RESEARCH ARTICLE

International Journal of
Geriatric Psychiatry WILEY

Nursing home staff mental health during the Covid-19 pandemic in the Republic of Ireland

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Abstract

Background: Nursing homes for older adults have been disproportionately affected by the Covid-19 pandemic with increased mortality of residents and staff distress.

Objective: To quantify the mental health of nursing home staff during the Covid-19 pandemic in the Republic of Ireland.

Design/Methods: Cross-sectional anonymous study of Republic of Ireland nursing home staff ($n = 390$) during the third wave of the Covid-19 pandemic. Online survey collecting demographic information, Covid-19 exposure history and mental health measures.

Results: There were significant differences between nurses, healthcare assistants (HCA) and non-clinical staff history in age, ethnicity, years' experience, history of Covid-19 infection and contact with Covid-19 positive acquaintances. Moderate–severe post-traumatic stress disorder symptoms were found in 45.1% (95% confidence interval [CI] 40.2%–50.1%) of all staff. A World Health Organisation-5 (WHO-5) wellbeing index score ≤32, indicating low mood, was reported by 38.7% (95% CI, 33.9%–43.5%) of staff; significantly more nurses reported low mood. Suicidal ideation and suicide planning were reported, respectively, by 13.8% (95% CI, 10.4%–17.3%) and 9.2% (95% CI, 6.4%–12.1%) of participants with no between-group differences. HCAs reported a significantly higher degree of moral injury than non-clinical staff. Nurses were more likely to use approach coping styles than non-clinical staff. Work ability was insufficient in 24.6% (95% CI 20.3%–28.9%) of staff.

Conclusion: Nursing home staff report high levels of post-traumatic stress, mood disturbance and moral injury during the Covid-19 pandemic. Differences in degree of moral injury, wellbeing and coping styles were found between staff groups, which need to be incorporated into planning supports for this neglected workforce.

KEYWORDS
Covid-19, mental health, moral injury, nursing homes, post-traumatic stress

Key points

- There are high prevalences of post-traumatic stress symptoms and low mood and a high degree of moral injury in Irish nursing home staff during the Covid-19 pandemic

- High prevalences of suicidal ideation (13.8%) and planning (9.2%) were reported during the previous week
- Significantly, more nurses than other staff groups reported poor wellbeing but nurses were more likely to use adaptive coping styles than non-clinical staff
- Healthcare assistants reported significantly higher levels of moral injury than non-clinical staff

1 | INTRODUCTION

Nursing homes for older adults have been disproportionately affected by the Covid-19 pandemic.[1] In Western Europe and the United States, the deleterious impact on nursing homes became evident during the pandemics' first wave. By the end of the first wave, in mid-2020, nursing home residents accounted for 40% of Covid-19 deaths in the United States, 56% in Ireland, 47% in the United Kingdom and 40% in Italy.[2–6] Nursing home residents are at higher risk of severe infection and mortality due to older age, common comorbidities, and the tendency towards high transmission rate of infectious diseases in congregate settings.[7,8] Consequently, significant changes in care and practice have been introduced in nursing homes, for example, banning group activities, visiting restrictions and increased use of personal protective equipment.[4]

The combined stresses of witnessing deaths of residents in a rapidly changing work environment, while living in a heavily restricted society, could adversely affect nursing home staff mental health.[4] Qualitative studies have revealed high degrees of perceived distress.[9–11] However, to our knowledge, there has to date been only one quantitative such study of nursing home staff, from Italy following the pandemic's first wave.[12] This study (n = 1069) focused on symptoms of generalised anxiety disorder and post-traumatic stress disorder (PTSD) and estimated the prevalence of moderate-to-severe symptoms of either disorder at 43% (95% confidence interval [CI], 37%–49%).[12] Outside of nursing homes, much of the research to date has focused on hospital workers. A recent meta-analysis of studies in hospital healthcare workers (HCWs) during the Covid-19 pandemic found that the estimated pooled prevalence of PTSD symptoms was 21.5% (95% CI, 11.2%–31.8%), raising the possibility that nursing home staff may be even more distressed than hospital staff.[12,13]

Of increasing interest is moral injury in HCWs, that is, distress experienced when an individual witnesses or engages in acts that contradict their moral and ethical beliefs.[14] This has traditionally been studied in military populations exposed to combat but severe difficulties in providing optimal care during a pandemic could provoke similar reactions in HCWs.[15,16] Surveys of US hospital workers have demonstrated high levels of moral injury over the course of the Covid-19 pandemic.[16,17]

Considering these international findings, we aimed to estimate the levels of post-traumatic stress and wellbeing in nursing home staff in the Republic of Ireland during the Covid-19 pandemic. We also appraised self-rated suicidal ideation and planning, moral injury, coping styles, perceptions about the pandemic and work ability.

