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Feature Article

Does geriatric nursing staff burnout predict well-being of LTC residents?

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ABSTRACT

Nursing staff in residential settings are exposed to a large number of stressors. This study examined the relationship between geriatric nursing staff (GNS) burnout and the well-being of residents in long-term care (LTC) facilities. Data were obtained concerning 590 older residents who were served by 315 GNS in 172 LTC facilities in Taiwan, using multilevel modeling. The depersonalization (DP) dimension of burnout in GNS was consistently related to various resident well-being outcomes. Higher DP among GNS was associated with lower residential satisfaction and perceived quality-of-life, as well as more depressive symptoms among older LTC residents. The findings support the claim that DP among GNS has a greater role in determining LTC resident well-being than other dimensions of burnout. Efforts should be made to mitigate the emergence of DP among GNS. Support and education are also needed to enable GNS to foster positive interactions and relationships with LTC residents.

Introduction

By the end of 2016, Taiwan had a total of 1067 residential care homes and 500 nursing homes, serving over 70,000 residents aged 60 or above.[1] Nursing staff made up over 90% of the direct care workforce at these long-term care (LTC) facilities in Taiwan.[2,3] Nursing staff in residential settings are exposed to a large number of stressors, including time pressure, heavy workloads, and physical tiredness, which can lead to burnout.[4] Furthermore, working with older people who need LTC can be particularly emotionally demanding. Caring for residents with debilitating physical problems and frequently encountering death are common emotional stressors among geriatric nursing staff (GNS).[5] Serving residents with cognitive impairment or dementia is also challenging because their behavioral disturbances and communication defects makes understanding and meeting their needs difficult.[4,5] Therefore, previous studies have identified that nursing staff in LTC settings experience greater stress and burnout than nurses working in fields such as public and community health, ambulatory or other noninstitutional care.[6]

Maslach et al. defined burnout as internal psychological feelings in reaction to the negative experience of stress on a job, including increased feelings of emotional exhaustion (EE), the development of depersonalization (DP), and reduced personal accomplishment (PA).[7] Burnout can be considered not only as an immediate internal response to stress, but also as a prolonged response to chronic occupational stress.[8] Accordingly, the development of burnout involves long-term physical, emotional, cognitive and behavioral changes over time.[8] For instance, Maslach and Pines differentiated the development of burnout into three stages; the first involves physical and emotional exhaustion; the second involves cynical and negative feelings toward co-workers and unfeeling or impersonal responses to care recipients, and the third involves feelings of disgust, isolation and detachment from others even oneself.[8]

Although recent investigations have addressed burnout among nursing staff, little research has focused on GNS in LTC settings. Few studies of GNS in LTC settings have sought to identify determinants of burnout to ensure sustainability of the LTC workforce. Work environmental factors, such as characteristics of the work,[9] work stressors,[5,10–12] satisfaction with work,[12] and social support,[13,14] as well as individual factors, such as coping and affective factors,[5,9] have been found to be related to the degree of GNS burnout.

A few investigations in this field concern the impact of GNS burnout on the quality of care provided, and on the well-being of older residents.[12,15] Redfern et al. proposed that the emergence of GNS burnout is critically influenced by stress that is related to interpersonal relationships with residents.[12] Specifically, interpersonal demands made by cognitively intact and independent residents can result in a quantitative and qualitative work overload, leading to burnout. A lack of reward and boredom as a result of interacting with cognitively impaired and dependent residents can effectuate qualitative underload, which results in rustout (p. 513). Overload and underload may coexist among GNS, erode the quality of care, and impair the well-being of older people in LTC settings.[12] In contrast, the physical, cognitive, and emotional states of

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residents can also affect GNS burnout. Previous studies of nursing staff in other health care environments (such as hospitals) have supported the relationship between staff burnout and patient safety[16] or patient satisfaction.[6] However, empirical evidence that links GNS burnout with resident well-being, which is defined as residential satisfaction, quality of life and depressive symptoms in this study, is relatively scarce. Moreover, findings from the paucity of research that addresses this relationship are inconsistent. For example, Redfern et al. found that neither the quality of care nor older resident morale was related to staff work stress in nursing homes.[12] In contrast, Jenkins & Allen found that high burnout among residential home staff, and especially low PA, was indeed associated with reduced quality and quantity of staff-resident interactions.[15]

