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Featured Article

Psychological distress and resilience among italian healthcare workers of geriatric services during the COVID-19 pandemic

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ABSTRACT

The COVID-19 pandemic exposed healthcare workers (HW) to heavy workload and psychological distress. This study was aimed to investigate distress levels among Italian physicians, nurses, rehabilitation professionals and healthcare assistants working in geriatric and long-term care services, and to explore the potential role of resilience as a protective resource. The General Health Questionnaire-12, the Connor-Davidson Resilience Scale, and a demographic survey were completed by 708 Italian HWs. Distress and resilience levels were compared between professionals through ANOVA; the contribution of sex, age, professional role, and resilience to distress was explored through regression analyses. Physicians reported significantly higher resilience and distress levels than rehabilitation professionals and healthcare assistants respectively. Women, HWs aged above 45, physicians, and participants reporting low resilience levels were at higher risk for distress. Findings suggest the importance of supporting HW's resilience to counterbalance the pandemic related distress.

Introduction

The COVID-19 pandemic, caused by a coronavirus (SARS-CoV-2) first identified in 2019 in Wuhan, China, rapidly spread worldwide.[1] Italy was the first European country to experience a significant COVID-19 outbreak, with the first case detected on February 21, 2020, in the northern region of Lombardy. During the first wave of the pandemic (March - May 2020), Lombardy was the most affected Italian region, reporting the highest number of victims, especially among the elderly.[2] During the second wave (October–December 2020)[3,4], the incidence rate was more homogeneous throughout the country. Despite the effectiveness of restriction measures, a third wave of contagion occurred in March 2021.

Such a sudden and prolonged health emergency exposed healthcare workers (HW) to a remarkable increase in workload, physical and emotional burden, and risk of becoming victims or vehicles of contagion.[5] The steadily growing international literature investigating the experience of hospital staff during COVID-19 pandemic[6–11] highlighted that 33% of HWs reported anxiety symptoms, and approximately 28% depressive symptoms. Additional problems included sleep difficulties, distress, and PTSD.[7,10] The contribution of sex and professional roles to psychological symptoms was also explored, suggesting a higher prevalence rate of depression and anxiety among women compared to men and among nurses compared to physicians.[8]

Researchers have also investigated both individual and social resources available to HWs during the pandemic related emergency, such as the person's ability to tolerate uncertainty and cope with it, and the support perceived from colleagues, family, friends, and significant others. Specific attention was devoted to the assessment of psychological resilience, defined as the ability to successfully adjust to adverse conditions.[12,13] Several studies detected a negative association of resilience with depressive and anxious symptomatology among healthcare workers.[14–17]

Within the context of healthcare services, professionals working in geriatric and long-term care institutions are specifically considered at risk for developing psychological distress, based on their lower job satisfaction, perceived lack of support, and assistance to residents diagnosed with severe cognitive impairment or exhibiting agitated behavior.[18–20] Not surprisingly, several studies conducted during the pandemic have detected high levels of psychological disorders

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among residents and healthcare workers of nursing and long-term care facilities.[21,22] Residents were highly vulnerable to the Sars-Cov-2 infection, due to their age and frequent comorbidities.[23] As a consequence, healthcare staff faced a substantial increase in workload; moreover, the spreading of the contagion among workers led to an unusually fast staff turnover.[24] HWs faced further emotional and relational challenges, due to the social distancing and lockdown measures, which prevented residents' families from meeting their relatives in person, thus forcing professionals to convey negative news about residents' health conditions, including aggravation or death.[24]

To the best of our knowledge, only one study was conducted after the first COVID-19 outbreak among Italian HWs working in nursing and long-term care facilities; results showed a 43% prevalence of moderate to severe anxiety and/or post-traumatic stress symptomatology, while personal or social resources were not explored.[24]

Another qualitative study, conducted in four countries (including Italy) to explore through interviews the experiences of nurses caring for patients with COVID-19 in long-term care facilities, led to the identification of three recurring themes: fear of the pandemic situation, sense of duty and professional commitment, and emotional exhaustion.[25] Similar results were obtained in U.S and in China.[26,27]

