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Different Coping Strategies, Hardiness and the Role of Supervisor and Coworker Support to Manage Emergency Stress and Burnout in Professional and Volunteer Emergency Workers during Covid-19 Pandemic

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Abstract

The Covid-19 pandemic represented one of the most difficult unexpected international crises to manage in recent times, involving emergency workers and volunteers, subjected to exhausting shifts, who had to face an emergency never managed before. Emergency workers and volunteers who intervene to manage crises, disasters and emergency situations are at risk of developing burnout and emergency stress. Coping strategies and resilience are among the protective factors for stress and burnout. This study aimed to investigate the relationship between emergency stress, burnout, coping strategies and resilience in professional and volunteers emergency workers during the Covid-19 pandemic, and also with other external protective factors such as support from supervisors and colleagues. The Emergency Stress Questionnaire, the Coping Inventory for Stressful Situations, the Coping Self-Efficacy Scale – Short Form, the Hardiness Resilience Gauge and the Maslach Burnout Inventory were administered to an Italian sample of 332 professional emergency workers and 316 emergency volunteers. The results showed that professional emergency workers had a significantly higher level of emergency stress, emotional exhaustion and depersonalization and used more emotional coping strategies, while volunteers showed higher levels of hardiness and coping strategies than the other group. Hardiness emerged as an internal protective factor against emotional exhaustion and depersonalization, as well as the coping strategy Stop Negative Thoughts and Emotions. Self-efficacy coping strategies showed a significant protective effect on burnout risks, unlike task, emotion and avoidance scales. Supervisor support emerged as an external protective factor against burnout, while coworkers support influenced personal accomplishment. Both professional and volunteer rescuers can develop stress and burnout and it is necessary to provide preventive training that aims to increase awareness of risks and specific and effective coping strategies and also to promote more external protective factors that can increase trust in the supervisor and colleagues.

Keywords: Emergency stress; Burnout; Covid-19; Emergency workers; Emergency volunteers; Coworkers support; Supervisor support

Introduction

The Covid-19 pandemic forced emergency and healthcare services to implement new standards of practice and to reflect on the protection not only of the sick but also of the workers employed in the emergency. The emergency personnel, in fact, had to face significant challenges, such as increased workloads, risk of infection, lack of clear guidelines, and shortages of Personal Protective Equipment (PPE). In addition to this, the unpredictability of the situation, the constant changes in the emergency context, and the need for rapid reorganization required healthcare and emergency personnel to implement coping strategies without any prior training. At the same time, they had to manage the responsibilities related to their professional roles as well as the concern for themselves and their family members due to the potential risk of infection [1]. During the Covid-19 pandemic, emergency volunteers also played a significant role in the prevention and control of the pandemic, exposing themselves to the same challenges and risk factors as professional personnel [2-6].

The literature shows, almost unanimously, that professional and volunteer emergency workers were exposed to a very high risk of developing symptoms of stress and burnout during the COVID-19 pandemic [7-10]. In emergency workers, stress can develop at different levels, such as physical, emotional, cognitive, decision-making, relational, and organizational stress [11-16]. A very intense and prolonged level of stress can also lead to the development of psychopathological symptoms, such as anxiety, depression, acute stress and post-traumatic stress disorder [8, 9] or burnout [9-17].

Burnout is a psychological syndrome resulting from chronic workplace stress that has not been successfully managed. It is characterized by three core dimensions: Emotional Exhaustion (EE), Depersonalization (DP), and a reduced sense of Personal Accomplishment (PA) [18]. People with elevated emotional exhaustion levels often feel overwhelmed, drained of energy, and mentally and physically worn out. People who are high in cynicism or depersonalization tend to appear emotionally distant or indifferent, unlike those who manage stress more effectively. People who feel insecure about their abilities or perceive themselves as underachieving at work typically show low levels of personal accomplishment.

Burnout negatively impacts both the personal well-being and professional performance of healthcare workers [17], leading to depression, suicidal thoughts, substance abuse, or even physical health problems. On the job, it can result in lower-quality care, decreased patient satisfaction, an increase in clinical mistakes, higher rates of staff resignation, and reduced efficiency. Although burnout is common among emergency personnel involved in Covid-19 emergency, not every emergency worker is affected by it. In fact, within the same demanding environment, some individuals manage to thrive. Research has shown that positive psychological traits can support people in managing and adjusting environments. Personal coping style, resilience skills, and hardiness, play a key role in reducing individual vulnerability to burnout [2, 16]. Hardiness is generally defined as an attitudinal style o word of view that enhance resilience, helps people to cope to challenges that come from the environment and protect against the effect of stress [19, 20].