As demand for residential care increases, understanding the extent to which staff burnout may affect the well-being of geriatric residents is crucial. The controversial findings from earlier studies either were based on small samples,[12] or data only from nurses or observation methods,[15,17] so further investigations is required. Hence, the present study aimed to examine the relationship between GNS burnout and resident well-being using a larger sample and three-level data comprising information from institutions, staff, and residents. To clarify the mechanism by which GNS burnout affects resident well-being, the effects of the three dimensions of burnout, defined by Maslach et al.[7] on a wide range of resident well-being outcomes were simultaneously evaluated; such an approach would be more informative than just considering the burnout construct as a whole. Based on the assumption that was made by Redfern et al.[12], this study hypothesized that (1) GNS burnout was negatively associated with resident well-being outcomes, including residential satisfaction and perceived quality-of-life (QOL), and positively related to the level of depressive symptoms among residents; and (2) DP, which was the interpersonal relationship component of staff burnout, was a stronger determinant of resident well-being than EE or PA.

Method

Participants

Data that were used in this study were drawn from two broader studies of LTC nursing staff and older residents in Taiwan. The first study was conducted between June and September 2014, and the second study was carried out between June and September 2016. A stratified equal probability sampling was utilized to select LTC institutions and nursing homes for both studies. Researchers firstly obtained a list of registered LTC institutions and nursing homes, along with their bed capacities in 2014 and 2016, respectively. The listed institutions were stratified by bed size and administrative region, and simple random sampling was carried out to select facilities in each stratum. Researchers then contacted the selected facilities to solicit their participation in this study. The Institutional Review Board of National Taiwan University approved these studies.

In both studies, inclusion criteria for the residents were an age of 60 or above, having physical limitations, orientation to time, person and place, and at least three months of residency at their current institution. GNS were nurses or nursing assistants in LTC institutions who provided hands-on care to the interviewed residents. Trained interviewers interviewed sampled residents and their nurses face-to-face.

The first study focused on the well-being of LTC residents and the sample comprised 634 older adults who were served by 220 GNS from 155 institutions. The second study concentrated on the burnout of GNS, which included 683 GNS in 157 institutions. In the second study, older adults who received hands-on care from the nursing staff interviewed were invited to complete a face-to-face interview related to their well-being and 179 older residents agreed to participate. At last, the data from both studies were combined and a total of 590 older residents, who were assisted by 315 GNS at 172 LTC facilities with full information on the variables studied in this investigation, and therefore, were included for analyses.

Measures

Institution characteristics

Institution type is specified (1 = *residential care home*; 2 = *nursing home*).

Staff burnout

Staff burnout was evaluated using the Human Services Survey version of Maslach Burnout Inventory (MBI-HSS) which consists of 22 items, scored on a seven -point Likert scale, indicating the frequency of feeling the stated emotion (0 = *never* to 6 = *every day*). The MBI-HSS scores on three subscales, EE (9 items), DP (5 items), and PA (8 items) dimensions, were summed; cutoff scores for “low”, “average” and “high” were set for each subscale.[7] High EE and DP scores indicated a high degree of burnout, whereas a high PA score represented a low degree of burnout. Cronbach's alphas were 0.88 for EE, 0.74 for DP, and 0.86 for PA.

Staff characteristics

Eight personal characteristics that can potentially affect GNS burnout were considered. They are age (*years*), gender (1 = *male*; 2 = *female*), education (1 = *elementary school*; 2 = *junior high school*; 3 = *senior high school*; 4 = *college or above*), years of experience at current institution (*years*), and income (in New Taiwan Dollars (NTD)) (1 = *less than 25,000*; 2 = *25,000–29,999*; 3 = *30,000–34,999*; 4 = *35,000 or above*).