Finally, we explored if there were differences in these problems between different types of staff.

2 | METHODS

2.1 | Study design and setting

This cross-sectional, online, anonymous survey was approved by St. Patrick's Mental Health Services Research Ethics Committee. There are 578 nursing homes in the Republic of Ireland; the majority are in the private sector.[18] The nursing homes selected were those long-term residential care facilities for older adults with onsite nursing support affiliated with Nursing Homes Ireland (NHI, www.nhi.ie), the national representative body for the private and voluntary nursing home sector, representing 90% of such nursing homes in the state. All nursing homes on the NHI mailing list were contacted (n = 394). Convenience sampling was used with staff self-selecting for participation. Information directing participants towards psychological supports was provided.

2.2 | Recruitment and data collection

Nursing homes were recruited from across the Republic of Ireland for six weeks from 20 November 2020 to 4 January 2021 during the third wave of Covid-19 in Ireland.[19] Persons-in-charge (PICs) in all 394 NHI-affiliated nursing homes were contacted via email, telephone and post and asked to inform their staff about the survey. The survey was also advertised on NHI's social media accounts.

Data were collected online using Qualtrics Core XM (Qualtrics). Participation was voluntary. Participant information was provided and consent obtained at the survey beginning. PICs who agreed to participate were also asked to complete an online anonymous form on Google Forms (Google) giving a simple breakdown of staff numbers in their nursing home by role. This also provided information on the number of nursing homes where the survey was promoted by PICs.

2.3 | Measures

Basic demographic information was recorded along with profession, regional work location, years of experience, living arrangements, pre-

existing medical and psychiatric conditions, extent of exposure to Covid-19, quarantine experience and history of contact with Covid-19-positive acquaintances.

The 22-item Impact of Event Scale-Revised (IES-R) was used to assess post-traumatic stress symptoms over the previous seven days with subscales corresponding to the three symptom domains of PTSD (hyperarousal, intrusion and avoidance); a cut-off of ≥ 26 indicated the presence of moderate-severe symptoms.[20] Staff wellbeing was assessed with the World Health Organisation's Well-Being Index (WHO-5), a five-item self-rated measure that asks staff to report how they have been feeling over the past 2 weeks; a score of 21–32 indicates low mood and a score ≤ 20 indicates likely depression.[21] Suicidal ideation and planning over the previous 7 days were appraised using two Likert scale items derived from the Columbia Suicide Severity Rating Scale (C-SSRS); responses were dichotomised based on presence/absence of suicidal ideation or planning.[22] Moral injury was assessed using the Moral Injury Events Scale (MIES), adapted for healthcare staff during the Covid-19 pandemic; this nine-item scale was originally developed to assess moral injury in combat veterans.[14] Staff were asked if they agreed with statements relating to moral injury over the course of the Covid-19 outbreak. The scale has three subdomains: 'Perceived transgressions by self' (i.e., where staff felt they had violated their own moral code), 'Perceived transgressions by others' (i.e., where staff believed they had witnessed others act in a way that violated their moral beliefs) and 'Betrayal' (i.e., perceived betrayal by previously trusted leadership). The Brief Coping Orientation to Problems Experienced (Brief-COPE) Scale was used to survey staff adaptive (approach; range 12–48) and maladaptive (avoidance; range 12–48) coping responses; staff were asked to identify which coping styles they had used over the course of the pandemic.[23] This scale also includes items for humour and religion.

We included a 15-item questionnaire adapted from a study assessing HCW perceptions of the Severe Acute Respiratory Syndrome (SARS) outbreak.[24] This comprised three Likert scale items for each of the following groups of perceptions: health fear, social isolation, doubts about protective equipment, adequacy of training and support and job stress.[25] Items were rated 1–6; higher scores indicated higher levels of dissatisfaction with each statement. We included an additional Likert scale item assessing altruistic acceptance of risk; this was rated 1–6 with higher scores indicating higher degrees of altruism. A sense of altruism has been reported to mediate the psychological impact of infectious disease outbreaks on HCWs.[26]

We assessed staff perceptions of work ability using the Work Ability Score (WAS), derived from the Work Ability Index (WAI), an occupational health instrument for identifying staff in need of supportive measures.[27] This asks participants to rate their current ability to cope with work demands compared to their lifetime best on a scale of 1–10, with 10 being their lifetime best; a score ≤ 5 indicates insufficient perceived work ability. A free text response box was provided at the end of the survey; analysis of these qualitative data will be separately reported.

