes (i.e., resident satisfaction) of interest (see Table 1). The reference lists of included studies were also manually searched and the Google Scholar engine used to identify additional studies that may have been missed.

### Selection procedure

Following the removal of duplicates, titles and abstracts of records were imported into Microsoft Excel. Two authors (XL, QL) screened each record against the exclusion criteria (see Table 2) with full texts

**Table 1**

Database search terms.

"nursing assistant factors" OR "nursing assistant satisfaction" OR "job satisfaction" OR "nursing assistants" OR "frontline caregiver" OR "nursing home employee" OR "direct care workers" OR " caregiver" OR "nursing assistants"
AND
"resident satisfaction" OR "consumer satisfaction" OR "user satisfaction" OR "resident experience" OR "resident well-being" OR " resident outcome"
AND
"nursing homes" OR "long term care" OR "aged care facility" OR "continuing care retirement community" OR "assisted living" OR "elderly care" OR "long-term care facility" OR "long-term care facilities" OR "nursing home care" OR "long-term care institution" OR "residential aged care"

then obtained with the assistance of a research librarian. A full text was not available, or could not be located, for two records despite an exhaustive online search. The abstracts of potentially relevant articles were subsequently re-screened for eligibility.

## Data extraction

We utilized a data extraction form, derived from piloted templates,<sup>26,27</sup> (see Table S1, online supplemental material). This data extraction form included details related to the study design and methodology (e.g., publication details, study design, satisfaction instruments). We adapted this form for qualitative studies, by using `observational tools and themes` in place of `instruments and dimensions`. Two authors (XL, QL) independently performed the extraction process. Where information was missing or unclear, we contacted the corresponding author for further details. We then compared the extraction forms with consensus discussion with two additional researchers (CHZH, LO).

### Assessment of study reporting quality

The methodological quality of included articles was examined independently by two authors (XL, CHZH), with excellent (80%) inter-rater agreement. For the study reporting quality, we utilized three validated assessment tools as follows. First, the 8-item Joanna Briggs Institute (JBI) Critical Appraisal Checklist - a recommended tool for cross-sectional studies.<sup>28,29</sup> Each item is scored as '0, 0, 1', corresponding to the answers ' No, Unclear, and Yes' respectively. Then, we calculated the overall quality score, by dividing points scored by the total amount of points, with scores of > 0.8, 0.6 and < 0.6 representing high, moderate, and low ratings.<sup>30,31,32</sup>

**Table 2**

Article inclusion and exclusion criteria.

Inclusion Criteria
• Participants: residents in long-term care setting. NAs, frontline caregiver, nursing home employee, direct care workers, caregivers, nursing aides.
• Study aim: reported a relationship between NA-related factors and resident.
• Study design: cross-sectional survey, longitudinal study, experimental study, or qualitative.
• Setting: long-term care settings, including nursing home, residential aged care facilities, long-term care facilities, assisted living, continuing care retirement community, and other elder care institutions.
• Other: studies published in English. No date limits set.
Exclusion Criteria
• Participants: nurse practitioners, licensed practical/vocational nurses, registered nurses.
• Study aim: did not specifically investigate resident satisfaction and related NA factors
• Study design: reviews, commentaries, editorials, opinion pieces, conference abstracts.
• Other: studies with duplicate data, or full text unavailable (on request).