Resident well-being

Residential satisfaction, perceived QOL, and depressive symptoms were used as indices of resident well-being. To assess residential satisfaction, residents were asked to assess the extent to which they were satisfied with their institution, on a scale from 1 (*very dissatisfied*) to 5 (*very satisfied*). A single-item QOL measure was used to evaluate residents' perceived QOL, ranging from 1 (*very bad*) to 5 (*very good*). The ten-item short form of the Center for Epidemiologic Studies Depression Scale (CESD-10)[18] was used to measure depressive symptoms. The scores on the ten items were summed (*range*: 10–30) and a higher total score indicated more severe depression (α = 0.77).

Resident characteristics

Six characteristics of residents that might be related to their well-being were included in analyses. They were age (*years*), gender (1 = *male*; 2 = *female*), and level of education (1 = *no formal education*; 2 = *elementary school*; 3 = *junior high school or above*). Cognitive status was measured using the ten item Short Portable Mental Status Questionnaire.[19] A higher score indicated greater cognitive impairment (*range*: 0–10). The Barthel Index was used to quantify respondents' functional independence in performing activities of daily living.[20] A higher score indicated better physical functioning (*range*: 0–100). Also, residents were asked to evaluate their overall health status, ranging from 1 (*very bad*) to 5 (*very good*).

Data analyses

Since a potential clustering effect may exist among residents at the same LTC institution, multilevel linear modeling was used to obtain more accurate estimates of the correlated data, using the *mixed* procedure in Stata 15.0.[21] First, models with no fixed effects (independent variables) were conducted to evaluate the extent to

which the total variability in the three dimensions of burnout was attributable to variations between staff and between facilities, using two-level multilevel linear modeling. Second, staff characteristics and institutional characteristics were added to the models to elucidate their relationships with EE, DP and PA.

Similarly, three-level multilevel linear models with no fixed effects were used to determine the degree to which between-resident, between-staff and between-facility differences were responsible for total variability in residential satisfaction, perceived QOL, and depressive symptoms, respectively. Characteristics of residents, characteristics and burnout of staff, and institutional characteristics were then added into the models in sequence, using residential satisfaction, perceived QOL, and depressive symptoms as outcomes, respectively.

Results

Geriatric nursing staff characteristics, institutional characteristics and staff burnout

Table 1 presents GNS characteristics. The GNS sample in this study reported a moderate level of EE (mean = 17.72), a low level of DP (mean = 3.87), and a moderate level of PA (mean = 36.54).[7] Table 2 presents the results EE, DP and PA scores of GNS that were predicted using two-level multilevel linear modeling. Prior to the inclusion of any fixed effects (staff characteristics), Models 1, 4 and 7 revealed that 77% [107.539/(107.539 + 32.263)], 79% [19.181/(19.181 + 5.150)], and 86% [83.872/(83.872 + 13.238)] of the overall variability in EE, DP, and PA scores, respectively, arose from variation among GNS, whereas 23% [32.263/(107.539 + 32.263)], 21% [5.150/(19.181 + 5.150)], and 14% [13.238/(83.872 + 13.238)] were due to differences among facilities. Models 2, 5, and 8 in Table 2 show how staff characteristics were associated with EE, DP, and PA scores, respectively, with adjustments made for other staff characteristics. In Models 2 and 6, age was significantly associated with a lower EE and a higher PA. Models 3, 6, and 9 in Table 2 incorporated type of institution type. GNS in residential care homes did not differ from those in nursing homes in their levels of EE, DP, and PA, after staff characteristics had been accounted for.

Resident characteristics, staff characteristics and burnout, institutional characteristics and resident well-being

Table 3 presents the characteristics of residents. Table 4 shows results from three-level multiple linear modeling and reveals how characteristics of residents, characteristics and burnout of nursing

Table 1
Means, standard deviations and characteristics of geriatric nursing staff (N = 315).

Variable	M (SD) or percentage
Age	44.68 (11.07)
Gender: female	91.3%
Education	
Elementary school	9.0%
Junior high school	20.6%
Senior high school	38.0%
College or above	32.5%
Years of experience (years)	5.31 (5.52)
Income (NTD)	
Less than 25,000	27.0%
25,000–29,999	36.2%
30,000–34,999	28.1%
35,000 or above	8.7%
Burnout	
EE (0–53)	17.72 (12.00)
DP (0–25)	3.87 (4.92)
PA (0–48)	36.54 (9.95)

Note. NTD = New Taiwan Dollars. EE = emotional exhaustion. DP = depersonalization. PA = personal accomplishment.

