COVID-19

Burnout prevention in healthcare professionals during COVID-19

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Summary

Introduction. *Burnout syndrome represents the pathological outcome of a stressful process that mainly affects the "helping professions". During the COVID-19 pandemic, pressure on healthcare systems has led to an increase in psychological distress among healthcare workers. The aim of this study is to verify whether the practice of relaxation techniques in healthcare workers can improve emotional balance and stem burnout.*

Methods. *A small sample of 40 female rehabilitation therapists were divided into two groups (20 experimental group subjects and 20 control group subjects). The Maslach Burnout Inventory was administered to both groups, after informed consent, to highlight*

the correlation between working hours exceeding 30 hours per week and burnout, by subjecting the experimental group to mindfulness sessions between T0 and T1.

Results. *The data analysis highlighted a decrease in burnout in the experimental group after the mindfulness sessions.*

Conclusions. *The findings suggest that these relaxation techniques can be effective in stemming burnout and promoting psychological well-being. It is therefore possible to hypothesize that such increased and prolonged activities could show a more evident and statistically significant improvement.*

Introduction

The burnout syndrome, introduced by Herbert Freudenberger in 1974, indicates a situation of exhaustion characterized by frequent absences due to illness, resistance to go working sense of failure, tendency to isolation, loss of interest and loss of ability to concentrate [1]. Subsequently, it indicates a form of reaction to work stress typical of the helping professions (nurses, doctors, teachers, lawyers, policemen, *etc.*), in which the relationship with the patient/user assumes a negative relevance. The burnout syndrome therefore represents the pathological outcome of a stressful process that affects people who practice the "helping professions". When they fail to respond adequately to excessive loads of occupational stress and if not properly treated, they can develop a slow process of "attrition" and psychophysical decay due to the lack of energy to support and control stress. In such conditions the subjects can no longer discern their own life from that of the patients / users, due to the excessive burden of the problems of the assisted persons and this mechanism of excessive identification with the users determines the attrition of the worker [2].

During the COVID-19 pandemic, the pressure on health systems has led to an increase in psychological distress among health workers. Burnout has consistently shown in healthcare professionals the dose-response relationship with poor patient safety outcomes associated with anxiety, depression, stress, early retirement, substance abuse, and suicide [3]. This phenomenon

has led to the implementation of interventions by the World Health Organization, in consideration of the negative impact on the costs borne by Health Services. The criticalities of the health emergency continue over time, even if with minor outcomes and the consequences for health workers involve psychic distress and a mix of personal fears and occupational stress that become chronic and determine burnout with three dimensions: emotional exhaustion, depersonalization and feelings of reduced personal fulfillment [4]. During the SARS-CoV-2 pandemic, burnout among healthcare workers has not been fully understood, especially with regard to the different facets between work environment and concomitant psychological responses, such as anxiety and depression. The pandemic has required healthcare workers to endure a period of high workload under stressful conditions with rapidly changing guidelines and redistribution in unknown high-risk settings, while evoking the fear of transmitting the infection to loved ones. A recent review by Petros Galanis and colleagues, examining burnout and associated risk factors in nurses during the COVID-19 pandemic, highlighted that emotional distress, depression and anxiety are more frequent and significant in healthcare workers employed in front line in high risk departments compared to exposed to low risk [5]. In a 2020 study Benjamin Y.Q. Tan et al. through the answers to 3 validated questionnaires, they investigated how doctors, nurses, healthcare assistants and administrative staff of 4 public hospitals in Singapore involved in the treatment of COVID-19 cases, highlighted susceptibility to burnout,

suggesting adequate training as the best interpandemic clinical practice and work shifts of less than 8 hours to implement coping strategies and stem the effects of burnout [6]. Soto-Rubio A et al., in a cross-sectional study, state that an essential protective factor against psychosocial risks is emotional intelligence, correlated to psychophysical health, job satisfaction, greater work commitment with consequent reduction in burnout. This study analyzing a sample of 125 Spanish nurses, during the rise and peak of the COVID-19 pandemic, calculates hierarchical linear regression models considering levels of emotional intelligence and social support as moderating and protective effects of psychosocial risks, burnout and psychosomatic disorders [7].

OBJECTIVES

Our study has two objectives: to analyze, in a small sample of female rehabilitation therapists, the correlation between working hours exceeding 30 hours per week and burnout, also considering the levels of the subscales of the Maslach Burnout Inventory, highlighting how during health emergencies, it may prove useful to carry out relaxation techniques to improve emotional balance and stem burnout. in healthcare personnel.

Methods

The observational study recruited a small number of subjects as a result the spread of the SARS-CoV pandemic, limited only to the staff of a Rehabilitation Center which never interrupted its activity during the health emergency and none of the participants had contracted COVID-19.