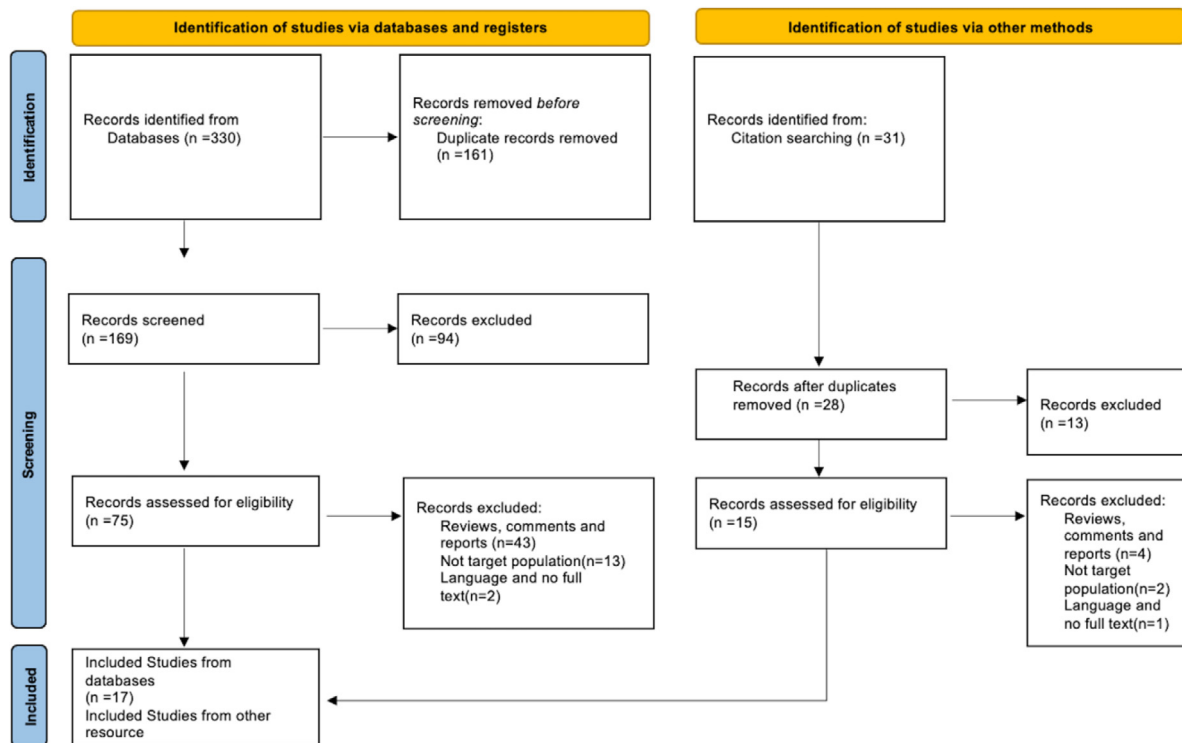


Fig. 1. PRISMA flow diagram of study selection process.

We utilized the same scoring criteria for the remaining quality assessments. This included the JBI Critical Appraisal Checklist, which assesses the trustworthiness and relevance of the results from Quasi-Experimental Studies,<sup>33</sup> and the 10-item Critical Appraisal Skills Program (CASP) qualitative research checklist - a well-established tool in health research.<sup>29,34</sup>

Data synthesis

A meta-analysis was not possible in this review, due to marked heterogeneity in study designs and outcomes. Instead, data were summarized in a narrative form. For quantitative studies, statistically significant associations between NA-related factors and resident satisfaction were reported and results grouped according to four broad categories: NA job satisfaction, NA interventions, NA-resident interactions, and the NA's role in general. Qualitative findings were assessed by the research team and structured into the same aforementioned categories. Two investigators [EM, DD] advised the research writing and data synthesis procedures.

Results

Studies identified

As seen in Fig. 1,<sup>35</sup> a total of 330 records were yielded in the database search, with 31 additional records sourced from reference lists. Following the removal of duplicates, and initial screening based on titles and abstracts, 90 records were retained for full-text evaluation. A further 65 records were subsequently excluded based on study design (n = 47), unavailability of full text or a non-English publication (n = 3) and non-target population (n = 15), resulting in a final sample of 25 independent studies.

Study characteristics

The 25 studies included in this review spanned 30 years (1992–2021), with the majority (60%) published in the last decade. These

studies were conducted in nine counties and regions, including 11 from the USA, four from Australia, two studies each for Sweden, UK, and Taiwan, and single studies from Canada, Hong Kong, the Netherlands, and Belgium (see Table 3). A range of long-term, aged care settings was represented, from nursing homes (n = 14), to assisted living (n = 2).

Sample characteristics

Studies typically recruited residents from multiple sites, ranging from two long-term care facilities to as many as 300.<sup>36,37</sup> Sample sizes varied accordingly, from 51 to 52,300 individual residents,<sup>36,37</sup> and from 17 to 983 NAs - including certified and non-certified NAs.<sup>34,14</sup> These key sample parameters were, however, inconsistently reported across the 25 studies (see Table 4).