2.4 | Statistical analysis

Data were analysed in Excel (Microsoft) and SPSS 26 (IBM). Using a 95% CI with a 5% margin of error, our minimum sample size was determined to be 360 based on previous literature demonstrating that 39% of nursing home staff scored ≥ 26 on the IES-R during the Covid-19 pandemic.[12] We examined demographic characteristics of the sample divided into three groups: nurses, healthcare assistants (HCA) and non-clinical staff. These groups were further categorised based on cut-off scores for the WHO-5, IES-R and WAS and the presence/absence of suicidal ideation or planning. Chi-square tests were used to analyse categorical variables and one-way ANOVAs for means. Post-hoc analyses were performed for significant between-group differences. Significance level was set at 0.05. We did not adjust for multiple testing but regression analysis was performed using a generalised linear model to adjust for significant differences in demographic features (i.e., age, years of experience, ethnicity), personal Covid-19 infection history and exposure to Covid-19-infected acquaintances. Data are reported as means (standard deviation) and proportions (percentages) as appropriate.

3 | RESULTS

3.1 | Study participants

PICs from 64 (16.5%) of 394 relevant nursing homes provided information on staff ($n = 3816$) breakdown (Table 1). The total number of survey participants was 390 (10.2%), comprising 120 nurses, 172 HCAs and 98 non-clinical staff, representing 16.2%, 8.9% and 8.5% of each occupational group, respectively. The geographical distribution of survey participants corresponding to regional populations is shown in Table 1.

Demographic characteristics of survey participants are summarised in Table 2. Most nursing home staff were female (86.4%), lived with their family (80%) and were of white Irish/British origin (83.3%). The majority of staff had no pre-existing physical illness (67.4%) or mental illness (77.9%). There were significant differences between nurses, HCAs and non-clinical staff in age ($p < 0.001$), ethnicity ($p < 0.001$) and years' experience ($p < 0.001$). HCAs were proportionally the youngest group. There were significantly more HCAs aged ≤ 30 ($z = 4.6$; Table S1) and significantly fewer HCAs aged ≥ 51 ($z = -4.4$). Significantly fewer nurses were of white ethnicity ($z = -3.5$) and non-clinical staff were more likely to be of white ethnicity ($z = 4.5$). Nurses were less likely to report <5 years' experience ($z = -6.1$) and more likely to report ≥ 10 years' experience ($z = 5.4$).

3.2 | Exposure to Covid-19

Nursing home staff experience of exposure to Covid-19 is presented in Table 3. Almost one-third of staff reported having quarantined

TABLE 1 Number of staff in participating nursing homes, survey participants and location of participants' nursing homes in the Republic of Ireland, by role

	Total	Nurses	HCAs	Non-clinical
Total number of staff in the 64 participating nursing homes, n (%)	3816 (100%)	741 (19.4%)	1931 (50.6%)	1144 (30.0%)
Mean number of staff in each nursing home, Mean (SD)	59.6 (33.9)	11.6 (6.7)	30.2 (17.9)	17.9 (11.0)
Survey participants, n (% of total number of participants)	390 (100%)	120 (30.8%)	172 (44.1%)	98 (25.1%)
Participants' nursing home location by province[a], n (%)				
Connacht (11.7%)	70 (17.9%)	23 (19.2%)	29 (16.9%)	18 (18.4%)
Leinster (56.0%)	173 (44.4%)	53 (44.2%)	78 (45.3%)	42 (42.9%)
Munster (27.3%)	131 (33.6%)	38 (31.7%)	57 (33.1%)	36 (36.7%)
Ulster (5.0%)	16 (4.1%)	6 (5.0%)	8 (4.7%)	2 (2.0%)

Abbreviations: HCAs, healthcare assistants; SD, standard deviation.

[a]Populations of provinces given as percentage of total population of the Republic of Ireland (4.9 million).

(31.3%). A majority reported no history of Covid-19 infection (80.3%). Of those who had contracted Covid-19, only 4.8% reported having symptoms for ≥9 weeks but 33.8% reported not having fully recovered. Most nursing home staff reported no history of caring for residents with Covid-19 (63.9%), although 67% reported contact with Covid-19-infected acquaintances. There were significant differences between groups in their history of Covid-19 infection ($p = 0.001$) and contact with Covid-19-positive acquaintances ($p = 0.001$). Nursing staff were more likely ($z = 3.9$; Table S2) and HCAs were less likely ($z = -2.4$) to have had exposure to Covid-19-positive acquaintances. Significantly fewer non-clinical staff had contracted Covid-19 ($z = -3.6$).