Table 2
Predictors of geriatric nursing staff burnout by dimension: Parameter estimates from two-level multilevel linear modeling

Variables	EE			DP			PA		
	Model 1 Estimate (SD)	Model 2 Estimate (SD)	Model 3 Estimate (SD)	Model 4 Estimate (SD)	Model 5 Estimate (SD)	Model 6 Estimate (SD)	Model 7 Estimate (SD)	Model 8 Estimate (SD)	Model 9 Estimate (SD)
Nursing Staff characteristics									
Age		−0.177(0.069)*	−0.167 (0.068)*		−0.012 (0.030)	−0.008 (0.030)		0.129 (0.059)*	0.132 (0.059)*
Gender(ref. male)		−2.358(2.180)	−2.496 (2.172)		−1.049 (0.939)	−1.099 (0.937)		0.474 (1.884)	0.430 (1.885)
Education (ref. college or above)									
Elementary school		−0.578 (2.622)	−1.108 (2.628)		0.206 (1.122)	0.011 (1.126)		1.901 (2.229)	1.756 (2.244)
Junior high school		3.504 (1.894)	3.414 (1.887)		0.677 (0.818)	0.644 (0.816)		0.424 (1.652)	3.967 (1.653)
Senior high school		0.778 (1.612)	0.377 (1.622)		0.128 (0.694)	−0.025 (0.700)		1.437 (1.394)	1.319 (1.410)
Years of experience		−0.158(0.135)	−0.154 (0.135)		−0.052 (0.057)	−0.050 (0.057)		−0.089 (0.112)	−0.088 (0.113)
Income (NTD) (ref:35,000 or above)									
Less than 25,000		−4.150 (2.680)	−3.345 (2.707)		−0.555 (1.136)	−0.263 (1.149)		−0.012 (2.224)	0.208 (2.257)
25,000 to 29,999		−1.603 (2.526)	−1.089 (2.531)		0.410 (1.074)	0.595 (1.077)		−1.477 (2.113)	−1.334 (2.126)
30,000 to 34,999		−3.916 (2.561)	−3.718 (2.552)		−0.459 (1.088)	−0.396 (1.085)		0.687 (2.140)	0.738 (2.140)
Institution characteristics									
Institution type(ref. residential care homes)			2.772 (1.577)			0.964 (0.651)			0.673 (1.241)
Variance components									
Direct care worker	107.539 (10.406)	95.643 (9.409)	94.760 (9.268)	19.181 (1.987)	18.653 (1.947)	18.598 (1.936)	83.872 (7.518)	81.129 (7.295)	81.151 (7.297)
Facility	32.263 (9.771)	38.569 (9.990)	38.281 (9.772)	5.150 (1.968)	5.365 (1.982)	5.241 (1.955)	13.238 (5.167)	12.515 (5.030)	12.388 (5.021)

*Note.*NTD = New Taiwan Dollars. EE = Emotional Exhaustion. DP = Depersonalization. PA = Personal Accomplishment.
*$p \le .05$; **$p \le .01$; ***$p \le .001$.

Table 3
Means, standard deviations and characteristics of residents ($N = 590$).

Variable	*M* (SD) or percentage
Age	77.71 (9.49)
Gender: female	56.3%
Education	
No formal education	49.2%
Elementary school	25.6%
Junior high school or above	25.3%
Cognitive impairment (0–10)	2.88 (2.75)
Physical functioning (0–100)	59.39 (29.54)
Self-rated health (1–5)	3.19 (0.99)
Residential satisfaction (1–5)	3.76 (0.84)
Perceived QOL (1–5)	3.64 (0.85)
Depressive symptoms (10–28)	14.99 (3.59)

Note. QOL = quality of life.

staff, and institutional characteristics were related to the residential satisfaction of older individuals. Model 1 reveals that 79% [0.563/(0.563 + 0.033 + 0.113)] of the overall variability in residential satisfaction scores arose from variation among LTC residents; 5% [0.033/(0.563 + 0.033 + 0.113)] arose from differences among GNS, and 16% [0.113/(0.563 + 0.033 + 0.113)] arose from variation among facilities. In Model 2, when other resident characteristics were considered, high self-rated health was related to high residential satisfaction. Model 3 incorporated nursing staff characteristics and the three dimensions of burnout, controlling for characteristics of residents. Age and high DP among GNS were associated with lower residential satisfaction. Institutional characteristics were included in the analysis in Model 4. The results of the analysis suggested that older people in residential care homes and nursing homes did not differ significantly in residential satisfaction.