According to Bartone, hardy people have three key qualities: they perceive themselves as controlling the events they experience, they commit to seeing the world as meaningful and interesting, and they view challenges and change as growth opportunities. Hardiness is a key factor in reducing the negative effects of stress on both psychological and physical health and it is associated with greater flexibility in facing challenges, enhanced work performance), and stronger overall resilience across various environments [21]. As shown by several studies [22-27, 11-16] hardiness acts as a protective factor against stress and burnout in emergency workers and volunteers employed during the covid-19 pandemic.). According to Vagni et al. [14-16], emergency workers and Red Cross volunteers with stronger levels of hardiness, experienced less emergency stress, reduced emotional exhaustion, and lower levels of depersonalization. At the same time, they reported a greater sense of personal achievement [14]. Furthermore, hardiness appears to have a moderating effect between emergency stress and burnout in emergency workers and volunteers [16].

Among the protective factors, particular attention must also be paid to the coping strategies adopted to menage a crisis. Coping strategies are behavioral and psychological efforts used to overcome, tolerate, or reduce the impact of stressful events and can act as protective factors against the development of posttraumatic stress symptoms and burnout [16]. A meta-analysis [28], indicates that problem-focused coping is negatively correlated with the burnout symptoms, while emotion-focused coping is positively correlated with the three dimensions of burnout symptoms. Specifically, reduced personal accomplishment appears more strongly related to emotion-focused coping. A systematic review, on the relationship between coping strategies and burnout in emergency workers, found that emotion-focused coping was positively correlated with total burnout and with the dimensions emotional (or psychological) exhaustion, depersonalization (or indolence) and guilt, and negatively associated with personal accomplishment [29].

Few studies have focused on the analysis of coping strategies used by volunteers in Italy during the Covid-19 pandemic founding that coping strategies are protective factor against burnout and stress [25, 6, 16]. Roncone et al. [6], analyzed the impact of the Covid-19 emergency on mental health and coping strategies in an Italian sample of volunteers, who showed a wide use of positive coping strategies and high utilization of problem-focused coping strategies. In particular, coping strategies were positively correlated with all psychopathological variables, highlighting that a maladaptive response to stressful events can promote a sense of "learned helplessness". Vagni et al. [16] found that volunteers showed higher levels of positive coping than the general population and furthermore that problem-focused coping and stop negative emotions and thoughts showed moderating effects on stress and burnout. Furthermore Maiorano et al. [25], found that coping strategies, especially stop unpleasant emotions and thoughts, are protective factors and reduce the effect of stress on secondary trauma.

In addition to individual internal characteristics, literature highlights how organizational factors, linked to the organizational climate, can also act as a protective factor against stress and burnout. Coworker support has emerged as a way to mitigate emergency stress burnout and trauma [30, 31], and it was considered one of the essential services that should be guaranteed to healthcare staff [32]. Furthermore the support given by the managers and supervisors is very important [30, 33-36]. Skosberg et al. [36], in their review, highlighted how the support of managers, physically close to the staff, able to listen opinion and to be sensitive, was vital, especially in the first phase of the emergency, to prevent and contain stress and mental illnesses among healthcare workers. Supervisor support was positively associated with resilience and efficacy among young adult workers [37], and negatively correlated with stress and burnout [33, 35, 38]. Most studies conducted during the recent pandemic have considered either coping strategies or resilience in relation to well-being factors versus psychopathological symptoms in emergency workers [22, 28]. Studies on coping strategies have given more contrasting results, generally referring to a single theoretical model [29]. Other studies have focused on social support from supervisors and coworkers [31, 36, 39, 40]. Few studies have considered the specific factors of emergency stress on emergency workers [2].

The aim of this study was to highlight the relationship between

multiple coping strategies with emergency stress and burnout, detecting how more specific strategies help emergency workers to manage the critical factors of the Covid-19 pandemic. Two different groups were taken into consideration: professionals and volunteers working in the emergency to detect any differences in stress management and burnout risk. Finally, in the research design, in a comprehensive perspective, in addition to the internal resources of emergency workers, such as coping strategies and hardiness, the support from supervisors and colleagues was also considered.

Our main hypotheses were the following:

Hypothesis 1: Different coping strategies have different effect on Emergency Stress. Hardiness, Supervisor Support and Self efficacy coping strategies reduce Emergency Stress.

Hypothesis 2: Hardiness, Stop Negative Thoughts, Emotions, and Supervisor Support reduce Burnout risk and together with Coworkers Support improve Personal Accomplishment.

Materials and Methods

Participants

In this study, 332 professional emergency workers (healthcare, nurses, fire fighters) (mean age = 43, 42; SD = 12.47; 33.4% male) and 316 volunteer emergency workers were recruited (mean age = 47.22; SD = 14.33; 41.1% male). In the first group 58.4% of participants were front responders for Covid-19 patients, and in the second 51.9%.

Procedure

Recruitment took place between March and May 2021 through an online transactional survey. The questionnaire included several sections for informed consent, baseline sociodemographic information, and several tools for to measure emergency stress, hardiness skills, coping strategies and burnout. Participants were asked about their self-perception of support from both their supervisor and colleagues using 5-point Likert scale. The study involving human participants were reviewed and approved by Comitato Etico per la Sperimentazione Umana – CESU of the University of Urbino (minute 45 of 27 May 2020). Ethical principles of the Declaration of Helsinki and the "Convention on Human Rights and Biomedicine" (Oviedo Convention) were followed and respected.