Based on these findings and considering the dearth of research jointly exploring psychological symptoms and resources, this study was aimed at assessing the levels of distress and resilience among different professionals working in geriatric and long-term care institutions during the COVID-19 pandemic. In addition, based on the literature highlighting the role of demographic variables in the HWs' exposure to distress, and the relevance of resilience as a resource for successfully facing adversities, this study was aimed at exploring the contribution of sex, age, professional role, and resilience to the participants' distress levels. To this purpose, a multiple regression model was tested with sex, age, professional role, and resilience as predictors of HWs' distress levels. Based on previous evidence, the following hypotheses were formulated:

H1: Being female would be associated with high levels of psychological distress.[7,8]
H2: Being of younger age would be associated with high levels of psychological distress.[28]
H3: Working as a nurse would be associated with high levels of psychological distress.[7,8]
H4: High levels of resilience would be negatively associated with psychological distress.[16,17]

Method

Study design

This cross-sectional study took place in Northern Italy between January 18 and April 15, 2021, corresponding to the third wave of COVID-19. The protocol was approved by the Ethics Committee of Milano Area 2.

Participants

Out of 920 workers of geriatric services originally contacted, 818 consented to participate in the research. Before being enrolled in this study, they were informed about the nature and objectives of the study. Enrollment was voluntary and free of charge, and both verbal and written consent was obtained.

Study inclusion criteria were being 18 years or older and working as healthcare professional in one of three nursing and residential care facilities in Lombardy: Pio Albergo Trivulzio, Principessa Jolanda, and Frisia. Exclusion criteria were refusal to provide informed consent, not working in the three facilities as a healthcare professional, presence of cognitive disability, poor knowledge of Italian, or other verbal communication limitations that compromised the participant's ability to understand and answer the questionnaires. As a consequence, data provided by employees who had consented to participate but who were not involved in healthcare (e.g., technical and administrative staff, canteen operators, and cleaning workers) were not included in the analysis. Hence, the final sample comprised 708 health-care staff of nursing and residential care facilities; among them 53 were physicians (7.5%), 146 nurses (20.6%), 100 rehabilitation professionals (14.1%, mostly physiotherapists, speech, and occupational therapists), and 409 healthcare assistants (57.8%). Most participants were women (73.3%) and 60% were aged above 45.

Procedure

This cross-sectional study was part of a larger research project, aimed at assessing the psychological impact of COVID-19 in workers and patients of geriatric facilities. The description of the study and the invitation to participate were provided during regular organizational ward meetings by the psychologist heading clinical psychology services in the healthcare facilities. Participants were invited to complete self-report paper-pencil questionnaires during working hours, with the support of psychologists (whenever requested).

All instruments were administered in accordance with the norms regarding participants' privacy and anonymity, and the Italian laws of privacy and informed consent (Law Decree DL−101/2018). The study was conducted in line with the Code of Ethics of the World Medical Association (Declaration of Helsinki, 2013).

Measures

Collection of demographic data was limited to sex, age, and professional role. Participants also completed the following self-report questionnaires:

The *General Health Questionnaire-12 (GHQ-12)*[29]. The instrument comprises 12 items, each one assessing the severity of a mental problem over the past few weeks using a 4-point Likert-type scale (from 0 to 3). A total score can be calculated, ranging from 0 to 36, with high scores indicating worse mental health. A cut-off value $\geq$ 14 is considered as highly reliable in identifying psychological distress.[30]The Italian version [31] of the GHQ-12 was used in this study.

The *Connor-Davidson Resilience Scale (CD-RISC)*[32]. This instrument allows for assessing the individual resource of resilience as an individual trait; it consists of 10 items with response options on a 5-point Likert scale ranging from *Not true at all* (0) to *True nearly all the time* (4). A total score can be calculated, ranging from 0 to 40, with high scores indicating high levels of resilience. The Italian version[33] was used in this study.

Statistical analysis

First, in order to determine the factorial structure of GHQ-12 for the examined sample, in line with previous studies[34,35] three different competing models were tested through Confirmatory Factor Analysis (CFA): a one-dimension model of mental health; a two-factor model based on the item formulation (positive and negative wording respectively); and a three-factor model [36] that differentiates between the dimensions of anxiety/depression (GHQ-AD), social dysfunction (GHQ-SD), and loss of confidence (GHQ-LC). Descriptive statistics, Cronbach' alphas and correlation indexes were calculated for all study variables (GHQ-12 total score, GHQ-12 dimensions, and CD-RISC). The second step consisted of one-way ANOVAs with Bonferroni

correction in the post hoc tests, conducted to explore differences in mental distress and resilience among participants, based on their professional role. The different professional roles were introduced as factors, while the three GHQ-12 dimensions and the CD-RISC total score were introduced as dependent variables.