3.3 | Mental health measures

Mental health outcomes are summarised in Table 4. The prevalence of all staff meeting the threshold for moderate–severe PTSD symptoms was 45% (95% CI 40%–50%) with no significant differences between groups for total or subdomain IES-R scores.

The number of staff reporting a WHO-5 score ≤32, indicating poor wellbeing, was 38.7% (95% CI 33.9%–43.6%). Significant differences between groups were noted ($p = 0.015$), with more nurses reporting poor wellbeing ($z = 2.6$; Table S3) and more HCAs reporting normal wellbeing ($z = 3.1$). Scores consistent with likely major depression (WHO-5 ≤20) were reported by 20% (95% CI 16%–24%) with no differences between groups.

Thoughts of suicide were reported by 13.8% (95% CI 10%–17%) of staff over the past 7 days and 9% (95% CI 6%–12%) reported at least some planning to end their lives, with no differences between groups. With regards to the severity of suicidal ideation and planning, 10 staff (2.5%) reported having suicidal ideation 'Quite a bit' or 'Extremely'; 8 staff (2.1%) reported having similar levels of suicidal planning (see Figures S1 and S2). There were no significant differences between groups by role in terms of the severity of suicidal ideation or planning.

Moral Injury Events Scale (MIES) mean score for the total group was 20.8 (9.1); of the subdomains, the mean 'Transgression by others'

score was 5.9 (3.0); 'Transgression by self' mean was 7.9 (4.8); and the 'Betrayal' mean was 7.4 (4.0). There were significant differences between groups on the MIES total score ($p = 0.027$, adjusted $p = 0.038$) and the MIES 'Transgression by others' subscale ($p = 0.030$, adjusted $p = 0.048$). HCAs reported a significantly higher degree of moral injury than non-clinical staff (mean difference [MD] = 3.3, standard error [SE] = 1.2; Table S4) and a significantly higher 'Transgression by others' score than non-clinical staff (MD = 1.0, SE = 0.381). A difference between groups was noted on the MIES betrayal subscale; however, this did not survive adjustment.

The groups differed in use of approach (adaptive) coping style ($p = 0.001$, adjusted $p = 0.045$), with nurses using an approach (adaptive) coping style more than non-clinical staff (MD = 4.2, SE = 1.09; Table S5). There was a significant difference for use of religion as a coping mechanism but this did not survive adjustment ($p = 0.049$, adjusted $p = 0.116$). There were no differences noted for using avoidant (maladaptive) coping styles or humour.

On average, staff broadly agreed with statements regarding fear of contracting Covid-19 and job-related stress (Table 4). To a slightly lesser extent, they also agreed with statements indicating a degree of concern about social stigma and social isolation in relation to work. They expressed less concern about nursing home systems and processes in place in relation to the pandemic and infection protection measures (i.e., face masks, eye shields and handwashing). They agreed with an altruistic statement about accepting risks involved in caring for residents with Covid-19. There were no significant differences between groups regarding these perceptions.

Work ability, as self-rated by the Work Ability Score, was deemed insufficient by 24.6% (95% CI 20.3%-28.9%) of staff, with no differences between groups.

4 | DISCUSSION

This is the first systematically conducted study of Republic of Ireland nursing home staff experience during the Covid-19 pandemic and only the second such report internationally despite