Materials

Participants answered the following questionnaires

- Emergency Stress Questionnaire (ESQ) [11], is a questionnaire that measure emergency stress in emergency workers engaged in emergency situations. In addition to providing a total stress score, the tool allows to evaluate seven dimensions of emergency stress: Organizational-relational; Physical; Inefficacy-decisional; Emotional; Cognitive; and Covid-19. The total internal consistency of the questionnaire is .90.
- The Hardiness Resilience Gauge (HRG) [41], is a self-administered questionnaire that measures the level of hardiness. The assessment provides a Total Hardiness score in addition to scores measuring three qualities that are instrumental for predicting how resilient an individual will be. These three qualities are referred to as Challenge, Control and Commitment.
- The Coping Inventory for Stressful Situations (CISS) [42, 43], is a tool for assessing coping style (problem-oriented, emotion-oriented and avoidance-oriented coping). The CISS consists of three scales: Task (T), that refers strategies aimed at solving the problem by cognitively restructuring it or trying to change the situation; Emotion (E) that involves emotional reactions directed inward, with the goal of easing personal stress and Avoidance (A), that includes actions and cognitive changes used to avoid a stressful situation. It includes the two subscales Distraction and Social Diversion. In this study, the avoidance score was used and not the subscale score.
- The Coping Self-Efficacy Scale—Short Form (CSES-SF) [44], is a Likert-scale tool that assesses perceived self-efficacy for coping with challenges and threats. The subject is asked to indicate to what degree he adopts certain coping strategies. The instrument is composed of three sub-scales: Problem-Focused coping, Stopping Negative Thoughts-Emotions, and Support. The tool has previously been validated in measuring coping style in Health Care and emergency workers during the COVID-19 pandemic [44, 12, 15].
- Maslach Burnout Inventory–Human Services Survey, Italian version (MBI–HSS) [45, 46]: This is a self-reported instrument designed to evaluate how individuals perceive their own experience of burnout. It includes 20 items grouped into three subscales: Emotional Exhaustion (α = .86); Depersonalization (α = .70), and Personal Accomplishment (α = .79).

Statistical Strategy

T-test comparisons between professional and volunteer emergency workers groups and between Front and No-front responders of Covid-19 patients were performed. Pearson's correlation was conducted between among all the variables of interest: Emergency Stress, all 6 coping strategies scales, Hardiness and Burnout. A hierarchical regression model was run to detect the predictive effects of Hardiness, CISS and CSES-SF coping strategies on Emergency Stress, also entering the following variables as predictors: Group (Professional vs Volunteer emergency workers), Front responders Covid-19 (Front vs No-front), age and gender, Supervisor support and Coworkers support. Several hierarchical regression models were performed assuming Burnout factors as dependent variables (Emotional Exhaustion, Depersonalization and Personal Accomplishment) and assuming Group (Professional vs Volunteers Emergency workers), Front Responders Covid-19 (Front vs No-Front responders), age, gender, Emergency Stress, Hardiness (step 1), and Coping strategies (step 2) as predictors.

Results

Preliminary t-test comparisons between professional and volunteer emergency workers groups and between front responders of covid-19 patients were performed (table 1). The results showed higher Emergency Stress, Emotional Exhaustion and Depersonalization for professional emergency workers and front responders. In order the Hardiness skills and coping strategies volunteers emergency stress showed higher scores except for the Emotion strategy.

Table 1: *Mean comparisons between Professional and Volunteer workers and between Front and no-Front responders Covid-19 (N = 648).*

	Workers			**Responders**		
	Professional	**Volunteer**		**Front**	**No-Front**	
	N = 332	**N = 316**		**N = 358**	**N = 290**	
	Mean (SD)	**Mean (SD)**	***t***	**Mean (SD)**	**Mean (SD)**	***t***
Emergency Stress	67.96 (22.48)	50.92 (19.88)	10.20***	63.35 (23.63)	55.04 (21.11)	4.66***
HRG	60.61 (11.96)	65.99 (9.70)	-6.26***	62.99 (11.99)	63.52 (10.25)	-0.59
Task	57.16 (10.49)	58.43 (8.72)	-1.67	57.52 (10.17)	58.09 (9.06)	-0.74
Emotion	36.94 (12.65)	34.68 (12.13)	2.31*	35.44 (13.27)	36.27 (11.32)	-0.84
Avoidance	47.05 (11.62)	46.20 (12.34)	0.91	46.32 (12.07)	47.03 (11.89)	-0.75
Problem-Focused	38.05 (7.98)	39.51 (6.83)	-2.49*	38.53 (7.74)	39.02 (7.12)	-0.83
Stop Negative T-E	33.09 (11.55)	37.34 (10.10)	-4.98***	34.83 (11.43)	35.57 (10.62)	-0.85
Support	20.61 (7.01)	21.74 (6.78)	-2.09*	21.01 (7.25)	21.35 (6.50)	-0.63
EE	19.38 (10.71)	11.11 (7.34)	11.40***	16.65 (10.90)	13.72 (8.79)	3.69***
D	5.96 (6.02)	3.67 (4.05)	5.67***	5.43 (5.80)	4.11 (4.46)	3.18**
PA	26.45 (5.20)	27.00 (5.02)	-1.37	26.87 (5.11)	26.55 (5.14)	0.78

*p<=.05; **p<=.01; ***p<=.001; HRG = Hardiness Resilience Gauge; Stop Negative T-E = Stop Negative Thoughts-Emotions; EE = Emotional Exhaustion; D = Depersonalization; PA = Personal Accomplishment.