Table 5 presents the results obtained using three-level multilevel models when residents' perceived QOL was the outcome variable. In Model 1, 87% [0.637/(0.637 + 0.001 + 0.093)] of the overall variation in perceived QOL scores was due to differences among older LTC residents; 1% [0.001/(0.637 + 0.001 + 0.093)] from variation among GNS, and 13% [0.093/(0.637 + 0.001 + 0.093)] from differences among facilities. In Model 2, male residents had higher perceived QOL than females, after taking other resident characteristics into account. A high self-rated health score was associated with high perceived QOL. In Model 3, lower staff DP was associated with higher perceived QOL among residents after adjustment for the characteristics of residents and GNS. According to Model 4, with resident, nursing staff characteristics and staff burnout controlled for, residents in different institutions did not differ significantly in their levels of perceived QOL.

Table 6 summarizes the results of three-level multilevel models when the outcome variable was the residents' depressive symptom score. In Model 1, 93% [11.961/(11.961 + 0.026 + 0.864)] of the overall variability in depressive symptom scores resulted from differences among LTC residents, nearly 1% [0.026/(11.961 + 0.026 + 0.864)] from variation among GNS, and 6.7% [0.864/(11.961 + 0.026 + 0.864)] from variation among facilities. In Model 2, better physical functioning and higher self-rated health were related to fewer depressive symptoms, controlling for other resident characteristics. In Model 3, after adjustment for characteristics of residents, high staff DP was associated with more depressive symptoms in old LTC residents. According to Model 4, the characteristics of residents and staff, including staff burnout, were controlled for, old residents in different types of institution did not differ significantly in the degree of their depressive symptoms.

In sum, Tables 4–6 indicated that the first research hypothesis was partially supported when DP, but not EE and PA, was consistently related to the three resident well-being outcomes.

Table 4
Parameter estimates from three-level multilevel linear modeling on predictors of residential satisfaction ($N = 590$).

Variables	Model 1	Model 2	Model 3	Model 4
	Estimate (SD)	Estimate (SD)	Estimate (SD)	Estimate (SD)
Resident characteristics				
Age		0.007 (0.004)	0.006 (0.004)	0.006 (0.004)
Gender (ref. male)		0.109 (0.074)	0.111 (0.074)	0.111 (0.074)
Education (ref. Junior high school or above)				
No formal		0.026 (0.091)	0.016 (0.090)	0.020 (0.091)
Elementary school		−0.018 (0.093)	−0.014 (0.092)	−0.011 (0.093)
Cognitive impairment		−0.022 (0.014)	−0.016 (0.014)	−0.016 (0.014)
Physical functioning		−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
Self-rated health		0.157 (0.035)***	0.158 (0.035)***	0.157 (0.035)***
Nursing staff characteristics				
Age			−0.008 (0.004)*	−0.008 (0.004)*
Gender (ref. male)			0.153 (0.142)	0.149 (0.143)
Education (ref. college or above)				
Elementary school			0.095 (0.168)	0.089 (0.169)
Junior high school			0.164 (0.117)	0.163 (0.117)
Senior high school			−0.067 (0.099)	−0.073 (0.100)
Years of experience			0.012 (0.008)	0.012 (0.008)
Income (NTD) (ref: 35,000 or above)				
Less than 25,000			0.272 (0.152)	0.280 (0.154)
25,000–29,999			0.112 (0.140)	0.118 (0.141)
30,000–34,999			0.013 (0.143)	0.015 (0.143)
EE			0.004 (0.004)	0.004 (0.004)
DP			−0.021 (0.009)*	−0.021 (0.009)*
PA			0.001 (0.004)	0.001 (0.004)
Institution characteristics				
Institution type (ref. residential care homes)				0.028 (0.089)
Variance components				
Resident	0.563 (0.046)	0.518 (0.043)	0.517 (0.043)	0.517 (0.0473)
Geriatric care worker	0.033 (0.047)	0.063 (0.049)	0.045 (0.049)	0.044 (0.049)
Facility	0.113 (0.041)	0.093 (0.040)	0.080 (0.040)	0.080 (0.040)