Finally, a three-block hierarchical regression analysis was performed, in order to supplement the results of ANOVAs and to investigate the contribution of sex, age, professional role, and resilience to mental distress symptoms. *Block 1* included sex as dummy variable (females = 0) and age (< 45 years = 0); *block 2* included professional roles, with physicians as reference category (coded as 0); *block 3* included the CD-RISC total score. Significance level was set at $p < .05$.

Results

CFA results' revealed that a three-factor model, where the dimensions anxiety and depression, social dysfunction, and loss of confidence were allowed to intercorrelate, achieved the best fit to the data (Table 1); the two-factor model (positive and negative worded items, with factors allowed to intercorrelate) also presented good fit indices; the one-factor model, in which all items were predicted to load onto a single, general mental distress factor, had poor fit indices, with both RMSEA and SRMR values below the accepted range.[37]

Based on these results, the GHQ-12 internal consistency was assessed. Cronbach's alpha for the total score was .78 and for each dimension it ranged from .65 to .77, suggesting a satisfactory reliability of the instrument. Descriptive statistics, Cronbach' alphas and correlation coefficients among the variables of interests are reported in Table 2. As concerns resilience, the confirmatory factor analysis revealed a unidimensional structure of CD-RISC, consistent with the original version (Cronbach's alpha was .90).

ANOVAs' results revealed a significant association of professional roles with both the anxiety/depression dimension (AD) of GHQ-12 ($F(3, 675) = 1.86$, $p < .05$) and CD-RISC ($F(3, 704) = 3.41$, $p < .05$). More specifically, physicians reported significantly higher anxiety and depression scores than healthcare assistants (m.d. = .95, s.e. = .35, $p < .05$), while not differing from nurses (m.d. = .46, s.e. = .38, $p = 1.00$) and rehabilitation professionals (m.d. = .68, s.e. = .40, $p = .55$). No significant differences between professional roles instead emerged for the other dimensions of GHQ, namely social dysfunction (GHQ12-SD: $F(3, 685) = .81$, $p = .49$) and loss of confidence (GHQ-12-LC: $F(3, 696) = 1.71$, $p = .16$). As concerns resilience, physicians reported significantly higher scores than rehabilitation professionals (m.d. = 3.88, s.e. = 1.37, $p < .05$), while no differences emerged from the comparison with nurses (m.d. = 1.23, s.e. = 1.30, $p = 1.00$) and healthcare assistants (m.d. = 2.26, s.e. = 1.18, $p = .33$).

Table 3 illustrates the three-block hierarchical regression model with the total score of GHQ-12 as dependent variable. Each of the three models resulted as significant (model 1: $F(2,656) = 10.57$, $p < .001$; model 2: $F(5,653) = 5.45$, $p < .001$; model 3: $F(6,652) = 27.18$, $p < .001$). In *block 1*, sex and age accounted for 3% of variance and they were both statistically significant, with women (B = -1.39, $p < .01$) and healthcare workers aged above 45 (B = 1.07, $p < .01$) being at higher risk for mental distress. In *block 2,* professional roles predicted GHQ-12 scores, but no significant increase in R^2 from *block 1* was observed (R^2 change = .009, Sig. F change = .11).