Pearson's correlations were made between Emergency Stress, Burnout scales, coping strategies and Hardiness scores (see table 2). Hardiness and coping strategies showed significant negative correlations with Emergency Stress, Emotional Exhaustion and Depersonalization, and positive correlations with Personal Accomplishment. Emotion coping strategy had positive correlations with Emergency Stress and Burnout scales and negative correlation with Personal Accomplishment.

Table 2: *Pearson's correlations between Emergency Stress, Burnout, and Hardiness, and coping strategies scales (N = 648).*

	Emergency Stress	**EE**	**D**	**PA**
HRG	-.356***	.426***	-.330***	.407***
Task	-.098*	-.187***	-.214***	.417***
Emotion	.408***	.306***	.257***	-.200***
Avoidance	.087*	0.001	-0.051	.212***
Problem-Focused	-.310***	-.363***	-.286***	.351***
Stop Negative T-E	-.400***	-.449***	-.278***	.309***
Support	-.205***	-.231***	-.210***	.236***
Emergency Stress	-	.714***	.471***	-.152**

*p<=.05; **p<=.01; ***p<=.001; HRG = Hardiness Resilience Gauge; Stop Negative T-E = Stop Negative Thoughts-Emotions; EE = Emotional Exhaustion; D = Depersonalization; PA = Personal Accomplishment.

Hypothesis 1: Different coping strategies have different effect on Emergency Stress. Hardiness, Supervisor Support and Self efficacy coping strategies reduce Emergency Stress.

A hierarchical regression model was run to detect the predictive effects of Hardiness, CISS and CSES-SF coping strategies on Emergency Stress, by entering the following variables as predictors: Group (Professional vs Volunteer emergency workers), Front responders Covid-19 (Front vs No-front), age, gender, supervisor support and coworker support. The model explains 44.4% of the variance and all the variables have a VIF value less than 2. Professional Emergency Workers and Front responders Covid-19 shoved significant effects on Emergency Stress (Beta = -0.225; p. <0.001; Beta = -0.165; p. <0.001). The CISS Task, Emotion and Avoidance coping scales assumed a predictive effect of increased Emergency Stress (Beta = 0.085; p.<0.05; Beta = 0.258; p.<0.001; and Beta = 0.203; p.<0.001; respectively), while Hardiness, Problem-Focused and Stop Negative Thoughts and Emotions showed predictive effects of decreased Emergency Stress (Beta = -0.132; p.<0.01; Beta = -0.098; p.<0.05; and Beta = -0.141; p.<0.01; respectively). Perceived support from supervisors assumed a protective factor (Beta = -0.119; p. <0.01, while support from coworkers did not show significance.

Hypothesis 2: Hardiness, Stop Negative Thoughts, Emotions, and Supervisor Support reduce Burnout risk and together with Coworkers Support improve Personal Accomplishment.

Several hierarchical regression models were performed assuming Burnout factors as dependent variables (Emotional Exhaustion, Depersonalization and Personal Accomplishment) and assuming Group (Professional vs Volunteers Emergency workers), Front Responders Covid-19 (Front vs No-Front responders), Age, Gender, Emergency Stress, and HRG (step 1) and Coping strategies (step 2) as predictors (table 4). Hardiness, Stop Negative Thoughts and Emotions, and supervisor support showed a reduction effect on emotional exhaustion. On depersonalization, Hardiness, and Task and Support as coping strategies were significant. Male gender, Emergency Stress, and Avoidance coping increased the risk of depersonalization. On Personal Accomplishment, Hardiness, Coworker support, Task, and Avoidance coping strategies showed a positive predictive effect.