Study reporting quality

The 25 quality assessments included 14 cross-sectional, 5 experimental, and 6 qualitative studies. Results are tabulated in the online supplemental material (Table S2). Overall, methodological quality across the studies was moderate (n = 14) to high (n = 11).

Table 3 Key study characteristics.

Country or Region	Publication date	Setting
USA 11	Pre-2000 2	Nursing home 14
Australia 4	2000–2005 3	Long-term care facility 5
Sweden 2	2006–2010 5	Residential aged care 2
UK 2	2011–2015 5	Care homes 2
Taiwan 2	2016–2021 10	Assisted living 2
Canada 1	Total 25	
Hong Kong 1		Total 25
Netherland 1		
Belgium 1		
Total 25		

**Table 4**  
Detailed results of included studies.

First Author (year) Country	Sample /Study design	Instrument /Measurement	Dimension/Factor	Results/Conclusion	Settings
Kruzich. (1992) USA	289 residents cross-sectional study	Nursing home satisfaction NA questionnaire	17 items designed to measure resident satisfaction with issues directly related to the environment & caregivers	Length of employment, level of benefits, wages for NAs and their perception of the charge nurse's fairness and competence were all related to residents' satisfaction with the nursing home.	51 nursing homes
Teresi. (1993) USA	74 aides 318 residents experimental study	NA morale NA attitude Resident satisfaction	Measures of NA morale, attitudes toward primary care, & resident satisfaction.	NA organization citizenship training was associated with an increase in resident satisfaction in comparison to non-intervention	19 nursing homes in New York
Chou (2003) Australia	996 residents 895 NAs cross-sectional study	Resident Satisfaction Questionnaire Measure of Job Satisfaction	Resident satisfaction: room, home, interaction, meals, NA care, and involvement. NA job satisfaction: personal, workload, team, training, support	NA job satisfaction plays a crucial and central role in determining resident satisfaction in nursing homes, whereas it has less impact in hostels.	62 facilities (36 hostels, 26 nursing homes)
Boldy (2004) Australia	1446 residents 983 NAs cross-sectional study	Resident Satisfaction	24 items including 6 dimensions: room, home, social interaction, meals service, NA care & resident involvement.	NA job satisfaction was associated with resident satisfaction more than actual care hours they provided.	70 aged care facilities
Barry (2005) USA	586 nurse aide NAs cross-sectional study	Minimum Data Set	Facility risk adjusted pressure ulcer incidence rates & social engagement scores served as resident outcome measures.	Low turnover and high retention of NA were associated with lower pressure ulcer incidence among residents. High turnover and high retention were associated with higher social engagement scores.	Nursing facilities in Maine, Mississippi, New York, Ohio
Sikorska-Simmons (2006 b) USA	335 residents 298 NAs cross-sectional study	Resident Satisfaction Index NAs Job Satisfaction	6 items that focus on resident perceptions of services, of NA, & of facility's social environment.	Greater resident satisfaction in the facility was associated with higher NA job satisfaction and more positive NA views of organizational culture.	43 assisted living facilities
Rondeau (2006) Canada	300 nursing homes cross-sectional study	Nurse Satisfaction and Resident Satisfaction employer-of-choice (magnet) strength	3-item Resident satisfaction: care quality, satisfaction, reputation. 3-item Nurse satisfaction: morale, job satisfaction, rate of grievances.	NA with strong magnet (employer-of-choice) characteristics had higher levels of nurse and patient satisfaction, even after controlling for several significant factors at the establishment level.	300 nursing homes in western Canada
Carpiac-Claver (2007) USA	23 nurse aides qualitative study	Verbal & nonverbal communication from videos of nurse aides & residents were transcribed	Four forms of verbal communication identified: personal conversation, addressing the resident, checking in, & emotional support/praise	NA affective communication qualities were associated with training programs to improve resident satisfaction.	2 skilled nursing facilities & 1 assisted living facility
Liu (2007) Taiwan	392 residents 244 certified-NAs cross-sectional study	Job Satisfaction of Certified-NAs General Satisfaction of the Residents	10 items focused on 2 aspects: perceptions of the NAs' attitudes toward their work & perceptions of content, duration, and skill of the services that residents received.	Residents' satisfaction was found to increase consistently with the job satisfaction of NAs.	56 nursing homes in southern Taiwan
Bishop (2008) USA	255 certified NAs 105 residents cross-sectional study	NAs' views of their jobs survey Quality-of-life questionnaire	NA survey (82 items): workplace relationships, job satisfaction, & resident care. Resident survey (38 items), relevance to quality of life & relationships with NAs	Higher NA job commitment was associated with residents' satisfaction and quality of life.	18 nursing homes in Massachusetts
Clare (2013) UK	32 care NAs received training vs. 33 NAs had no training. experimental study	Aware-Care measure, Quality of Life in Late-stage Dementia scale	Quality of life rated independently by a family member and by care NAs.	Awareness training for NAs resulted in more satisfied residents and their families than a comparison group with no training	8 care homes in UK