All subjects voluntarily participated in the study after information and informed consent. The limitation of the study is the small number of subjects, all female. The study sample, made up of 40 professionals from a Sicilian Rehabilitation Center for adult and children patients, all female, is divided into two groups, comparable in socio-demographic characteristics (Tab. I):

1. An experimental group of n. 20 subjects;
2. A control group of n. 20 subjects.

After the data sheet with age, seniority, education and lifestyle habits to both groups in January 2022, (at time T0) during the morning work shift, the Maslach Burnout

Tab. I. Socio-demographic characteristics of the sample.

Population under study: n.40 women	
Age (years ± SD)	44.19 ± 11.62
Sex	Female
Educational level (years)	16
Marital status	Yes
Children	Yes
Working Seniority (years)	14
Smoking	No
Alcohol	No
Drugs	No

Tab. II. Scoring Maslach Burnout Inventory (MBI).

Maslach Burnout Inventory (MBI)	Emotional exhaust	Depersonalization	Professional achievement
High	24 ≥	9 ≥	0-29
Medium	15-23	4-8	30-36
Low	0-14	0-3	37 ≥

Inventory (MBI) is administered in a maximum time of 15 minutes. Subsequently, in June 2022, (at time T1) under the same space-time conditions, both groups were again administered the Maslach Burnout Inventory (MBI) [8]. The MBI it investigates the frequency of sensations that the subject experiences relative to each of the three subscales: Emotional Exhaustion (EE), Depersonalization (DP), Professional Achievement (PA), evaluated using a six-degree response mode on a Likert scale with range from 0 to 6, where 0 means that this situation has never occurred and 6 means that it has occurred every day. If the scores in the EE and DP subscales are high, while the PA subscale scores are low, a high degree of burnout will be obtained. If the scores are average in the three subscales, you will get an average degree of burnout. If the scores of the EE and DP subscales are low, while the PA subscale scores are high, there will be a low degree of burnout. The scoring mode is that proposed by Christina Maslach, whose threshold values are shown in the Table II. The control group was administered only the MBI at both T0 and T1, while the experimental group underwent mindfulness sessions lasting 30 minutes between T0 and T1, with 2 weekly meetings. The practice of mindfulness can, therefore, be considered as a sort of process which, through the implementation of particular meditation techniques, leads the individual to be aware of himself, of his own thoughts, of his own sensations and of reality, understood as here and now. The mindfulness sessions included, within a multisensory room, meditation exercises in a supine position, based on breathing and deep relaxation, to increase one's body perception with the aim of creating greater awareness in the individual [9].

STATISTICAL ANALYSIS

Data analysis was carried out, conducted using the SPSS-25 software, in order to analyze the correlations between the different variables under examination with two objectives.

Objective 1: at time T0 to analyze, in the experimental group and in the control group, the correlation between working hours (greater than 30 hours per week) and the three subscales of the MBI: Emotional Exhaustion (EE), Depersonalization (DP), Professional Achievement (PA).
Objective 2: in the time span between T0 and T1 compare, in the experimental group the averages of the three subscales of the MBI: Emotional Exhaustion (EE), Depersonalization (DP), Professional Achievement (PA).

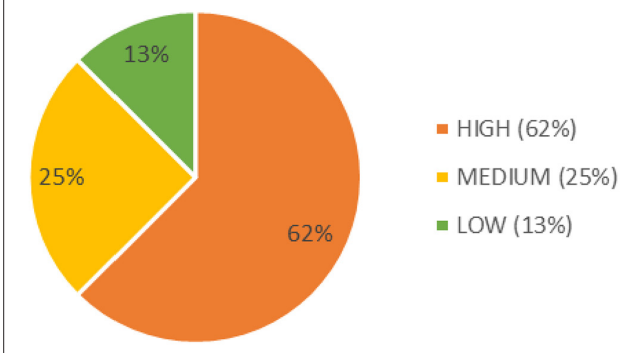Fig. 1. Burnout level of the experimental group at time T0.

HIGH (62%)
MEDIUM (25%)
LOW (13%)

Fig. 4. Burnout level of the control group at time T1.

HIGH (59%)
MEDIUM (26%)
LOW (15%)
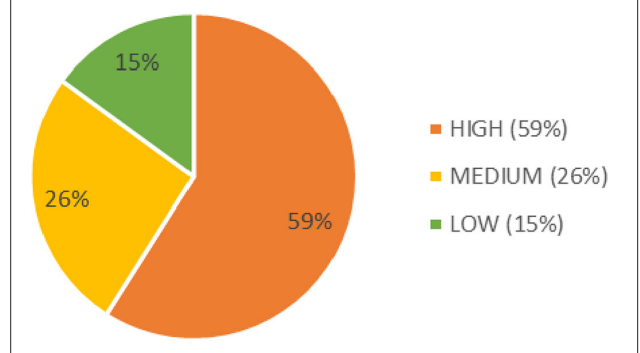
Fig. 2. Burnout level of the control group at time T0.