Table 3: *Hierarchical regression models of Emergency Stress, Hardiness, external support, and Coping Strategies on Burnout scales (N = 648).*

	EE		D		PA	
Step 1	**B**	**Exp (B)**	**B**	**Exp (B)**	**B**	**Exp (B)**
Group	-2.78	-.14***	-0.18	-0.02	-0.66	-0.07
Front Responders Covid-19	-0.02	-0.03	-0.37	-0.04	-0.4	-0.04
Age	0.01	0.01	-0.03	-.08*	0.02	0.04
Gender	0.48	0.02	-0.92	-.08*	0.31	0.03
Emergency Stress	0.25	.58***	0.09	.37***	-0.01	-0.01
Supervisor Support	-0.55	-.07*	-0.32	-0.07	0.19	0.05
Coworkers Support	0.16	0.02	0.12	0.02	0.61	.12**
HRG	-0.16	-.18***	-0.09	-.18***	0.18	.39***
	R^2 = .560		R^2 = .268		R^2 = .190	
	F = 101.172***		F = 28.850***		F = 18.427***	
Step 2						
Group	-2.95	-.15***	-0.39	-0.04	-0.39	-0.04
Front Responders Covid-19	-0.71	-0.04	-0.42	-0.04	-0.45	-0.04
Age	0.02	0.01	-0.03	-0.06	0.01	0.02
Gender	0.48	0.02	-1.07	-.10**	0.19	0.02
Emergency Stress	0.24	.54***	0.08	.34***	-0.01	-0.01
Supervisor Support	-0.53	-.06*	-0.36	-.08*	0.26	0.06
Coworkers Support	0.22	0.02	0.23	0.04	0.46	.09*
HRG	-0.08	-.09*	-0.05	-.11*	0.09	19***
Problem-Focused	-0.04	-0.03	-5	-0.07	0.05	0.08
Stop Negative T-E	-0.11	-.12**	-0.05	-0.1	-0.04	-0.08
Support	-0.03	-0.02	-0.07	-.09*	0.01	0.01
Task	-0.02	-0.02	-0.07	-.13**	0.13	.25***
Emotion	0.01	0.01	0.03	0.07	-0.06	-.15***
Avoidance	0.04	0.05	0.04	.08*	0.05	.11*
	R^2 = .573		*R^2 = .293*		*R^2 = .264*	
	*ΔR^2 = .011**		*ΔR^2 = .025***		*ΔR^2 = .075****	
	F = 59.850***		F = 18.481***		F = 16.005***	

*p<=.05; **p<=.01; ***p<=.001; Gender = 1(male); 2 (female); HRG = Hardiness Resilience Gauge; Stop Negative T-E = Stop Negative Thoughts-Emotions. EE = Emotional Exhaustion; D = Depersonalization; PA = Personal Accomplishment.

Discussion

In the present study, different coping strategies and hardiness were considered in professional and volunteer emergency workers during Covid-19 pandemic. Support from supervisor and colleagues was also considered as external support. The main hypothesis was to understand how different coping strategies intervened together to the external supports on emergency workers with respect to their emergency stress and risk of developing burnout. The comparisons between the two groups of emergency workers revealed that professionals, such as physicians, nurses and firefighters, had a significantly higher level of emergency stress, emotional exhaustion and depersonalization. Professional emergency workers tend to use more emotion coping strategy, which represents emotional reactions to protect one's self, but which risks representing a manifestation associated with high levels of stress. The volunteer emergency workers showed higher levels of hardiness and coping strategies than professional rescues. Given the higher levels of stress and burnout in professional workers, these results could be explained as an effect of the greater risk, exposure and number of interventions to which they were exposed compared to volunteers. However, this study lacks

longitudinal data and this direct association cannot be explained, but only hyphotesis can be presented. If during the first wave of Covid-19 healthcare and emergency workers had shown higher coping skills, it is likely that in the second wave these professionals faced a depletion of personal resources. In fact, as shown in table 1, both professional and volunteer front responders showed higher emergency stress and burnout levels. At the level of personal accomplishment, no differences were observed.

Regarding emergency stress, according to previous studies [2, 16], the results showed that professional group and front responder Covid-19 were the factors that have assumed a higher predictive value on Emergency Stress. Hardiness and Stop Negative Thoughts and Emotions coping are the personal skills that have assumed higher negative predictive effects, while Problem-Focused has assumed significant predictive effect when it is related to other coping strategies of the CISS scales. The CISS coping scales showed a positive predictive value on emergency stress and especially Emotion strategy. According to Diggin et al. [29], these results seem to show that the use of these generic strategies is not effective in protecting emergency workers from the risk of developing high emergency stress levels. This risk seems to be higher in professional emergency workers and those who have had direct interventions with Covid-19 patients. It is likely that this type of coping strategies involving a direct and active effort risk exposing people to higher stress. Emergency workers, and especially professionals, need to use more specific strategies to cope with the emergency, and to stop negative thoughts and emotions associated with death and the negative aspects of the situation. This could protect emergency workers from excessive empathy and emotional exhaustion. Perceived support from supervisors assumed a protective effect, while coworkers support did not show significance on the reduction of emergency stress. This could indicate how in emergency situations that are still little known, receiving precise instructions, support and clear indications for intervention can be a valid tool for help and support. Covid-19 and the related restrictions of maintaining distance as protective measures has led to rescuers working more alone and reducing forms of emotional and physical contact with colleagues. Furthermore, during the crisis, a redeployment of staff was necessary and emergency workers often had to work in unfamiliar territory, often with new teams and colleagues. This may explain why coworkers support in this study did not show significance in relation to emergency stress [47, 48].