TABLE 2 Demographic characteristics of nursing home staff, by role

	Total n (%)	Nurses n (%)	HCAs n (%)	Nonclinical n (%)	Chi square χ^2	p value
Total	390 (100%)	120 (30.8%)	172 (44.1%)	98 (25.1%)		
Age (years)						
≤30	85 (21.8%)	13 (10.8%)	56 (32.6%)	16 (16.3%)		
31–50	187 (47.9%)	59 (49.2%)	84 (48.8%)	44 (44.9%)		
≥51	118 (30.3%)	48 (40%)	32 (18.6%)	38 (38.8%)	31.192	<0.001
Gender						
Female	337 (86.4%)	106 (88.3%)	148 (86.0%)	83 (84.7%)		
Male	50 (12.8%)	14 (11.7%)	22 (12.8%)	14 (14.3%)		
Prefer not to say	3 (0.8%)	0 (0.0%)	2 (1.2%)	1 (1.0%)	1.757[a]	0.836
Living arrangements						
Alone	24 (6.2%)	11 (9.2%)	8 (4.7%)	5 (5.1%)		
With family	312 (80.0%)	89 (74.2%)	144 (83.7%)	79 (80.6%)		
With roommates	21 (3.6%)	7 (5.8%)	12 (7.0%)	2 (2.0%)		
Other	33 (8.5%)	13 (10.8%)	8 (4.7%)	12 (12.2%)	11.686	0.069
Ethnicity						
Asian/Asian Irish	21 (5.4%)	19 (15.8%)	2 (1.2%)	0 (0.0%)		
Black/Black Irish	12 (3.1%)	1 (0.8%)	11 (6.4%)	0 (0.0%)		
Mixed race	2 (0.5%)	1 (0.8%)	1 (0.6%)	0 (0.0%)		
Other	6 (1.5%)	2 (1.7%)	4 (2.3%)	0 (0.0%)		
SE Asian/SE Asian Irish	17 (4.4%)	8 (6.7%)	7 (4.1%)	2 (2.0%)		
White—Irish/British/Other	325 (83.3%)	88 (73.3%)	141 (82.0%)	96 (98.0%)		
Prefer not to say	7 (1.8%)	1 (0.8%)	6 (3.5%)	0 (0.0%)	23.962[c]	<0.001
Years of experience						
<5 years	164 (42.1%)	23 (19.2%)	98 (57.0%)	43 (43.9%)		
5–10 years	76 (19.5%)	27 (22.5%)	26 (15.1%)	23 (23.5%)		
>10 years	150 (38.5%)	70 (58.3%)	48 (27.9%)	32 (32.7%)	45.339	<0.001
Physical illness—pre-existing[b]						
Cancer	3 (0.8%)	2 (1.7%)	0 (0.0%)	1 (1.0%)		
Cardiovascular disease	42 (10.8%)	18 (15.0%)	15 (8.7%)	9 (9.2%)		
Immunosuppression	3 (0.8%)	1 (0.8%)	1 (0.6%)	1 (1.0%)		
Metabolic disease	31 (7.9%)	13 (10.8%)	14 (8.1%)	4 (4.1%)		
Respiratory disease	38 (9.7%)	14 (11.7%)	18 (10.5%)	6 (6.1%)		
Other	33 (8.5%)	12 (10.0%)	10 (5.8%)	11 (11.2%)		
None	263 (67.4%)	71 (59.2%)	121 (70.3%)	71 (72.4%)	5.523[d]	0.063
Mental illness—pre-existing[b]						
Anxiety disorder	62 (15.9%)	9 (7.5%)	38 (22.1%)	15 (15.3%)		
Mood disorder	47 (12.1%)	12 (10.0%)	26 (15.1%)	9 (9.2%)		

(Continues)

TABLE 2 (Continued)

	Total n (%)	Nurses n (%)	HCAs n (%)	Nonclinical n (%)	Chi square χ²	p value
Other	8 (2.1%)	4 (3.3%)	2 (1.2%)	2 (2.0%)		
None	304 (77.9%)	100 (83.3%)	127 (73.8%)	77 (78.6%)	3.738[d]	0.154

Abbreviations: HCAs, Healthcare Assistants; SE Asian, Southeast Asian.

[a]Fisher's exact test.

[b]Respondents could pick multiple answers.

[c]Dichotomised for analysis ('White' and 'Non-White').

[d]Dichotomised for analysis (presence or absence of a pre-existing condition).

