



Predictors of stress among nursing home staff during COVID-19 pandemic

Ana Belén Navarro-Prados^{1,4} · Sara Jiménez García-Tizón¹ · Juan Carlos Meléndez² · Javier López³

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Abstract

The COVID-19 pandemic has placed immense strain on nursing home staff, necessitating a closer examination of factors contributing to their stress levels. This study investigates predictors of stress among nursing home workers during the pandemic, focusing on psychological constructs such as burnout, sense of coherence (SOC), psychological flexibility, and cognitive fusion. A total of 170 nursing home professionals participated, completing questionnaires assessing various dimensions of burnout, SOC, experiential avoidance, anxious feelings and thoughts, and perceived stress. Results reveal significant correlations between perceived stress and emotional exhaustion, depersonalization, personal accomplishment, SOC comprehensibility, manageability, meaningfulness, experiential avoidance, and anxious feelings and thoughts. Multiple linear regression analysis demonstrates that experiential avoidance, anxious feelings and thoughts, emotional exhaustion, SOC comprehensibility, and personal accomplishment significantly predict perceived stress levels. These findings underscore the importance of addressing maladaptive coping mechanisms and promoting factors such as SOC and personal accomplishment to mitigate stress and burnout among nursing home professionals. Targeted interventions aimed at enhancing psychological flexibility and coping strategies are crucial for supporting the well-being of nursing home staff and ensuring high-quality care for residents amidst the ongoing pandemic challenges.

Keywords Burnout · COVID-19 · Experiential avoidance · Nursing homes · Perceived stress

Introduction and background

During the COVID-19 pandemic, nursing home professionals had to cope with an exceptionally heavy daily workload, which took its toll not only on their physical well-being, but also on their emotional state (Fischer et al., 2020). In addition, work pressure had an impact on the general health and well-being of staff, while occupational hazards increased stress during this period (Armitage & Nellums, 2020).

Numerous studies have reported elevated levels of stress, with prominent symptoms such as arousal, fear, anxiety, depression, sleep disorders and headaches (Poursadeghiyan et al., 2022; Xiang et al., 2020).

However, not all individuals who have faced the challenges caused by the COVID-19 pandemic have responded in the same way or had similar mental health problems (Gori et al., 2020; *Source suppressed for blinded review* Navarro-Prados et al., 2022; Trzebiński et al., 2020). Some psychological variables may have contributed to the perceived stress, and others may have helped to mitigate the stress and thus minimize its consequences. Therefore, it seems important to identify the protective and risk factors that influenced the positive or negative coping of this adverse situation to implement timely interventions to safeguard the well-being of these essential workers.

The current body of literature has consistently highlighted a notable risk of burnout among nursing home staff, an issue increasingly acknowledged for its adverse impact on patient safety and the quality of care provided (Altintas et al., 2022). Various studies have homed in on emotional

✉ Ana Belén Navarro-Prados
anavarro@usal.es

¹ Department of Developmental and Educational Psychology, University of Salamanca, Salamanca, Spain

² Department of Developmental and Educational Psychology, Valencia, Spain

³ Department of Psychology, School of Medicine, Universidad San Pablo-CEU, Madrid, Spain

⁴ Faculty of Psychology, University of Salamanca, Avda. de la Merced, Salamanca 109-131, 37005, Spain

exhaustion as a key factor influencing the mental well-being of healthcare professionals, particularly evident during the challenges posed by the COVID-19 pandemic (Özdemir & Kerse, 2020). Moreover, emotional exhaustion has been linked to heightened vulnerability to anxiety, compromised clinical decision-making, and a decline in the quality of patient care (Morse et al., 2012; Stuijzand et al., 2020).

In contrast, a crucial element that facilitates adaptation to stress is the sense of coherence (SOC), which plays a key role in promoting and maintaining good health (Eriksson & Lindstrom, 2007). SOC encompasses a person's ability to perceive a stressful situation as understandable, manageable, and meaningful. This perception enables individuals to effectively use their available resources to cope with the stressor in question (del Pino-Casado et al., 2018). It has been recognized as a determinant of well-being and a protective factor against psychological distress and overload (Source suppressed for blind review, Navarro-Prados et al., 2024), while contributing to enhancing personal resilience (Source suppressed for blind review). Conversely, it has been established that individuals with low levels of SOC have higher risks of experiencing burnout and depression (Mittelmark et al., 2017). In the work environment, SOC is linked to adaptability, job satisfaction and reduced sickness absence, playing a key role as a protective factor against work stressors and challenges in maintaining work-life balance (Schäfer et al., 2020).