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**Table 4** (Continued)

First Author (year) Country	Sample /Study design	Instrument /Measurement	Dimension/Factor	Results/Conclusion	Settings
Coleman (2013) USA	19 residents/aide dyad-experimental design	Resident Satisfaction Index Person-centered training intervention	The RSI includes five subscales: health care, housekeeping, physical environment, relationships with NAs, & social life/activities	Residents' perceptions of relationship closeness with NA was associated with higher satisfaction.	NH1 had 160 residents and NH2 had 92 residents.
Liu (2014) Hong Kong	49 NAs qualitative study	semi-structured individual interviews group discussion	Four themes identified: pain assessor. reporter; prescribed interventions. & Instigator implementing non-pharmacological interventions.	NAs are perceived to be undervalued in their job roles.	12 nursing homes
Simmons (2014) USA	17 nurse aide & 15 family cross-sectional study	video vignettes of care interactions	Participants were asked to rate their preferred care vignette using a standardized forced-choice questionnaire	Both families of residents and NAs strongly preferred NA-resident interactions in which choice was offered for specific aspects of care.	2 long-term care community
Willemse (2015) Australia	51 residents qualitative study	dementia care mapping	NAs resident interactions that either address (personal enhancers PEs) or undermine (personal detractors PDs) and scores for resident's mood and engagement (ME-value).	NA interactions which address residents' need for attachment, identity and inclusion and eliminate interactions which undermine residents' need for comfort can increase residents' well-being.	9 long-term care settings
Verleye (2016) Belgium	279 frontline employees cross-sectional study	customer engagement behaviors measure Role stress measure	Role stress consists of 3 role stressors: role ambiguity, role conflict, & role overload. 4 forms of customer engagement: cooperation, giving feedback, helping other customers, & spreading positive word of mouth.	NA role stress and job strain were mitigated with more positive customer feedback by word of mouth about the nursing home.	20 nursing home teams in Belgium
Boakye-Dankwa. (2017) Australia	203 skilled nursing facilities cross-sectional study	My Inner View Job Satisfaction Survey	Items of resident satisfaction: activities, food, laundry, community life; transportation; amenities; personal assistance needs.	Investments in workplace safety, higher NA staffing levels, and employee engagement programs were associated with improving employee retention, resident satisfaction, and better quality of care.	203 skilled nursing facilities in 13 states in the eastern United States
Kusmaul (2017) USA	23 Certified NAs' qualitative study	NAs were asked to identify factors they felt were components of good care	3 themes emerged: technical aspects of care; care of the environment; & a little bit more.	NAs reported a need for assessments of quality care that incorporated their voices.	8 New York State nursing homes
Plaku-Alakbarova (2018) USA	52,300 residents 175 skilled nursing facilities cross-sectional study	My Inner View An Annual Satisfaction Survey	24 items, categorized into 4 subdomains: quality of life (10 items), quality of care (8 items), quality of service (4 items), & global satisfaction (2 items).	Increase in NA employee satisfaction was associated with an increase in the satisfaction of residents and family members.	175 skilled nursing facilities in the eastern United States
Chao (2019) Taiwan	590 residents 315 geriatric nursing NAs cross-sectional study	Maslach Burnout Inventory Residential satisfaction	22 items (9 items emotional exhaustion, 5 items depersonalization, 8 items personal accomplishment)	Higher depersonalization among NAs associated with lower residential satisfaction and perceived quality-of-life, as well as more depressive symptoms among residents.	172 long-term care facilities in Taiwan
Gerritsen (2019) Netherlands	291 Care NAs 239 residents cross-sectional study	Dementia Questionnaire Social Wellbeing of Nursing home residents	The Approaches to Dementia Questionnaire includes 19 items The Social Well-being of Nursing home residents scale has 9-items	Care processes may be improved by focusing on NAs' attitudes of care, with important benefits for the well-being of residents with dementia.	15 long-term care facilities in the Netherlands
Surr (2019) UK	3 care homes qualitative study	Training program Dementia Care Mapping	Training was said to improve empathy, knowledge about the lived experience of dementia and the importance of meeting individual needs.	Empathy training for NAs increased resident well-being, although the results varied by facility.	3 care home provider organizations
Abrahamson (2020) USA	25 NAs qualitative study	10 questions addressed NA perceptions	4 themes identified: communicating, protecting, cooperating, & caring.		17 organizations and seven states

