Secondary traumatic stress and resilience among healthcare professionals: The role of burnout and moral injury

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***Abstract*:** Several researchers have found a negative association between resilience and secondary traumatic stress (STS). However, there are situations in which some medical professionals, following exposure to traumatic events suffered by their patients, experience STS symptoms, but still maintain or reach a significant level of resilience. This could indicate that different factors may be involved in the relationship between STS and resilience. The current study aimed to investigate the relationship between STS and resilience in healthcare professionals and to identify possible mediators of this relationship: burnout and moral injury. The study was conducted on a sample of 174 healthcare professionals working in hospitals and clinics. The results showed the presence of a significant negative relationship between STS and resilience in healthcare professionals. Also, both burnout and moral injury partially mediated the relationship between STS and resilience. These results may offer some explanation as to why some healthcare professionals manage to remain resilient even after constant exposure to traumatic events, while others have difficulties recovering from them. Therefore, organizations should provide education and training to medical professionals, both on the effects that exposure to trauma experienced by their patients can have on them, as well as conducting programs to reduce burnout and support groups to help them through difficult situations that may cause moral injury.

***Keywords*:** Secondary traumatic stress, Resilience, Healthcare professionals, Burnout, Moral injury

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Introduction

Research examining both the negative and positive responses to trauma exposure, has shown a significant negative association between secondary traumatic stress (STS) and resilience (McGarry et al., 2013; Warren et al., 2013; Wong et al., 2022). However, there could be instances in which, some categories of healthcare professionals experience symptoms of STS and, at the same time, maintain average to high levels of resilience. This raises the question regarding other variables that could come into play in the relationship between these two phenomena and the way they interact. Especially if we take into account the pandemic context that was present in the last few years, which was expected to and perceived as being overwhelming and overpowering by many healthcare professionals that were understaffed, and had insufficient resources (Greenberg et al., 2020; Kendall-Tackett & Beck, 2022; Litam & Balkin, 2021; Williamson et al., 2020), it is important to raise the question regarding all the pathologies that can develop and how to promote resilience. Besides STS, which is connected to exposure to patients' trauma, the pandemic context and the prolonged crisis that was brought by it, have the ability to raise the risks for experiencing burnout and moral injury (Hwang et al., 2023; Kendall-Tackett & Beck, 2022). Moral injury is especially important, because until the last few years, it was primarily researched in the context of military, but lately there is evidence that it could also impact healthcare workers and that some of the symptoms that were labeled as being a result of the posttraumatic stress disorder (PTSD), could be actually elements specific to the development of moral injury (Kendall-Tackett & Beck, 2022). Moreover, even though there are some common characteristics between moral injury and burnout, it is important to separate them and to include moral injury when investigating burnout, especially in this context (Kopacz et al., 2019).

The relationship between STS and resilience

STS is a phenomenon that shares the same responses that can be observed in PTSD, with the difference that it assumes an indirect exposure to trauma (Figley, 1995). It is especially prevalent in professions in which the professionals want to help people that experienced traumatic events, which can be a stressful experience that could have an impact both emotionally and at a behavioral level (Figley, 1995).

According to Richardson (2002), resiliency is "the process of coping with adversity, change, or opportunity in a manner that results in the identification, fortification, and enrichment of resilient qualities or protective factors" (p. 308). This is a process that implies both the existence of an aversive event and the possibility of adaptation, through the construction of positive aspects that help

the individuals to function at an optimal level (Turliuc et al., 2013). Resilience is seen as an important resource that develops over a longer period of time and helps the individuals redress after being exposed to a traumatic event (Connor, 2006). A higher level of resilience is important not only in the moment of exposure to trauma, where it can have a role in the prevention of the occurrence of symptoms specific to traumatic stress, but also for individuals that already present this type of symptomatology, where interventions developed to promote resilience can help them recover in some domains and potentially see a growth in different aspects of their life that were affected (Bonanno, 2005).

As presented in the Compassion Fatigue Resilience model (Ludick & Figley, 2017), STS is directly associated with the level of resilience, which is seen as the "salutogenic opposite of STS" (Ludick & Figley, 2017, p. 116). Depending on the factors that will intervene, the levels of STS and resilience of the professional will vary (Ludick & Figley, 2017).

The revised version of the Theoretical model of posttraumatic growth (Tedeschi et al., 2018) also emphasizes that after exposure to an event that is perceived as being highly challenging and disruptive the individuals may become more resilient. This could happen if, after the exposure to the traumatic event, their beliefs are not destroyed, but rather used to offer context for the event. Therefore, the distress is mitigated, which could lead to more resilience and the return to the old way of functioning (Tedeschi et al., 2018).