Considering the dual nature of challenges faced by nursing home professionals, encompassing both physical and emotional aspects, the application of psychological flexibility emerges as a valuable approach to navigate the array of unpleasant emotions inherent in their work. Studies have noted that embracing coping styles grounded in psychological flexibility can serve as a preventive measure against workplace stress, fostering increased job satisfaction and bolstering both psychological and physical well-being (Ramaci et al., 2019). Conversely, coping mechanisms devoid of psychological flexibility, such as experiential avoidance (steering clear of uncomfortable emotions, thoughts, or feelings), tend to correlate with heightened stress levels and an elevated risk of burnout (Kent et al., 2019; Montaner et al., 2021). A study (source undisclosed for blinded review) underscored the significant role played by experiential avoidance in predicting the impact of COVID-19 on nursing home workers. Recognized as a maladaptive long-term strategy, experiential avoidance contributes to the development of emotional disorders and can manifest in physical and behavioral symptoms.

Cognitive fusion, an essential component of psychological inflexibility, denotes the inclination for behavior to be excessively regulated and influenced by thoughts. This inclination has been linked to various psychological

outcomes, including feelings of shame or depression (Dinis et al., 2015), distress experienced by caregivers (Barrera-Caballero et al., 2022), and the manifestation of depressive and anxious symptoms across a diverse range of populations and contexts (Gillanders et al., 2014). Individuals highly “fused” with the content of their cognitions lack awareness of the thought process itself, and their attention and behavior are controlled by this process, superseding other sources of behavioral regulation (Gillanders et al., 2014; Hayes et al., 2011).

Despite the importance of stress and/or burnout and associated variables in the quality of care in nursing homes, the literature is scarce and robust. Therefore, the main aim of this study is to analyze the extent to which possible risk and protective factors against stress have affected nursing home workers during the COVID-19 pandemic and to assess the contribution of these factors to their stress. That is, to assess whether psychological flexibility, SOC, anxiogenic thoughts and burnout influence the perceived stress of nursing home professionals during the pandemic. Investigating these factors can facilitate the development of preventive measures that address the immediate, medium-term, and long-term needs of nursing home settings.

Methods

Participants and Procedure

This study enrolled a total of 170 participants who met the inclusion criteria of being aged 18 years or older and actively employed as nursing home workers during the COVID-19 pandemic. Participants were recruited using a convenience sampling method, whereby individuals who were readily accessible and willing to participate were included. To ensure a comprehensive representation of the nursing home workforce, the study extended participation beyond physicians and nursing staff to include various professionals who may have encountered the escalating physical, cognitive, and emotional demands of caring for residents.

The sample size was determined through a power analysis, considering the study's objectives, expected effect sizes, and desired statistical power. Given the complexity of the analysis and the need to detect meaningful differences in stress levels among nursing home workers, a minimum of 150 participants was deemed necessary to achieve a statistical power of 0.80, with an alpha level of 0.05.

The sampling method employed was convenience sampling due to the practical constraints and accessibility of potential participants. Initially, a list of nursing home facilities within the target region was compiled, and individuals meeting the inclusion criteria were approached for

participation. This approach aimed to capture a diverse range of perspectives from nursing home workers affected by the pandemic across different facility types and geographic areas.

In addition to the inclusion criteria, no specific exclusion criteria were established for participation. All eligible participants were invited to participate voluntarily, and ethical guidelines for research involving human subjects were strictly followed.

The study was conducted as a cross-sectional study among nursing home workers in Spain. Participants completed a self-administered questionnaire, which included socio-demographic information, professional variables, and aspects related to the impact of COVID-19. Data collection took place between April and July 2021, coinciding with the fifth wave of COVID-19 cases in Spain and the vaccination of more than 97% of older adults against the virus (Ministry of Health of the Government of Spain, 2021).

Variables and instruments

In this study, we employed the Maslach Burnout Inventory (MBI) (Maslach et al., 1996) to assess burnout among nursing home staff. Comprising 22 items, the MBI evaluates three dimensions: emotional exhaustion (feeling emotionally drained due to job demands and continuous work-related stress, e.g., “I feel emotionally drained from my work”), depersonalization (adopting a distant attitude towards one’s work and the individuals one interacts with, e.g., “I feel I treat some individuals as if they were impersonal objects”), and personal accomplishment (assessing one’s sense of personal competence, achievement, and satisfaction with work, e.g., “I deal very effectively with the problems of my recipients”). It included 7-point Likert scale response options ranging from 0 (*never experienced such a feeling*) to 6 (*experience such feelings every day*). Higher scores on emotional exhaustion and depersonalization, along with lower scores on personal accomplishment, indicate a higher level of burnout.