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Table 4 (Continued)

First Author (Year) Country	Sample /Study design	Instrument /Measurement	Dimension/Factor	Results/Conclusion	Settings
Lood (2020) Sweden	459 resident and NAs experimental study	Pyramid Questionnaire	31 questions on: information, nursing NAs, caring processes, activity, contact, social support, participation, and work environment. workshops on advance care planning, adverse effects of hospitalizations, symptom management, communication, supporting proxies, challenging situations.	Increased NA input into programs and policies would not only improve the resident experience but is warranted. NA services were associated with care satisfaction among residents and family of residents.	2 nursing home in each site in Australia, Norway, and Sweden
Lamppu (2021) Finland	324 residents experimental study	4-hour education  Edmonton Symptom Assessment Scale		NA training in managing hospitalization improved changes in symptom scores although pain, well-being, and satisfaction remained unaffected by the intervention.	20 long-term facility wards in Finland

NA factors and resident satisfaction

NA factors identified as contributing to resident satisfaction with ongoing care provision were categorized according to the context of care, namely NA job satisfaction ( $n = 8$ ), the scope of NAs interventions ( $n = 7$ ), the ways in which NAs interacted with residents during daily care ( $n = 6$ ), and the NAs role in improving residents' experiences in general ( $n = 4$ ). Each category is described in more detail below.

Job satisfaction

That job satisfaction among NAs likely contributed to resident satisfaction was identified by eight studies. Chou et al.,<sup>13</sup> in their cross-sectional study, found that NA's job satisfaction (operationalized with the Measure of Job Satisfaction) played a crucial and central role in determining resident satisfaction in nursing homes, although had less impact among those in assisted living. Similarly, Boldy et al.<sup>14</sup> using a Resident Satisfaction survey with 1446 residents and 983 NAs, identified job satisfaction as having a greater influence on resident satisfaction than actual care hours provided. The remaining studies also identified a positive correlation between NA's job satisfaction and resident satisfaction within a facility, regardless of measurement (e.g., Minimum Data Set,<sup>40</sup> a job survey for NAs,<sup>41</sup> a survey for resident quality of life,<sup>41</sup> questionnaires focusing on Resident Satisfaction and Job Satisfaction.<sup>42</sup>) Plaku-Alakbarova et al.<sup>39</sup> presented quantitative evidence to prove that a 1-point increase in overall satisfaction among NAs was associated with a marked increase of 17.4 points in the satisfaction of residents and their family members also. In this same study, NA satisfaction correlated with a 19% decrease in the incidence of resident falls, weight loss, and pressure ulcers combined – highlighting the key contribution of NAs job satisfaction to different facets of residents' quality of life.

The consequences of NAs being dissatisfied with their jobs was also explored. Kruzich et al.<sup>43</sup> and Barry,<sup>44</sup> reported that low salaries and poor job benefits were associated with high staff turnover and, subsequently, poorer quality of care. Both studies also linked higher NA turnover to a greater incidence of pressure ulcers and dissatisfaction amongst residents with their care. The authors<sup>43,44</sup> emphasized the need for nursing home administrators to attend to the job satisfaction of NAs, given the potential impacts on not only NAs but also for the residents and the facilities.