With the second hypothesis we wanted to detect which personal and external resources had a protective effect with respect to the risk of emotional exhaustion and depersonalization of the burnout. The results showed that both those who directly intervened on Covid-19 patients did not have the same risk of developing emotional exhaustion and depersonalization. The risk of burnout was higher in professional emergency workers who had to respect work shifts, sometimes even longer than normal ones. Volunteers had the possibility to offer their availability for intervention even in a non-constant manner. As also highlighted by other studies, emergency stress had a predictive factor in developing burnout syndrome [49]. Hardiness has proven to be an effective personal ability to protect emergency workers from emotional exhaustion and depersonalization as well as the coping strategy stop negative thoughts and emotions [41, 2]. These skills allow people to be guided towards commitment, experiencing difficulties as challenges, increasing commitment and a sense of self-efficacy, allowing them to block those negative thoughts and emotions, thus avoiding emotional exhaustion and developing feelings of cynicism. Men seemed to be more at risk of developing feelings of detachment. If self-efficacy coping strategies showed a significant protective predictive effect on burnout risks, unlike task, emotion and avoidance scales; with respect to personal accomplishment, an opposite picture was recorded. Task and avoidance seemed to have promoted a sense of personal accomplishment together with hardiness, while emotion had a negative effect [29]. Furthermore, the support of the supervisor had a protective significance on burnout [39, 40], but on personal accomplishment it did not assume significance. Coworkers support can increases personal accomplishment and this in fact can be understood as a sense of satisfaction among peers [50].

The results of this study indicated how coping strategies had different effects on emergency stress, burnout, and on personal accomplishment. Some of these coping strategies, if used excessively, can be dysfunctional with respect to the adaptation mechanisms in the face of a prolonged emergency, but they can help emergency workers to find and nurture a sense of personal accomplishment. The least protective strategy in situations of prolonged emergencies seems to be the emotional one, perhaps because it leads emergency workers to maintain a high sensitivity by reducing the sense of emotional self-protection, where instead those more cognitively focused strategies, such as task and problem-focused and those of emotional detachment allow to reduce the sense of anguish and fear of death to which emergency workers, especially professional ones, were exposed during the phases of greatest diffusion of the virus.

Limits

The present studies show several limitations. First, the data were collected during a single phase of the pandemic, while it would have been interesting to compare data about the various waves of Covid-19. Furthermore, in this study only self-report instruments were used and they are affected by various limits, for examples people may not be fully aware of their stress levels or minimize them due to social desirability. Third, the sample of emergency workers is quite heterogeneous, including both medical and emergency personnel. Finally, all study participants have the same nationality and this could affect the generalizability of the results.

Conclusion

The Covid-19 pandemic which represented a major international crisis has placed the importance of focusing greater attention on both professional and volunteer emergency workers who intervene

in the management of crises and disasters. Emergency workers are at risk of developing burnout and emergency stress, and the results of the study push us to reflect on finding prevention and intervention protocols for the mental health of both professional and volunteers workers, aiming to identify risk factors and work on the implementation of protective factors. Training should be developed to encourage the use of more specific coping strategies to manage the emergency leading to a reduction in excessive thoughts and emotions. Constant guidance support from the supervisor and working on cohesion and team spirit can help reduce stress factors and burnout and increase personal accomplishment. It is essential to focus on training to develop and create a greater sense of trust, and the conscious use of functional coping strategies in addition to implementing hardiness. The use of debriefing and defusing techniques could increase the sense of greater cohesion, closeness and sharing between colleagues and reduce the risk of personal emotional reactions in favor of problem-focused coping strategies.