This version showed good reliability in this study (Cronbach’s $\alpha=0.774$).

To assess the overall sense of coherence among nursing home staff, we employed the Sense of Coherence 13-item scale (SOC-13; Antonovsky, 1987). This scale consists of 13 items and evaluates three components: comprehensibility (perceiving internal and external stimuli as structured, predictable, and explicable, e.g., “Do you experience feelings and thoughts that are difficult to understand?”), manageability (the perception of available resources to handle these stimuli, e.g., “How often do you feel confident that you can handle personal problems?”), and meaningfulness (viewing these demands as meaningful challenges worth

engaging in). It included a 7-point Likert scale. This instrument provided a reliable measure of sense of coherence in our sample (Cronbach’s $\alpha=0.873$).

The Acceptance and Action Questionnaire-II (AAQ-II) (Bond et al., 2011) was employed. The AAQ-II is a 7-item questionnaire designed to assess experiential avoidance and psychological inflexibility. Participants were asked to rate their agreement with each statement on a 7-point Likert scale, ranging from 1 (not at all true) to 7 (*completely true*). The reliability of this instrument in our sample was high (Cronbach’s $\alpha=0.949$).

The Believability of Anxious Feelings and Thoughts Questionnaire (BAFT) (Herzberg et al., 2012) was utilized in this study. The BAFT is a 16-item tool employed to assess cognitive fusion, which represents the propensity to fully accept and believe in the literal interpretation of thoughts, emotions, and bodily sensations associated with anxiety. The scale includes three factors: fusion with somatic concerns (e.g., “Scanning my body for signs and symptoms of anxiety is important to keep me safe”); fusion with emotional regulation (e.g., “When I feel bad, I must fight the feeling in order to make it go away”); and fusion with negative evaluation (e.g., “Appearing nervous is not good and causes me to suffer”). It included a 7-point Likert scale with response options ranging from 1 (*not at all believable*) to 7 (*completely believable*). The BAFT had an adequate internal consistency (Cronbach’s $\alpha=0.918$).

The Perceived Stress Scale (PSS) (Cohen et al., 1983). This 14-item instrument was used to measure perceived stress. It included a 5-point Likert scale ranging from 0 (*never*) to 4 (*very often*). The scale assessed the stress that nursing home professionals might have felt over the last month (e.g., “In the last month, how often have you been upset because of something that happened unexpectedly”). The internal consistency (Cronbach’s α) for this scale in our study was 0.876.

Data analysis

Pearson correlations were performed to assess the relationships between the variables. In addition, a multiple linear regression model was performed to predict perceived stress, including all variables simultaneously in the model to give the same level of importance to each predictor. The following predictors were used: burnout, emotional exhaustion, depersonalization, and personal accomplishment, SOC comprehensibility, manageability and meaningfulness, experiential avoidance, and anxious feelings and thoughts. Also, the effect size was calculated. All analyses were carried out using SPSS 25.0 software.

Table 1 Pearson correlations between depression, satisfaction, burnout dimensions, resilience, and experiential avoidance

	1	2	3	4	5	6	7	8
1. PSS	--							
2. Burnout-EE	0.647*	--						
3. Burnout-DE	0.486**	0.622**	--					
4. Burnout-PA	-0.492**	-0.386**	-0.267**	--				
5. SOC-Co	-0.667**	-0.420**	-0.413**	0.361**	--			
6. SOC-Ma	-0.707**	-0.522**	-0.437**	0.386**	0.745**	--		
7. SOC-Me	-0.639**	-0.526**	-0.388**	0.495**	0.707**	0.701**	--	
8. ExAv	0.770**	0.588**	0.457**	-0.355**	-0.606**	-0.618**	-0.599**	--
9. BAFT	0.595**	0.421**	0.378**	-0.110**	-0.469**	-0.469**	-0.342**	0.633**

Note. (1) PSS: Perceived stress; (2) Burnout-EE: Emotional exhaustion; (3) Burnout-DE: Depersonalization; (4) Burnout-PA: Personal accomplishment; (5) SOC-Co: Comprehensibility; (6) SOC-Ma: Manageability; (7) SOC-Me: Meaningfulness; (8) ExAv: Experiential avoidance; (9) BAFT: Anxious feelings and thoughts

Results

The socio-demographic characteristics of the participants are summarized as follows: The mean age of the sample was 43.47 years ($DT=10.11$). Gender distribution indicated that 24.1% of participants were men, while 75.9% were women. In terms of marital status, the majority of participants were married (55.3%), followed by single (36.5%) and divorced (8.2%). Regarding educational level, a significant proportion of participants had attained a university degree (74.1%), while 21.2% had completed high school and 4.7% had only completed elementary school. Tenure within the nursing home varied among participants, with 17.6% reporting less than one year, 29.4% between one and five years, and the majority (52.9%) having worked in the nursing home for over five years. Concerning the size of the nursing home facility where they worked, 30% had fewer than 50 residents, 30.6% had between 50 and 100 residents, and 39.4% had more than 100 residents.