Interventions

Seven studies identified the importance of having NAs undertake different interventions, in addition to a need to change current NA practices in long-term care - through additional training and professional development. Findings varied. Specifically, Teresi et al.<sup>45</sup> investigated the primary care model, which focuses on fostering feelings of direct responsibility for individual resident care, enhancing socio-emotional interactions between NAs and residents, and allowing residents greater autonomy in their care. The authors concluded that residents within this model, which involved NAs providing long-term care and working in teams of two to share work tasks, were very satisfied with this intervention. A further intervention program, titled the 'strong magnet' (reflecting the high involvement of NAs), also contributed to high levels of satisfaction amongst both NAs and residents.<sup>37</sup> Two studies evaluated intervention programs for residents with dementia. Clare et al.,<sup>46</sup> introduced an AwareCare program which required NAs to undergo training in identifying signs of awareness and responsiveness in residents. Residents under the care of these NAs experienced significantly better quality of life, as rated by their family members, than a comparison group of NAs that did not received this targeted training. Surr et al.<sup>47</sup> interviewed NAs and residents to assess the impact of another dementia training program



which focused on improved communication, increased activity, and resident well-being. Results were mixed - with observations of positive well-being and engagement not consistently identified by residents that they surveyed across eight different sites. Coleman et al.<sup>48</sup> and Lood et al.<sup>15</sup> reported the positive impacts of a staff education program about person-centered care on residents' perceptions of closeness and relatives' general satisfaction with the quality of care, respectively. However, Lood et al.,<sup>15</sup> observed no statistically significant between-group-effects when they compared their 14-month training to a 1-hour lecture on this same topic. Finally, Lamppu et al.<sup>49</sup> compared pre-and post-data related to a workshop on palliative care principles. They identified a change in psychological well-being of residents from baseline to 6 months in favor of the intervention group. However, the findings were diluted at 12 months.

#### *Interactions with residents*

The relationship and interactions between NAs and residents in long-term care were identified as critical to successful care outcomes.<sup>50</sup> Carpiac-Claver,<sup>51</sup> Kusmaul,<sup>52</sup> and Gerritsen<sup>53</sup> found that affective communication, love, and empathy, beyond the physical tasks of caring, improved the care process. Simmons<sup>36</sup> and Willemse<sup>38</sup> also revealed the importance of increasing NA-resident interactions to foster residents' need for attachment, identity and inclusion and, ultimately, achieve residents' well-being. Here, families of residents as well as NAs both preferred NA-resident interactions when the resident was given more scope and choice in the health services that they would like to receive, along with the activities that they could participate in.<sup>36,38</sup> The buffering effect of positive customer feedback on job stress was also noted, particularly the importance of staff spreading a positive 'word of mouth' about the nursing home in which they worked.<sup>54</sup>

#### *Job role*

Nursing care within long-term care facilities was seen to be comprehensive and personal, encompassing many aspects of a resident's life - including medical, psychosocial, and spiritual needs, as well as maintenance of the living environment. NAs were described as versatile, playing a central role in the provision of long-term care. In particular, Boakye-Dankwa<sup>55</sup> and Abrahamson<sup>56</sup> highlighted the importance of increased NA input into programs and policies in order to improve the resident experience. Liu<sup>57</sup> identified NAs as having a supporting role in pain management. However, their role in resident care was also, reportedly, undervalued by other healthcare professionals. Finally, in their survey of burnout among NAs, Chao<sup>58</sup> found significant negative relationships between higher levels of depersonalization and poorer resident outcomes - including lower residential satisfaction, lower perceived quality-of-life, and more severe depressive symptoms.

### **Discussion**

This systematic review investigated the available evidence examining the association between satisfaction of aged-care residents and NA factors. Data from 25 studies spanning 9 countries and regions, were analyzed. We proposed that NAs play a major role in residential services given their unique insight into the experiences of residents. This was confirmed by our data, which included responses from NAs themselves, residents, and their families.