Note. NTD = New Taiwan Dollars. EE = emotional exhaustion. DP = depersonalization. PA = personal accomplishment.
*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$.

Table 5
Parameter estimates from three-level multilevel linear modeling on predictors of residents' perceived quality-of-life ($N = 590$).

Variables	Model 1	Model 2	Model 3	Model 4
	Estimate (SD)	Estimate (SD)	Estimate (SD)	Estimate (SD)
Resident characteristics				
Age		−0.003 (0.004)	−0.004 (0.004)	−0.004 (0.004)
Gender (ref. male)		0.215 (0.071)**	0.219 (0.072)**	0.217 (0.072)**
Education (ref. junior high school or above)				
No formal		−0.003 (0.088)	−0.017 (0.087)	−0.028 (0.088)
Elementary school		−0.098 (0.091)	−0.098 (0.090)	−0.108 (0.091)
Cognitive impairment		−0.014 (0.013)	−0.007 (0.013)	−0.006 (0.013)
Physical functioning		0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Self-rated health		0.326 (0.034)***	0.322 (0.034)***	0.323 (0.034)***
Nursing staff characteristics				
Age			−0.002 (0.004)	−0.002 (0.004)
Gender (ref. male)			0.037 (0.130)	0.048 (0.131)
Education (ref. college or above)				
Elementary school			−0.054 (0.154)	−0.040 (0.155)
Junior high school			−0.050 (0.107)	−0.048 (0.107)
Senior high school			−0.132 (0.090)	−0.116 (0.091)
Years of experience			0.013 (0.007)	0.012 (0.007)
Income (NTD) (ref: 35,000 or above)				
Less than 25,000			0.201 (0.134)	0.180 (0.136)
25,000–29,999			−0.013 (0.121)	−0.029 (0.122)
30,000–34,999			0.015 (0.125)	0.011 (0.124)
EE			0.002 (0.003)	0.002 (0.003)
DP			−0.020 (0.008)*	−0.019 (0.008)*
PA			−0.004 (0.004)	−0.004 (0.004)
Institution characteristics				
Institution type				−0.070 (0.078)
Variance components				
Resident	0.637 (0.043)	0.542 (0.037)	0.541 (0.038)	0.541 (0.038)
Geriatric care worker	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Facility	0.093 (0.034)	0.066 (0.028)	0.042 (0.026)	0.042 (0.026)

Note. NTD = New Taiwan Dollars. EE = emotional exhaustion. DP = depersonalization. PA = personal accomplishment.
*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$.

Likewise, the findings also approved the second hypothesis and confirmed the decisive role of DP in determining the well-being of older residents.

Discussion

This investigation simultaneously incorporates institutional-, staff- and resident-level data to evaluate the effect of GNS burnout on the well-being of LTC residents in Taiwan. Based on relatively large numbers of institutions, nursing staff and residents, DP was identified as the key component of GNS burnout that affected the well-being of LTC residents. The results herein advance current knowledge and provide evidence that reducing GNS burnout, especially the symptoms of DP, has a great potential to improve the well-being of old residents in LTC settings.

In this study, GNS at LTC institutions were found to have similar levels of EE and PA to their counterparts in the US[11] and the UK[17] However, earlier investigations have indicated that GNS at LTC facilities report a low-to-moderate level of DP, ranging from 4.75 to 5.9.[11,17] The DP score of the sample in this study was much lower (DP = 3.87). However, this difference may not support the claim that GNS who serve LTC residents in Taiwan had lower DP than those in the West. Recent studies have indicated that, because the wording in the DP subscale might not be acceptable to the professionals, staff who work with people with intellectual disabilities and dementia are more likely to report a lower level of DP than those in other human service professions, even though they experience comparable levels of EE or PA.[22,23] The results herein suggested that this finding may apply to GNS in Taiwan—the wording associated with the DP subscale may be at odds with the culture of care and the Chinese social norm of respecting older individuals, causing nursing staff to suppress their feelings or reduce their scores in this burnout domain.