Table 1
Confirmatory factor analysis for the GHQ-12 ($n = 708$)

	χ^2	df	CFI/ TLI	RMSEA	SRMR
One-factor	547.50	54	.73/.68	.11	.08
Two-factor	243.65	53	.90/.87	.07	.05
Three- factor	202.83	51	.92/.90	.06	.04

Table 2
Descriptive statistics and correlations between the GHQ-12 and the CD-RISC ($n = 708$)

	M	*SD*	1	2	3	4	5
1. CD-RISC	23.69	8.13	(.90)	-.39**	-.30**	-.26**	-.32**
2. GHQ12-Total	17.47	5.03		(.78)	.83**	.75***	.73***
3. GHQ12-AD	7.31	2.36			(.65)	.34**	.58**
4. GHQ12-SD	7.05	2.60				(.67)	.24**
5. GHQ12-LC	3.08	1.65					(.77)

Note. CD-RISC = Total score of Connor-Davidson Resilience Scale; GHQ12-Total = Total score of the General Health Questionnaire (GHQ-12); GHQ12-AD = Dimension "Anxiety and Depression"; GHQ12-SD = "Social Dysfunction"
GHQ12-LC = "Loss of confidence"
** $p < .01$ (2-tailed). Cronbach's alpha is reported in the diagonal between parentheses.

Specifically, rehabilitation professionals (B = -1.73, $p < .05$) and health assistants (B = -1.46, $p < .05$) had significantly lower levels of distress than physicians, while no differences emerged between nurses and physicians (B = -.80, $p = .32$). *Block 3,* which included CD-RISC total score, was the best fitting model and accounted for 20% of the variance in GHQ-12 total score, with high levels of resilience predicting lower scores of distress (B = -.25, $p < .001$).

Discussion

Since the onset of the Sars-Cov-2 pandemic, HW have been facing a complex emergency situation, both organizationally and in terms of psychological distress. In particular, healthcare staff of nursing and residential care facilities were remarkably affected by the consequences of the pandemic on their work conditions.[24]

In this emergency context, this study was aimed at investigating the relationship between the emotional burden and the psychological resources that HWs mobilized to maintain good functioning despite stress exposure. To this purpose, distress and resilience levels were assessed among HWs of geriatric services differing in professional role. Moreover, regression analyses were conducted to explore the potential protective role of resilience in relation to distress, over and above demographic features.

In line with Riello et al.[24], the study participants reported globally high levels of psychological distress. Besides a generalized higher exposure to contagion as healthcare professionals, other factors related to the participants' specific work context and tasks may have contributed to these findings. First, working in geriatric settings, especially in nursing care homes, is more emotionally involving for HWs than working in a general hospital setting, also because geriatric settings host people for much longer-term periods.[24] The elderly population is at greater risk of being infected and experiencing the most severe clinical manifestation of COVID-19, also due to frequent

Table 3
Hierarchical regression with psychological distress as criterion variable ($n = 708$)

	Psychological Distress		
Predictors	*Block 1*B	*Block 2*B	*Block 3*B
Sex [females]	-1.39***	-1.45**	-1.09**
Age [< 45y]	1.07**	1.04*	.81*
Nurses [physicians]	-	-.80	-1.09
Rehabilitation professionals [physicians]	-	-1.73*	-2.63**
Health Assistants [physicians]	-	-1.46*	-2.02**
CD-RISC	-	-	-.25***
R^2	.031***	.040	.200***
ΔR^2	-	.009	.160***

Note. Reference category is reported within square brackets; CD-RISC = Total score of Connor-Davidson Resilience Scale;
* $p < .05$;
** $p < .01$;
*** $p < .001$.

comorbidities. Conditions of serious cognitive impairment and dementia may prevent residents from correctly adopting protective behavioral strategies, such as wearing masks, washing hands frequently and respecting social distancing. These issues, together with the experience of long-term assistance to seriously ill patients, may have intensified the emotional response to the pandemic among geriatric healthcare workers. Finally, the study was conducted during the third pandemic wave, a period in which healthcare workers were physically and psychologically exhausted after the two previous pandemic waves.[11]

When comparing distress and resilience levels between professional roles, differences were found only for the anxiety/depression dimension of distress and for resilience. Specifically, the higher depression and anxiety scores reported by physicians, compared to healthcare assistants, can be related to the greater responsibility of these professionals in identifying appropriate procedures and treatments under circumstances of clinical novelty, limited resources, and increased pressure. As concerns resilience, physicians reported significantly higher scores than rehabilitation technicians, while they did not differ in resilience levels from nurses and healthcare assistants. This is in line with studies that identified resilience as psychological resource that is developed through adversities.[12,38,39] In fact, during the pandemic physicians, nurses and healthcare assistants were engaged in the emergency frontline, facing continuous exposure to contagion and patients' critical conditions and deaths, exacerbated by uncertainties in dealing with an unknown disease, and distance contacts with patients' families who could not meet their relatives.[7,11,24,40] Rehabilitation technicians instead had to interrupt most activities with patients during the peak of the emergency, especially when the facilities or wards they were assigned to were isolated, due to the high number of infections.