References

1. Arias-Ulloa CA, Gomez-Salgado J, Escobar-Segovia K, Garcia-Iglesias JJ, Fagundo-Rivera J, Ruiz-Frutos C. Psychological distress in healthcare workers during COVID-19 pandemic: A systematic review. J Saf Res. 2023; 87: 297-312.
2. Giostra V, Maiorano T, Vagni M. What Resilience Skills Do Emergency Workers Need During a Widespread Phase of a Socio-Health Emergency? A Focus on the Role of Hardiness and Resilience. Soc Sci. 2025; 14: 8.
3. Lai T, Wang W. Attribution of Community Emergency Volunteer Behaviour During the COVID-19 Pandemic: A Study of Community Residents in Shanghai, China. Voluntas. 2023; 34: 239-251.
4. Li Y, Xie P, He L, Fu X, Ding X, Jobe MC, et al. The effect of perceived stress for work engagement in volunteers during the COVID-19 pandemic: the mediating role of psychological resilience and age differences. Peer J. 2023; 11: e15704
5. Mo T, Layous K, Zhou X, Sedikides C. Distressed but happy: health workers and volunteers during the COVID-19 pandemic. Cul Brain. 2022; 10: 27-42.
6. Roncone R, Giusti L, Mammarella S, Salza a, Bianchini V, Lombardi A, et al. "Hang in There!": Mental Health in a Sample of the Italian Civil Protection Volunteers during the COVID-19 Health Emergency. Int J Environ Res Public Health. 2021; 18: 8587.
7. Maqbali MA, Alsayed A, Hughes C, Hacker E, Dickens GL. Stress, anxiety, depression and sleep disturbance among healthcare professional during the COVID-19 pandemic: An umbrella review of 72 meta-analyses. PLoS ONE. 2024; 19: e0302597.
8. Ghahramani S, Hengameh K, Ramin H, Reza T, Marzaleh MA. Health care workers' mental health in the face of COVID-19: A systematic review and meta-analysis. Int J Psychiatry Clin Pract. 2023; 27: 208-217.
9. Huang J, Huang ZT, Sun XC, Chen TT, Wu XT. Mental health status and related factors influencing healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. PLoS ONE. 2024; 19: e0289454.
10. Yang S, Tan GKJ, Sim K, Lim LJH, Tan BYQ, Kanneganti A, et al. Stress and burnout amongst mental health professionals in Singapore during Covid-19 endemicity. PLoS ONE. 2024; 19: e0296798.
11. Vagni M, Maiorano T, Giostra V, Pajardi D. Coping With COVID-19: Emergency Stress, Secondary Trauma and Self-Efficacy in Healthcare and Emergency Workers in Italy. Front Psychol. 2020; 11: 566912.
12. Vagni M, Maiorano T, Giostra V, Pajardi D. Hardiness and Coping Strategies as Mediators of Stress and Secondary Trauma in Emergency Workers during the COVID-19 Pandemic. Sustainability. 2020; 12: 7561.
13. Vagni M, Maiorano T, Giostra V, Pajardi D. Hardiness, stress and secondary trauma in Italian healthcare and emergency workers during the COVID-19 pandemic. Sustainability. 2020; 12: 5592.
14. Vagni M, Giostra V, Maiorano T, Santaniello G, Pajardi D. Personal Accomplishment and Hardiness in Reducing Emergency Stress and Burnout among COVID-19 Emergency Workers. Sustainability. 2020; 12: 9071.
15. Vagni M, Maiorano T, Giostra V, Pajardi D. Protective Factors against Emergency Stress and Burnout in Healthcare and Emergency Workers during Second Wave of COVID-19. Soc Sci. 2021; 10: 178.
16. Vagni M, Maiorano T, Giostra V, Pajardi D, Bartone T. Emergency stress, hardiness, coping strategies and burnout in health care and emergency response workers during the COVID-19 pandemic. Front Psychol. 2022; 13: 918788.
17. Alanazy ARM, Alruwaili A. The Global Prevalence and Associated Factors of Burnout among Emergency Department Healthcare Workers and the Impact of the COVID-19 Pandemic: A Systematic Review and Meta-Analysis. Healthcare. 2023; 11: 2220.
18. Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory. Lanham, USA. Scarecrow Education. 1997.
19. Bartone PT. Hardiness protects against war-related stress in Army reserve forces. Consult Psychol J. 1999; 51: 72-82.
20. Kobasa SC. Personality and resistance to illness. Am J Community Psychol. 1979; 7: 413-423.
21. Mund P, Mishra M. Hardiness: A review and research agenda. Pers Individ Dif. 2025; 233: 112882.
22. Elham S, Lee TR. Psychological hardiness, social support, and emotional labor among nurses in Iran during the COVID-19 pandemic: A cross-sectional survey study. IJNS Advances. 2024; 7: 100249.
23. Gil-Almagro F, Garcia-Hedrera FJ, Carmona-Monge FJ, Penacoba-Puente C. From Anxiety to Hardiness: The Role of Self-Efficacy in Spanish CCU Nurses in the COVID-19 Pandemic. Medicina 2024; 60: 215.
24. Kislyakov PA, Shmeleva EA, Karaseva TV, Silaeva OA, Prijatkin DA. Hardiness and coping strategies of medical workers in countering emotional burnout (during the fourth wave of the covid-19 pandemic in Russia). Sib J Life Sci Agric. 2022; 14: 226-262.
25. Maiorano T, Vagni M, Giostra V, Pajardi D. COVID-19: Risk Factors and Protective Role of Resilience and Coping Strategies for Emergency Stress and Secondary Trauma in Medical Staff and Emergency Workers—An Online-Based Inquiry. Sustainability. 2020; 12: 9004.
26. Rerke VI, Belyakova NV, Mottaeva AB, Shipovskaya LP, Ignatyeva AV, Blinov LV, et al. Hardiness in the structure of personal resources conducive to overcoming professional burnout among workers during a pandemic. Revi Gen Interdiscip. 2021; 2.
27. Zakeri MA, Ghaedi-Heidari F, Khaloobagheri E, Rafsanjanipoor SMH, Ganjeh H, Pakdaman H, et al. The relationship between nurse's professional quality of life, mindfulness, and hardiness: A cross-