Consistent with the literature, this study confirmed that age was negatively related to GNS burnout.[11,14] The results of the analyses further revealed that older GNS expressed lower EE and higher PA than their younger colleagues. As noted by Peisah et al.[24], the variation of burnout with the age of health professionals may arise from "natural selection". In this instance, GNS who experience greater burnout early in their career may be more likely to quit. Therefore, older GNS may be more robust against work stress, and so can be regarded as "survivors" of burnout. Another possible explanation of the findings is that, as nursing staff age, they become more mature and their self-efficacy increases. They also become more conscious of the risk of burnout and become better able to develop measures to protect themselves and strategies for personal achievement, thus reducing EE and increasing PA scores.[24–26]

As hypothesized, this investigation found that a high level of DP among GNS was associated with a low level of residential satisfaction and perceived QOL, and a high level of depressive symptoms among old clients in LTC. Herein, DP appears to be the core component of burnout that determines how nursing staff burnout may relate to the well-being of residents. According to Chou[27], the personal nature and long duration of care provide opportunities to develop close emotional bonds between nursing staff and residents. DP represents the interpersonal component of burnout.[28] When experiencing DP, nursing staff tend to show less personal respect, express more negative, cynical attitudes and feelings toward residents, and even dehumanize their clients as deserving of their troubles.[7,17] While older LTC residents greatly emphasize good nursing-resident relationships and the positive caring attitudes that are exhibited by nursing staff as the key elements of high-quality care,[29] the symptoms of DP can manifest

Table 6
Parameter estimates from three-level multilevel linear modeling on predictors of residents' depressive symptoms ($N = 590$).

Variables	Model 1	Model 2	Model 3	Model 4
	Estimate (SD)	Estimate (SD)	Estimate (SD)	Estimate (SD)
Resident characteristics				
Age		0.015 (0.016)	0.020 (0.016)	0.020 (0.016)
Gender (ref. male)		−0.245 (0.301)	−0.318 (0.305)	−0.315 (0.306)
Education (ref. junior high school)				
No formal education		−0.032 (0.372)	−0.001 (0.371)	0.017 (0.375)
Elementary school		−0.079 (0.386)	−0.139 (0.385)	−0.124 (0.388)
Cognitive impairment		0.046 (0.055)	0.022 (0.055)	0.021 (0.055)
Physical functioning		−0.016 (0.005)***	−0.015 (0.005)**	−0.015 (0.005)**
Self-rated health		−1.239 (0.143)***	−1.223 (0.144)***	−1.224 (0.144)***
Nursing staff characteristics				
Age			0.012 (0.016)	0.012 (0.016)
Gender (ref. male)			0.459 (0.553)	0.439 (0.555)
Education (ref. college or above)				
Elementary school			0.057 (0.657)	0.035 (0.660)
Junior high school			0.043 (0.455)	0.041 (0.455)
Senior high school			−0.089 (0.380)	−0.114 (0.387)
Years of experience			−0.041 (0.028)	−0.040 (0.028)
Income (NTD) (ref: 35,000 or above)				
Less than 24,999			−1.011 (0.566)	−0.978 (0.574)
25,000–29,999			−0.230 (0.512)	−0.204 (0.517)
30,000–34,999			−0.570 (0.527)	−0.566 (0.526)
EE			−0.012 (0.014)	−0.013 (0.014)
DP			0.071 (0.034)*	0.071 (0.034)*
PA			0.012 (0.017)	0.012 (0.016)
Institution characteristics				
Institution type				0.115 (0.331)
Variance components				
Resident	11.961 (0.962)	10.029 (0.659)	9.924 (0.653)	9.935 (0.655)
Geriatric care worker	0.026 (0.795)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Facility	0.864 (0.556)	0.852 (0.401)	0.696 (0.383)	0.679 (0.385)