Correlations between perceived stress, dimensions of burnout (emotional exhaustion, depersonalization, and personal accomplishment), dimensions of SOC (comprehensibility, manageability, and meaningfulness), experiential avoidance, and anxious feelings and thoughts are presented in Table 1.

Perceived stress showed a positive significant association with the emotional exhaustion and depersonalization dimensions of burnout, and with experiential avoidance and anxious feelings and thoughts. It also showed a negative significant association with the personal accomplishment dimension of burnout and with the three dimensions of SOC (comprehensibility, manageability, and meaningfulness). Burnout emotional exhaustion and depersonalization dimensions correlated positively and significantly with each other, but negatively with personal accomplishment. The SOC dimensions correlated significantly and positively with each other.

Table 2 Multiple linear regression coefficients between perceived stress and experiential avoidance, anxious feelings and thoughts, comprehensibility, emotional exhaustion and depersonalization

Criterion: perceived stress	B	SEB	β	T
Model $R^2_{adj}=0.746$, $F_{(5,163)}=71.66^{**}$				
Experiential avoidance	0.270	0.065	0.293	4.136**
BAFT: anxious feelings and thoughts	0.096	0.026	0.232	3.728**
SOC: comprehensibility	-0.375	0.095	-0.245	-3.93**
Emotional exhaustion	0.135	0.041	0.190	3.292*
Personal accomplishment	-0.251	0.065	-0.202	-3.837**

Note. ** $p < .001$, * $p < .01$

Multiple linear regression models were performed using the enter method. Given that the objective was to study which variables could predict perceived stress in formal caregivers during the COVID-19 pandemic, the dimensions of burnout (emotional exhaustion, depersonalization, and personal accomplishment), dimension of SOC (comprehensibility, manageability, and meaningfulness), experiential avoidance and anxious feelings and thoughts were included in the regression model, but depersonalization, manageability, and meaningfulness were not significant.

A new model was carried out, and as Table 2 reveals, was significant. The stress model explained 74.6% of the variance.

The regression analysis of stress showed that experiential avoidance ($t=4.136$) was the variable that explained it to a greater extent with a positive sign; the same sign was obtained for the variables anxious feelings and thoughts ($t=3.728$) and emotional exhaustion of burnout ($t=3.292$). With a negative sign, the variables comprehensibility of SOC ($t=-3.93$) and personal accomplishment of burnout ($t=-3.837$) were also significant.

Finally, regarding the effect size, in addition to R-squared (0.746), the lower limit of the 95% CI was calculated (Dominguez-Lara, 2017) using the mathematical expression of Cohen et al. (2003) to obtain the standard error of

R-squared (SE_R^2) that needs to be used in the operations. Once the lower limit of the 95% CI was calculated (0.681), the cut-off points of 0.02, 0.13, and 0.26 were applied to determine whether the effect size was small, medium, or large (Ellis, 2010); the value obtained indicated that the effect size was large.

Discussion

The main objective of this study was to analyze the contribution of experiential avoidance, anxiety-inducing thoughts and emotions, burnout, and sense of coherence (SOC) on perceived stress levels in a sample of nursing home workers during the COVID-19 pandemic. The results confirmed that avoidance or having more difficulty accepting current thoughts and emotions, including unwanted ones caused by the pandemic (experiential avoidance), is highly related to perceived stress.

Therefore, identifying experiential avoidance as a key vulnerability factor in the emergence of heightened perceived stress is crucial. Individuals who resort to maladaptive emotional avoidance as a coping strategy tend to endure more intense and prolonged stress levels when confronted with similar stressful situations, compared to those who can effectively tolerate negative internal experiences (Holzel et al., 2010). The findings of this study suggest that experiential avoidance may significantly contribute to elevated perceived stress levels, potentially limiting an individual's resources for efficiently handling daily tasks (Kashdan & Rottenberg, 2010).

In essence, experiential avoidance establishes a behavioral pattern that may initially seem effective but, over the long term, leads to increased distress (Kent et al., 2019; Montaner et al., 2021; *Source suppressed for blind review* Navarro-Prados et al., 2024). Consequently, acknowledging experiential avoidance as a risk factor for heightened perceived stress could pave the way for the development of targeted acceptance-based interventions, intending to forestall the progression of stress into clinically significant conditions (Kent et al., 2019).