TABLE 3 Nursing home staff exposure to Covid-19, by role

	Total n (%)	Nurses n (%)	HCAs n (%)	Nonclinical n (%)	Chi-square χ²	p value
Total	390 (100%)	120 (30.8%)	172 (44.1%)	98 (25.1%)		
Number of Covid-19 positive residents personally attended to						
None	249 (63.8%)	68 (56.7%)	106 (61.6%)	75 (76.5%)		
1–10	67 (17.2%)	27 (22.5%)	28 (16.3%)	12 (12.2%)		
11–20	35 (9.0%)	10 (8.3%)	21 (12.2%)	4 (4.1%)		
21–40	34 (8.7%)	12 (10.0%)	16 (9.3%)	6 (6.1%)		
>40	5 (1.3%)	3 (2.5%)	1 (0.6%)	1 (1.0%)	14.458[a]	0.055
Previously self-quarantined, n (%)	122 (31.3%)	44 (36.7%)	54 (31.4%)	24 (24.5%)	3.723	0.155
Previous Covid-19 infection, n (%)	77 (19.7%)	31 (25.8%)	39 (22.7%)	7 (7.1%)	13.561	0.001
Symptom severity (n = 77)						
No symptoms	14 (18.2%)	5 (16.1%)	8 (20.5%)	1 (14.3%)		
Mild/Moderate	59 (76.6%)	24 (77.4%)	29 (74.4%)	6 (85.7%)		
Severe illness	4 (5.2%)	2 (6.5%)	2 (5.1%)	0 (0.0%)	3.401[a]	0.782
Symptom duration (weeks; n = 63)						
≤4	50 (79.4%)	22 (84.6%)	23 (74.2%)	5 (83.3%)		
5–8	10 (15.9%)	3 (11.5%)	6 (19.4%)	1 (16.7%)		
≥9	3 (4.8%)	1 (3.8%)	2 (6.5%)	0 (0.0%)	1.463[a]	0.902
Fully recovered, n (%) (n = 77)	51 (66.2%)	21 (67.7%)	26 (66.7%)	4 (57.1%)	0.445[a]	0.877
Exposure to Covid-19 positive acquaintances[b,c]						
Colleagues/Acquaintances	203 (52.1%)	71 (59.2%)	82 (47.7%)	50 (51.0%)		
Close friends	76 (19.5%)	33 (27.5%)	31 (18.0%)	12 (12.2%)		
Housemates	3 (0.8%)	1 (0.8%)	0 (0.0%)	2 (2.0%)		
Immediate family	68 (17.4%)	26 (21.7%)	28 (16.3%)	14 (14.3%)		
No contact	127 (32.6%)	23 (19.2%)	67 (39.0%)	37 (37.8%)	15.168[a]	0.001
Acquaintances hospitalised, n (%) (n = 261[d])	88 (33.7%)	33 (34.0%)	41 (39.4%)	14 (23.3%)	4.414	0.110
Acquaintances died, n (%) (n = 261[d])	49 (18.8%)	15 (15.5%)	25 (24.0%)	9 (15.0%)	3.147	0.207

Abbreviation: HCAs, Healthcare Assistants.

[a]Fisher's exact test.

[b]Participants could select multiple answers.

[c]Dichotomised to contact and non-contact for analysis.

[d]Two participants did not answer.

TABLE 4 Nursing home staff mental health outcomes, by role

	Total $n = 390$	Nurses $n = 120$	HCAs $n = 172$	Nonclinical $n = 98$	Chi-square χ^2	p	p (adj.)[c]
IES-R 22, moderate/severe symptoms, % (95% CI)[a]	45 (40–50)	48 (39–57)	42 (35–50)	46 (36–56)	1.02	0.599	0.579
WHO-5[a]							
Poor wellbeing, % (95% CI)	39 (34–44)	52 (43–61)	70 (63–77)	58 (48–68)	12.38	0.015	0.005
Likely major depression, % (95% CI)	20 (16–24)	23 (16–31)	15 (9–20)	26 (17–34)	5.904	0.052	0.069
Suicidal ideation, % (95% CI)[b]	14 (10–17)	13 (7–19)	15 (9–20)	13 (7–20)	0.12	0.941	0.764
Suicidal planning, % (95% CI)[b]	9 (6–12)	7 (2–11)	11 (6–16)	9 (3–15)	1.60	0.445	0.972
WAS, insufficient, % (95% CI)[a]	25 (20–29)	27 (19–35)	26 (19–33)	20 (12–28)	1.29	0.524	0.444
					One-way ANOVA F	p	p (adj.)[c]
IES-R, Mean (SD)							
Total	25.9 (17.6)	27.8 (16.5)	25.1 (18.0)	18.3 (1.8)	1.00	0.369	0.522
Avoidance	9.7 (6.8)	9.9 (6.4)	9.5 (6.9)	9.6 (7.2)	0.12	0.890	0.619
Hyperarousal	5.5 (4.7)	5.9 (4.4)	5.3 (4.9)	5.3 (4.5)	0.67	0.369	0.503
Intrusion	9.6 (6.8)	10.8 (6.6)	9.1 (6.8)	9.0 (7.0)	2.46	0.087	0.345
MIES, Mean (SD)							
Total	20.8 (9.1)	22.5 (10.5)	22.5 (10.5)	19.1 (9.3)	3.66	0.027	0.038
Transgression - others	5.9 (3.0)	5.7 (3.0)	6.3 (3.1)	5.4 (3.0)	3.53	0.030	0.048
Transgression - self	7.9 (4.8)	7.5 (4.3)	8.4 (5.0)	7.4 (4.8)	1.93	0.146	0.066
Betrayal	7.4 (4.0)	7.6 (4.1)	7.8 (4.2)	6.4 (3.4)	3.69	0.026	0.078
Brief-COPE, Mean (SD)							
Avoidant	20.8 (6.3)	21.3 (6.1)	20.9 (6.2)	20.2 (6.6)	0.82	0.442	0.463
Approach	28.8 (8.1)	30.7 (8.0)	28.8 (8.0)	26.5 (7.9)	7.50	0.001	0.045
Religion	3.7 (2.0)	4.0 (2.1)	3.8 (2.1)	3.3 (1.7)	3.04	0.049	0.116
Humour	3.4 (1.8)	3.3 (1.6)	3.4 (1.8)	3.3 (1.8)	0.05	0.949	0.612
Covid-19 perceptions, Mean (SD)							
Health fear	4.5 (1.2)	4.4 (1.3)	4.6 (1.2)	4.5 (1.3)	0.99	0.371	0.634
Social isolation/avoidance	3.5 (1.2)	3.4 (1.2)	3.5 (1.1)	3.5 (1.2)	0.69	0.500	0.052
Job stress	4.2 (1.2)	4.2 (1.1)	4.1 (1.2)	4.3 (1.2)	0.53	0.591	0.766
Doubts about protection	1.8 (0.8)	1.7 (0.8)	1.8 (0.8)	1.7 (0.7)	0.49	0.615	0.977
Dissatisfaction with system/processes	2.2 (0.9)	2.2 (1.0)	2.2 (0.9)	2.3 (0.9)	0.32	0.730	0.061
Altruism perception, Mean (SD)	4.8 (1.3)	4.7 (1.4)	4.9 (1.3)	4.8 (1.4)	0.91	0.405	0.840