Note. NTD = New Taiwan Dollars. EE = emotional exhaustion. DP = depersonalization. PA = personal accomplishment.
*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$.

directly in the ways nurses execute their responsibilities, interact with residents, and respond to their needs. Consequently, DP symptoms can damage staff-resident relationships and reduce the quality of care as experienced by residents, and so can have a stronger effect on the well-being of residents than the other two aspects of burnout. Furthermore, this investigation provides evidence that DP among GNS can adversely affect multiple well-being outcomes among older residents in LTC facilities, including reducing their satisfaction with the institution, reducing their perceived QOL, and increasing their symptoms of depression.

Although DP among GNS was related to resident well-being, the characteristics of residents appeared to be more significant predictors of their well-being. Among these, self-rated health seems to be the strongest determinant of their well-being. Better self-rated health was consistently associated with higher residential satisfaction, higher perceived QOL, and fewer depressive symptoms among LTC residents. Other resident characteristics such as age, degree of cognitive impairment, and physical functioning status, were associated with residential satisfaction, perceived QOL or depressive symptoms in bivariate analyses. Their effects on the well-being of residents greatly weakened or attenuated to insignificant when self-rated health was accounted for. According to Bombak[30], the self-rating of health allows an individual to prioritize and evaluate various aspects of health. For persons with physical or cognitive functional limitations, a self-rating is not only a subjective appraisal of their internal perceptions and impressions of their own health status, but also a manifestation of re-prioritization of needs, adaptation, and reconciliation with life after encountering the difficulties. Therefore, self-rated health can function as a stronger and more sensitive predictor of an individual's well-being than other objective indicators, especially for those who confront health-related or medical hardships.

Implications for practice

This research supports the following recommendations for nursing practice. First, younger GNS may suffer from higher EE and lower PA. Nurses who have less experience perceived higher EE than their more senior colleagues. Accordingly, interventions or programs can be designed specifically for younger or junior GNS to reduce their feelings of emotional exhaustion and promote their feelings of competence or achievement when working with older residents. Second, given the critical effect of the DP domain of burnout on the well-being of LTC residents, the regular assessment of nursing staff burnout, and especially their degree of DP, is crucial. Efforts should also be made to mitigate the emergence of DP among GNS. For example, several factors, such as high workload, many role conflicts, high job demand, and low support from supervisors and coworkers, can be antecedents of high DP among GNS in LTC settings.[11,14] Nursing managers can address these issues by developing more efficient and reasonable work plans, giving nursing staff more congruent and realistic roles and expectations, and improving supervisory support and guidance. Managers can also give GNS greater autonomy to improve their sense of control over their work and increase the flexibility of institutional mandates that govern the duties of GNS.[5,11,31] Support and education are required to help foster positive interactions and relationships between GNS with residents. For example, the use of derogatory or abstract language and jargons should be avoided, and extended conversations with residents should be encouraged.[31]

Limitations

Despite its important findings, this study has several limitations, leading to suggestions for future research. First, the relationship

between GNS burnout and resident well-being might be dynamic, but the cross-sectional nature of the data precluded a more rigorous examination of causal relationships. For instance, the analytical results suggested that GNS burnout might affect residents' well-being outcomes. However, residents' physical and emotional well-being outcomes could also trigger staff perceptions of burnout. Hence, longitudinal studies of the temporal order of GNS burnout and resident well-being would be useful. Second, multilevel analyses suggested that type of institution and the sociodemographic characteristics of nursing staff explain a small fraction of the variances in staff burnout and resident well-being. Future research should consider more personal factors (such as coping methods, work or family support) and work environmental factors (such as work load, role conflict, role ambiguity), and examine their relationships with GNS burnout and the well-being of residents. Third, since this study used a convenience sample, its generalizability may be limited by the characteristics of that sample. Fourth, the low DP score that was obtained in this study suggests that self-reported information should not be completely relied upon, and that multiple methods for collecting data from various perspectives would better capture the construct, especially when it is applied to GNS in different cultures.

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Supplementary data

Supplementary data related to this article can be found at doi:10.1016/j.gerinurse.2018.12.010.

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