Our findings highlight the complexity of the NAs role, one which extends beyond providing daily care and completing assigned tasks (such as toileting, bathing, or feeding) to relationship-based aspects such as communication, psychosocial support and comfort. As with any health care professional, communication skills are equally critical to clinical skills for NAs. These findings point to a need to develop

effective, diverse ways to recognize the contribution of NAs, potentially by redesigning NA job descriptions in long-term care to better fit their multi-faceted role.<sup>59,60,61</sup> Left unaddressed, increasing numbers of NAs will likely show their dissatisfaction through poorer performance, burnout, work absences, and high rates of turnover.<sup>62</sup>

Workforce shortage remains a significant obstacle to the development of the long-term care industry - an industry facing a rapidly expanding population of older adults which require life-long care.<sup>3</sup> Current problems with recruitment and retention of NAs within aged care may, in part, reflect wage parity issues. Despite NAs providing around 80% of the workload in nursing homes in the United States,<sup>63</sup> nurse aides, care aides, frontline caregivers, and direct care workers remain significantly underpaid.<sup>64,65</sup> Concerningly, nearly half (44 percent) of NAs working in nursing homes earn a median income of \$22,200 per year<sup>65</sup> and live-in low-income households.<sup>66</sup>

The importance of wages and financial benefits to NA's job satisfaction has previously been established.<sup>67,68</sup> In saying this, we recognize that job satisfaction does not only stem from monetary needs. A job needs to be meaningful to an employee as well as motivate them. For this reason, it is critical for service providers to provide sufficient support, resources, and training to develop and expand the skills set of their NAs, helping to foster growth and development in their work.<sup>69,70</sup> As identified in this review, enhancing job satisfaction can have equally positive impacts on resident satisfaction. The existing literature suggests that effective intervention and training programs can lower the level of employee turnover, helping to ensure a consistent workforce and, ultimately, contribute to increased resident satisfaction.<sup>35,43</sup> Notably, only three of the seven intervention studies examined in the current review reported significant impacts on resident satisfaction, including learning and behavioral changes, through positive NA reactions.<sup>37,45,46</sup> These programs focused on key topics: NA high-level involvement, skills training in primary care, and an awareness-based intervention to help care for residents with dementia. Coleman et al.,<sup>48</sup> Surr et al.,<sup>47</sup> Lood et al.,<sup>15</sup> and Lamppu et al.<sup>49</sup> suggested that intervention programs which are tailored to NAs needs are more likely to lead to positive outcomes among older adults in long-term care. Future research should consider effective ways to develop and improve intervention and training programs tailored to NA working in long-term care.

#### *Limitations*

Although we used rigorous methods in this review, a number of limitations need to be considered. First, whilst we adopted several search strategies, including both recommended and specialized databases (e.g., PsycINFO, AgeLine;) and Google Scholar for completeness,<sup>71</sup> we may not have captured all relevant studies in our search. Similarly, our search strategy was restricted to key words. Given that the term 'satisfaction' is a heterogeneous construct, in addition to the broad range of synonyms that the terms 'NAs' and 'long-term care' encompass, some studies may have been inadvertently missed. Language limitations are another issue in search processing. As we only chose English studies, albeit global publications, our findings cannot be generalized to the broader residential care population - particularly in developing countries. Lastly, due to the differing long-term care settings, services in these settings, and research methods that characterized included studies, the identified NA factors associated with resident satisfaction were quite diverse, making it difficult to precisely operationalize the examined NA factors, particularly a crucial construct such as job satisfaction.

### **Conclusion**

In this review we analyzed and summarized available evidence regarding the relationship between NA factors and resident satisfaction across different long-term care settings. Four key factors contributing to resident satisfaction were identified: NAs' job satisfaction,

the particular interventions that they undertake, their interaction with residents, as well as their roles and responsibilities. The findings highlight the comprehensive and important role that NAs serve in improving the long-term care of aged residents. A need for nursing home administrators to better understand the value of NAs, and to cultivate avenues for growth and development in their work, is suggested. Such growth will not only benefit NAs but can have broader benefits for the residents and the organization.

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## Declaration of Competing Interest

We have no conflict of interest to declare.

## Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.gerinurse.2021.08.006.

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