Note: WHO-5, World Health Organisation-Five Wellbeing Index: maximum of 100; score of 33 or more indicates normal wellbeing over the past 2 weeks; 20 or less indicates likely major depression over the past 2 weeks. IES-R: Impact of events scale revised (22 items); cut-off of 26 or more indicates moderate to severe symptoms of post-traumatic stress over the past 7 days. Work Ability Score: maximum of 10; cut-off of 6 or more indicates current sufficient perceived work ability. MIES: Moral Injury Events Scale. Higher scores denote higher intensity of moral injury over the course of the Covid-19 outbreak. Brief-COPE: abbreviated version of the COPE (Coping Orientation to Problems Experienced) Inventory. Higher scores indicate higher reliance on this coping style over the course of the pandemic. Perceptions of health fear, social isolation and avoidance, job stress, dissatisfaction with system/processes, doubts about protection and altruism: Higher scores indicate increased identification with each domain over the course of the Covid-19 outbreak.

Abbreviations: 95% CI, 95% confidence Interval; HCAs, healthcare assistants; SD, standard deviation.

[a]Item dichotomised for analysis using cut-off score.

[b]Items are dichotomised for analysis (any suicidal ideation/planning vs. none).

[c]Following regression analysis adjusting for age, ethnicity, years' experience, personal Covid-19 contact history and history of Covid-19 infection.

the well-documented impact of the pandemic on nursing homes. In line with qualitative studies, there was a high level of stress in this somewhat neglected population exposed to significant workplace hazards.[9–11]

We found the 1-week prevalence of moderate–severe symptoms of PTSD in nursing home staff in the Republic of Ireland (45%, 95% CI 40%–50%) was numerically higher than seen in nursing homes in Italy (39, 95% CI 33%–46%). This figure is also higher than the estimated prevalence of PTSD symptoms in hospital-based HCWs internationally during the Covid-19 pandemic (20.7%, 95% CI 10%–33%) with non-overlapping confidence intervals.[12,13] The possibly higher degree of such symptoms in staff in nursing homes than in hospitals may be due to several reasons. As experienced globally, some Irish nursing homes had high mortality levels. Staff, who typically form close bonds with residents, may have been forced to regularly witness their deaths first hand.[2–6,28] Personal protective equipment has been reported to be scarce in nursing homes at the beginning of the pandemic compared to general hospital settings.[29] There are limited data on psychosocial and occupational health supports for nursing home staff but these may be less available than in hospital settings.[28,30] Interestingly, we did not find differences in levels of post-traumatic stress symptoms or symptom clusters between nursing home staff groups based on their role.