sectional study during the COVID-19 outbreak. Front Psychol. 2022; 13: 866038.
28. Shin H, Park YM, Ying JY, Kim B, Noh H, Lee SM. Relationships between coping strategies and burnout symptoms: A meta-analytic approach. Prof Psychol Res Pr. 2014; 45: 44-56.
29. Diggin S, Smith L, Kirkpatrick R, Dempster M. A systematic review of the relationship between burnout and coping strategies in emergency workers. J Workplace Behav Health. 2023; 38: 201-225.
30. Charoensukmongkol P, Moqbel M, Gutierrez-Wirsching S. The role of coworker and supervisor support on job burnout and job satisfaction. J Adv Manag Res. 2016: 13.
31. Simms L, Ottman KE, Griffith JL, Knight MG, Norris L, Karakcheyeva V, et al. Psychosocial peer support to address mental health and burnout of health care workers affected by COVID-19: a qualitative evaluation. Int J Environ Res Public Health. 2023; 20: 4536.
32. Wu AW, Connors C, Everly GS Jr. COVID-19: Peer Support and Crisis Communication Strategies to Promote Institutional Resilience. Ann Intern Med. 2020; 172: 822-823.
33. Liu N, Plouffe RA, Liu JJW, Nouri MS, Saha P, Gargala D, et al. Determinants of burnout in Canadian health care workers during the COVID-19 pandemic. Eur J Psychotraumatol. 2024; 15: 1-10.
34. Martin P, Tian E, Kumar S, Lizarondo L. A rapid review of the impact of COVID-19 on clinical supervision practices of healthcare workers and students in healthcare settings. J Adv Nurs. 2022; 78: 3531-3539.
35. Molnar L, Zana A, Stauder A. Stress and burnout in the context of workplace psychosocial factors among mental health professionals during the later waves of the COVID-19 pandemic in Hungary. Front Psychiatry. 2024; 15: 1354612.
36. Skogsberg M, Jarl G, Materne M. Health care workers' need for support from managers during the initial phase of the COVID-19 pandemic. BMC Health Serv Res. 2022; 22: 1563.
37. Kim H, Mattson LD, Zhang D, Cho HJ. The role of organizational and supervisor support in young adult workers' resilience, efficacy and burnout during the COVID-19 pandemic. J Appl Commun Res. 2022; 50: 691-710.
38. Siddiqui I, Gupta J, Collett G, et al. Perceived workplace support and mental health, well-being and burnout among health care professionals during the COVID-19 pandemic: a cohort analysis. Can Med Assoc J. 2023; 11: E191-E200.
39. Moisoglou I, Katsiroumpa A, Malliarou M, Papathanasiou IV, Gallos P, Galanis P. Social Support and Resilience Are Protective Factors against COVID-19 Pandemic Burnout and Job Burnout among Nurses in the Post-COVID-19 Era. Healthcare. 2024; 12: 710.
40. Siraj RA, Alhaykan AE, Alrajeh AM, Aldhahir AM, Alqahtani JS, Bakhadlq S, et al. Burnout, Resilience, Supervisory Support, and Quitting Intention among Healthcare Professionals in Saudi Arabia: A National Cross-Sectional Survey. Int J Environ Res Public Health. 2023; 20: 2407.
41. Bartone PT, McDonald K, Hansma BJ. Hardiness and Burnout in Adult U.S. Workers. J Occup Environ Med. 2022; 64: 397-402.
42. Endler NS, Parker JDA. Coping inventory for stressful situations: Manual. (2nd edition). Toronto, CA: Multi-Health Systems. 1999.
43. Sirigatti S, Stefanile C. Coping inventory for stressful situation: standardizzazione e validazione italiana. Firenze, IT. Giunti Organizzazioni Speciali. 2009.
44. Chesney MA, Neilands TB, Chambers DB, Taylor JM, Folkman S. A validity and reliability study of the coping self-efficacy scale. Br J Health Psychol. 2006; 11: 421-437.
45. Maslach C, Jackson SE, Leiter MP. MBI: Maslach Burnout Inventory, 3rd Edn. Sunnyvale, CA. Consulting Psychologists Press. 1996.
46. Sirigatti S, Stefanile C. Adattamento Italiano del MBI-Maslach Burnout Inventory. Firenze, IT: Giunti Organizzazioni Speciali. 1993.
47. Tomlin J, Dalgleish-Warburton B, Lamph G. Psychosocial Support for Healthcare Workers During the COVID-19 Pandemic. Front Psychol. 2020; 11:1960.
48. Wataya K, Tachikawa H, Nemoto K, Sasahara S, Oi Y, Doki S, et al. Association Between Occupational Stress and Mental Health in Healthcare Workers During the Coronavirus Pandemic in 2019. Cureus. 2025; 17: e81007.
49. Bruria A, Maya ST, Gadi S, Orna T. Impact of emergency situations on resilience at work and burnout of Hospital's healthcare personnel. Int J Disaster Risk Reduct. 2022; 76: 102994.
50. Bartone PT, McDonald K, Hansma BJ, Stermac-Stein J, Escobar EMR, Stein SJ, et al. Development and validation of an improved hardiness measure. Eur J Psychol Assess. 2023; 9: 222-239.