HIGH (57%)
MEDIUM (28%)
LOW (15%)
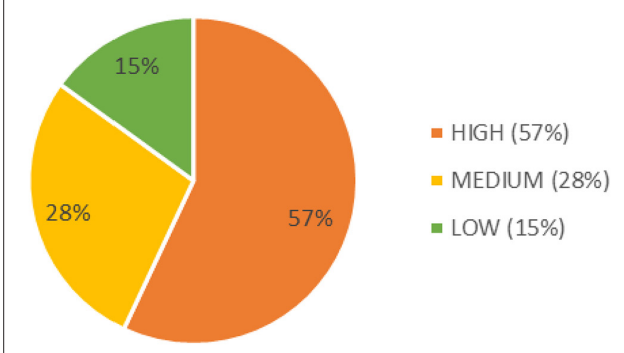
Fig. 3. Burnout level of the experimental group at time T1.

HIGH (31%)
MEDIUM (25%)
LOW (44%)
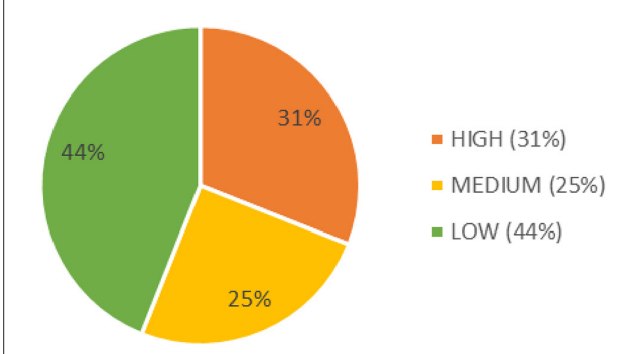
Results

For both groups, the scores for the 3 subscales of the MBI were calculated: Emotional Exhaustion, Depersonalization and Professional Achievement. In the experimental group at time T0, the calculation of the scores of the 3 subscales showed burnout levels distributed as follows: 62% of the subjects reported a high burnout level, 25% medium level and only 13% low (Fig. 1). Again at time T0 in the control group, the calculation of scores at the 3 subscales of the MBI showed in 57% of the subjects a high burnout level, in 28% of them a medium level and in 15% a low level (Fig. 2). At time T1, the MBI was administered again to both the experimental and control groups, in the same

spatiotemporal conditions with the difference that the experimental group performed mindfulness sessions in the time frame between T0 and T1. The administration of MBI in the experimental group at T1 shows that the scores reported in the 3 subscales determine: in 31% a high level of burnout, in 25% a medium level of burnout and in 44% a low level of burnout (Fig. 3). In the control group at T1 no statistically significant differences emerged: 59% reported a high level of burnout, 26% a medium level and 15% a low level (Fig. 4).

Objective 1: as can be seen from Table III, working hours above 30 h correlates positively with the MBI subscale Emotional Exhaustion (made with Pearson correlation: $r = 0.538$; $p < 0.05$). This denotes for both groups that the more time the subject spends at work, the more he experiences emotional exhaustion. Depersonalization positively correlates with Emotional Exhaustion, while it correlates negatively with Professional Achievement. Therefore, the analysis showed a statistical significance between working hours and the scores of the three subscales at time T0 for all 40 subjects in the sample under study.

Objective 2: in the experimental group the comparison of the averages of the three subscales of Emotional Exhaustion, Depersonalization and Professional Achievement at time T0 and T1, statistically indicates the presence of a slight improvement in the level of burnout. It is evident from Table IV, that the average of the scores of the 20 subjects of the experimental group regarding emotional exhaustion and depersonalization at time T0 is greater, while at time T1 it is reduced, conversely, the average of professional achievement has increased.

Discussion and conclusions

Various studies suggest that different factors are associated with burnout and underline the multidimensionality of burnout [10, 11]. Comparing groups with high and low levels of burnout, a study showed that long working hours correlate significantly with burnout and working time is more associated with burnout among individuals under the age of 50, women and physically inactive or sedentary employees [12]. A research by Koinis and collaborators has analyzed and highlighted how the

Tab. III. Experimental group: Pearson T0 correlation between working time and MBI

		Working hours > 30h	Emotional Exhaustion	Depersonalization	Professional Achievement
Working hours > 30h	Pearson correlation	1			
Emotional Exhaustion	Pearson correlation	.538*	1		
Depersonalization	Pearson correlation	.290	.665**	1	
Professional achievement	Pearson correlation	-.215	-.609*	-.602*	1

* The correlation is significant at level 0.05 (two-tailed). ** The correlation is significant at level 0.01 (two-tailed).