The fusion with anxious thoughts and feelings had a negative effect that facilitated inappropriate responses to stressful situations. Previous studies found that when individuals lack the skills to distance themselves from anxious thoughts and feelings and behave under the control of what is important to them (i.e., cognitive and value defusion processes), they generally become trapped in experiential avoidance loops that characterize some psychological disorders such as depression, anxiety, etc. (Gillanders et al., 2014).

Also, chronic exposure to stressors, such as a pandemic, can lead to burnout, as demonstrated by the significant

association between emotional exhaustion and perceived stress in this study. Nursing home workers faced exceptionally high levels of distress and witnessed the death of many residents with whom they had developed long-lasting bonds, often in isolation (Nyashanu et al., 2020). In addition, they faced increased stress due to increased social pressure from health authorities, who intensified surveillance and control measures within the facilities (Xiang et al., 2020).

Also, in this study, SOC, specifically understandability, appears to have a protective or buffering effect against stress by managing and resolving the tension in a health-promoting manner, which is particularly important for addressing burnout tendencies (Eriksson et al., 2019). These results also support the findings of previous studies showing that SOC was highly related to burnout dimensions and had a protective role against this syndrome in nursing home professionals during the COVID-19 pandemic in Spain (*Source suppressed for blinded review* Navarro-Prados et al., 2022). In this line, studies on family caregivers reveal negative associations between SOC and subjective overload, anxiety, and depression (del Pino-Casado et al., 2018). It has also been related to potentially better health and quality of life in the general population (Eriksson & Lindstrom, 2007).

A significant relationship has also been observed between self-fulfillment and perceived stress. Competence and internal feelings of accomplishment seem to protect nursing home workers from stress. These feelings may be due to the knowledge that their work contributes to the greater good of society and the residents they care for (Santos et al., 2019). These results are congruent with those found in previous studies (Vera-Monge et al., 2021). It seems that those workers with good personal accomplishment used more frequently a more active, problem-focused, and stressor-directed coping, favoring a greater sense of confidence and self-efficacy to cope with any stressful situation. Their perceptions of the value of their work and how it can affect residents' lives in this health crisis may therefore reduce perceived stress levels (Santos et al., 2019).

Enhancing the psychoeducational framework for nursing home workers post-COVID-19 is highly imperative, empowering individuals to adeptly address the challenges that have emerged. Beyond conventional training focused on symptom management or patient communication, it may be essential to implement interventions exclusively designed for proficient emotional management and the cultivation of psychological flexibility—a coping style distinct from experiential avoidance. Specifically, interventions grounded in acceptance and commitment therapy have shown promise in reducing emotional exhaustion and anxiety levels, while concurrently elevating workers' satisfaction and personal fulfillment (Montaner et al., 2021).

It is essential to recognize and consider the limitations of this study when interpreting the results and planning future research. First, the cross-sectional design used in this study restricts our ability to examine the lasting effects of prolonged exposure to COVID-19-related stressors and the long-term consequences of this crisis. In addition, causal relationships cannot be inferred from the results due to the nature of the study design. Second, the online survey method employed in this study excluded people who did not have access to network-connected devices. This exclusion could have resulted in the omission of a segment of the population less likely to use online platforms or social media to complete online questionnaires.

Conclusion

There is evidence indicating that the stress encountered by healthcare professionals in nursing homes not only affects their well-being but also diminishes their capacity to offer valuable support to older adults and their families. There is an urgent call to implement programs aimed at fostering the well-being of these professionals by reinforcing their coping mechanisms grounded in psychological flexibility. This goal can primarily be realized through psychosocial preventive interventions designed to encourage individuals to recognize and adapt to the specific demands of a given situation. This includes promoting the ability to adjust problem-solving strategies as needed and avoiding impulsive adherence to automatic reactions. The focus is on comprehending and amplifying personal strengths that contribute to the overall health of these workers. All these efforts will contribute to averting the onset of psychological disorders later in life.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s12144-024-05851-7>.

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Data availability The data that support the findings of this study are available on request from the corresponding author.

Declarations

Conflict of interest No conflict of interest has been declared by the authors.

Ethics approval The study was approved by the University Ethics Committee of the University of Salamanca (515/2020).

Informed consent All participants gave informed consent, with ex-

plicit guarantees of confidentiality and anonymity. They were then asked to complete a self-administered questionnaire covering socio-demographic and professional variables, as well as aspects related to the impact of COVID-19.

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