The WHO-5 has utility in screening for depression during the previous 2 weeks.[21] We found that 39% reported scores corresponding with depressive symptoms. This figure lies at the higher end of the range for prevalence globally of depressive symptoms in the general population during the Covid-19 pandemic (14.6%–48.3%).[31] Of note, 20% of staff were below threshold for a possible diagnosis of major depression. Possible causes could be work-related stigma[32,33] and job stress[12] in addition to the typical stresses experienced by all members of society during Ireland's comparatively stringent pandemic-related restrictions.[34]

The proportions of staff reporting suicidal ideation and planning in the past week are concerning at 13.8% and 9%, respectively.[35] These prevalences are higher than those reported in hospital workers during the pandemic. Several studies in US and Chinese hospital workers have reported on suicidal ideation and planning as a combined item. Estimates range from 5.4% to 12% for suicidal ideation and planning in these workers over the past fortnight.[36–40] There is only one study to date which has appraised suicidal planning in hospital workers during the pandemic. This Spanish study found that the 30-day prevalence of suicidal planning was 2.7%.[41] However, this study does not provide information on suicidal planning. It should be noted that these issues are not solely in healthcare workers; the 1-week prevalence of suicidal ideation in the UK general population during the pandemic is also remarkably high at 9.8% (8.7%–10.9%).[42] Nonetheless, the reasons for these higher prevalences of suicidal ideation and planning in Irish nursing home staff are unclear; further studies are required to clarify if these issues persist.

Also of concern is the high level of moral injury experienced by nursing home staff. The mean score for nursing home staff in Ireland (20.8 SD 9.1) was significantly higher than that of US hospital staff at the beginning of the pandemic (16.15 SD 7.8; $p < 0.0001$).[16] HCAs reported a significantly higher degree of moral injury than non-clinical staff. While HCAs were the youngest group, this difference remained significant even after controlling for age and years of experience. HCAs may have found implementing restrictions and dealing with increased mortality more difficult due to their close relationships with residents.

Perhaps not surprisingly, given the above findings, a large proportion of staff reported insufficient work ability. There are no previous comparison data for nursing home staff but similar levels of insufficient work ability have been recorded in Irish doctors before the pandemic and was associated with burnout in doctors.[43] Regarding perceptions of the experience of the Covid-19 outbreak, views were similar to those reported by hospital workers during the SARS outbreak[24] with a noteworthy sense of altruism. While nursing staff reported higher utilisation of adaptive coping styles than non-clinical staff, this does not seem to have protected them from similarly high levels of post-traumatic stress and depression symptoms.

4.1 | Limitations

One limitation of this cross-sectional study is that it is difficult to state with certainty that any identified distress was due to the pandemic or a result of pre-existing issues, for example, organisational problems, support deficits. To address this, we plan to perform a follow-up survey when nursing home conditions have moved closer to pre-pandemic life. Ideally, this will be when 90% or more of the adult Irish population is vaccinated, restrictions have eased significantly and the pandemic has moved past its emergency phase in Ireland. Secondly, the sample size is relatively small compared to the estimated number of nursing home staff in Ireland and only 16% of nursing homes approached agreed to distribute the survey. While participants are broadly representative of nursing home staff nationally, staff response rates were low and thus may not reflect their true experience. As a result, selection bias could explain the high prevalences of mental health conditions and these results should be interpreted with caution. However, given that the prevalence for post-traumatic stress symptoms is similar to that found in the Italian care home study in which the staff response rate was 53%, it seems that high rates of distress in this population may be a common experience.[12] Consequently, it seems reasonable to believe that our sample may be representative. Thirdly, we were unable to determine if survey participants were ethnically representative as there are no ethnicity data available for Irish nursing home staff. However, figures from Ireland's regulatory body for nurses, the Nursing and Midwifery Board of Ireland, indicate that the proportions of nurses' country of registration corresponds to the ethnicity of survey participants.[44] Another limitation perhaps is that working hours per week were not measured and this might have been a mitigating factor for negative wellbeing or stress, for example, if one was working part time.[45]

4.2 | Conclusions

In this national survey, the prevalence of moderate–severe PTSD symptoms and the degree of moral injury in nursing home staff was significantly higher than that of international hospital staff during the Covid-19 pandemic. Distress levels were high overall in both clinical and non-clinical staff but differences exist between professional groups in the intensity of moral injury and coping styles. These factors need to be accounted for when tailoring pandemic supports for nursing home staff.

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