Tab. IV. Experimental group: average comparison of the 3 MBI subscales at T0 and T1

	Times	Subjects	Average	Standard Deviation
Working hours > 30h	T0	n. 20	0.94	0.250
	T1	n. 20	0.94	0.250
Emotional Exhaustion	T0	n. 20	30.56	13.165
	T1	n. 20	22.31	11.080
Depersonalization	T0	n. 20	7.13	6.541
	T1	n. 20	2.75	4.626
Professional Achievement	T0	n. 20	38.75	5.273
	T1	n. 20	42.13	3.810

lack of emotional regulation and coping strategies can determine harmful effects on the psychophysical health and job satisfaction of health workers, particularly in nurses, resulting in stress and burnout [13]. According Stella Dorz et al. [14], sex seems to have an influence on burnout, in the sense that men experience high levels of "depersonalization", while women tend to be more easily "emotionally exhausted". During the COVID-19, working in crowded hospitals, night shifts and/or for long hours, lack of sufficient access to personal protective equipment have favored burnout syndrome [15]. A review aims to explain the potential impact of coronavirus disease (COVID-19) on the mental well-being of healthcare professionals by describing the associated psychological disorders and experiences that may arise in relation to COVID-19, in particular acute stress disorder (ADS), post-traumatic stress disorder (PTSD) and mass trauma. The review suggests also measures as possible interventions for the treatment and prevention of trauma, stress and burnout with the aim of understanding the emotional state of health workers during the pandemic and stemming mental illnesses and psychotraumas underlying COVID-19 [16]. It is important that hospitals provide for the basic physiological needs of health workers, supplying adequate nutrition, ensuring rotations are adhered to for sufficient rest, limiting overwork that is a known driver for burnout, providing psychological support and a comfortable environment, and offering cognitive-behavioral therapy that has proven useful in previous outbreaks [17]. Social support has also been identified as an important protective factor against trauma [18,19] together with support of psychoeducational workshops that provide information about the potential psychological effects that can occur during a pandemic [20-22]. It is necessary in times of pandemic to think about treating stress by developing

psychological strategies for all health workers and not just for those working on the front line. It is a challenge to design programs to alleviate burnout by focusing on reprocessing traumatic memories. Some research suggests the use of psychological micro-practices, which are activities that focus on better management of the emotional aspects of stress [23, 24], with mindfulness practices to manage the emotional symptoms of exhaustion and depersonalization [25-28]. The call to create programs to prevent PTSD and burnout during the SARS-CoV-2 pandemic inspired our study that highlighted in our sample the negative correlation between burnout and working hours. It was not possible to highlight a correlation between the degree of burnout and gender since the entire sample was female and this represents a limitation of the study. The mindfulness activity improved the empowerment of each operator, albeit in the short period of time of the investigation limited for contingent reasons. The survey was born with the aim of assessing whether these mindfulness activities carried out during work can promote a condition of global well-being, enhancing the ability to control and the awareness in order to improve health, lifestyle and above all organizational well-being. The results suggest that these relaxation techniques may be effective for occupational stress and burnout as they improve psychological well-being [16]. It is possible that such prolonged mindfulness activities could show a more noticeable and statistically significant improvement. An important sign noted is that all subjects in our sample expressed a desire to increase and continue mindfulness. Caregivers felt more considerate of patients and reported improved interpersonal relationships with problem-solving and fewer conflicts at work. Our study has methodological limitations: the small number of the sample, the administration of a single questionnaire, the

short time frame of the study, but it would be desirable to introduce periodic mindfulness sessions for all health personnel within the work shifts constantly and continously to allow operators to obtain a space and a "dedicated and special" time in which it becomes possible to dedicate themselves to sharing and expressing their own anxieties and personal experiences, integrating and experiencing states of well-being, providing new strategies. In this way the operator no longer perceives himself as an individual but as part of a group to which he feels he belongs, which he influences and by which he is mutually and positively influenced and this improves both the relationship with colleagues and feeds a better relational competence with the humanization of the patient who in this way will be considered as a human being in his totality.

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Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Conflict of interest statement

The authors declare no conflict of interest.

Authors' contributions

EM: Conceived and designed. EGC: Analysis of data. All authors have read and agreed to the published version of the manuscript.

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