In line with previous studies, our hypotheses were partially confirmed: findings showed that females (H1) and nurses (H3) were at greatest risk of experiencing distress.[7,24] Our results however highlighted that distress levels did not differ between nurses and physicians, in line with some other studies identifying both these health professions as specifically exposed to distress during the pandemic.[7, 11, 24] Contrary to what we hypothesized (H2), being older than 45 represented a risk factor for psychological distress among our participants; research findings around this issue are overall unclear, with some studies indicating that older HWs were more at risk of experiencing distress[41], while others[28] reporting greater distress in younger ones. Finally, as expected (H4), findings highlighted the protective role of resilience in relation to distress, suggesting that psychological interventions to enhance resilience among geriatric healthcare staff may help prevent or reduce the occurrence of poor mental health outcomes in this population during emergency conditions such as the COVID-19 pandemic.[24,42]

In line with these results, many authors have proposed the development and implementation of interventions oriented to improve the resilience of healthcare workers through evidence-based educational programs and training.[43-45] Other authors have suggested organizational interventions aimed as supporting an effective leadership, in order to promote both the mental health in healthcare workers and a resilient work environment.[46-48] Several intervention approaches proved to be effective in fostering healthcare workers' resilience during the pandemic, such as Mindfulness-Based Stress Reduction (MBSR) programs, training courses and workshops aimed at enhancing relaxation, mentalization, self-compassion, work-related stress reduction, and problem-focused learning.[16] These interventions typologies also promote or strengthen emotion regulation abilities, allowing healthcare workers to actively engage in resilience building, as highlighted in a recent study showing that healthcare workers participating in an online resilience-based enhancement course experienced significant improvements in resilience levels and emotional distress reduction one and two months later, compared to those who did not attend the course.[49]

The present study has strengths and limitations that should be acknowledged. As concerns strengths, the study provides novel evidence of the associations between psychological resilience and mental health in healthcare professionals working in nursing and residential care facilities during the pandemic period. Moreover, data were collected among a large number of participants differing in professional profiles, including the often-neglected category of health assistants, a group working in the frontline during the pandemic, and thus being at high risk for mental health problems, but still underrepresented in clinical studies.

Despite these strengths, the findings of the present study should be interpreted with caution. Indeed, the cross–sectional nature of the data precludes conclusions about causality. Follow-up studies are needed to monitor psychological distress and resilience over time and to investigate study differences across professional roles over the course of the COVID-19 pandemic. Second, we did not use clinical interviews or other clinician-administered tools, but self-reports questionnaires which could be susceptible to symptom over-reporting when compared with structured clinical assessment, especially in emergency settings.[24] Finally, the study did not consider pre-existing psychological suffering, since we have no data on the mental health status of participants before the pandemic or immediately during the first two waves.

In conclusion, our results suggest that interventions for supporting and promoting mental well-being among healthcare workers of geriatric services are necessary, especially for women and for the professional categories of nurses and physicians. In building these interventions it could be useful to focus on resilience as an asset to be mobilized or enhanced, in order to allow HWs to more successfully adjust to the challenges posed by the current pandemic, and by future health emergency conditions. These findings may also provide useful hints to develop organizational interventions during the post-pandemic period, making the public healthcare system better equipped to face emergencies. Interventions should be aimed at both strengthening the system's organizational structure and procedures, and at empowering HWs through professional training programs and the promotion of personal resources, including resilience. At the societal level, evidence derived from this study, as well as other ones conducted on similar topics during the pandemic, may represent useful information to guide governments' interventions at the healthcare level. The pandemic experience has already led several countries to specifically allocate financial resources in order to strengthen their healthcare system. Some common needs have emerged, such as the necessity of a substantial increase in healthcare service staff, together with a higher attention to HWs' well-being, and the adoption of organizational improvements aimed at enhancing the service quality and effectiveness.

Declarations of Competing Interest

None.

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