There are different trajectories that can arise as the result of the exposure to an event perceived as traumatic by the individual (Bonanno, 2004; Bonanno & Mancini, 2008). The first two are chronic dysfunction, which refers to the development of symptoms specific to PTSD, that are persistent over time and in severity, and delayed reactions, where even though the symptoms are initially moderate as severity, they worsen over time (Bonanno & Mancini, 2008). Resilience involves a reduced number of PTSD symptoms and the capacity of the individual to maintain a certain level of functioning, which implies that even in the case of resilient individuals, they can experience distress, but at mild to moderate levels (Bonanno & Mancini, 2012). The last trajectory is recovery, where an individual experiences a period of higher levels of symptoms in which the normal functioning is challenged, but they improve over time (Bonanno, 2004). Resilience and recovery are a result of the use of adaptive coping strategies (Bonanno & Mancini, 2008).

Regarding the relationship between STS and resilience in the case of health professionals, most studies show that although they co-occur, there is a significant negative relationship between them (Atay et al., 2021; McGarry et al., 2013; Warren et al., 2013; Wong et al., 2022).

The mediating role of burnout

The concept of burnout was firstly used to depict the possible consequences of working in free clinics with patients who are vulnerable at a psychological, physical and emotional level (Freudenberger, 1974), and later was expended in order to capture the experiences of all the professionals working in stress driven environments, such as the medical context (Rotenstein et al., 2018). Burnout is a psychosocial syndrome, which includes "emotional exhaustion, depersonalization and reduced personal accomplishment" (Maslach, 1982, p. 3), and is seen as being a temporal consequence, developing gradually (Beck, 2011).

A number of researchers have separately studied the relationship between resilience and burnout and between STS and burnout, in the first case the relationship being significantly negative (McGarry et al., 2013; Ogińska-Bulik & Michalska, 2021; Wong et al., 2022), and in the second, positive, as found in multiple studies and a meta-analysis (Cieslak et al., 2014; Passmore et al., 2020; Wong et al., 2022). Furthermore, Ogińska-Bulik and Michalska (2021) have shown that burnout acts as a mediator in the relationship between resilience and STS in the case of nurses working with terminally ill patients, while Roden-Foreman and the collaborators (2017) highlighted the idea that there is a possibility for burnout to corrode the resilience of an individual, which may be important for their triad with STS. Another perspective is the one presented by Cieslak and the collaborators (2014), which specify that STS and burnout can coexist. This could be explained by the fact that the individuals that suffer from symptoms specific to STS for a longer period of time may end up being also emotionally exhausted and having a decline in energy. Also, the presence of these symptoms and their severity, may make them avoid specific categories of patients, which would also lead to a disengagement from work (Demerouti et al., 2001). All of these negative consequences could also play a part in the degree to which the individuals continue to take care of their well-being and engage in activities that promote self-care, as well as in their satisfaction with their job, which are important for building a high level of resilience in the face of traumatic stress (Ludick & Figley, 2017). Therefore, based on these results we test whether burnout acts as an explanatory mechanism of the relationship between STS and resilience.

The mediating role of moral injury

Researchers have tried in the past to explain why symptoms specific to PTSD can be of a long-term nature in the case of soldiers, and one of their answers was the presence of moral injury (Jones, 2020). Moral injury is a concept that was studied a lot in the case of soldiers, which work in a field that comes with constant exposure to violence, death and moral dilemmas. It refers to

the psychological consequences that could appear as a result of taking actions or being a witness and being unsuccessful in preventing actions that are in contradiction with the moral belief system of and individual (Litz et al., 2009).

In periods of high professional and personal workload, the question arises whether moral injury could also affect healthcare professionals, who often find themselves in the position where they are faced with difficult decisions (Greenberg et al., 2020). As a result, they might feel that they have not done everything they could do, which could make it difficult for them to accept the event, and lead to experiencing shame, guilt, feelings of betrayal and difficulty forgiving both themselves and others (Kopacz et al., 2019; Litz et al., 2009). Specifically, this type of emotions and moral cognitions may be even more favored by the exposure to the traumatic events suffered by their patients, especially if the healthcare professionals felt that they couldn't act in accordance with their training because of elements such as caseload, reduced resources and a stressful environment (Williamson et al., 2020). This may in turn determine the way the individuals face these challenges, if they succeed to maintain an optimal level of functioning and to be resilient, especially because their assumptions and beliefs, which could offer context for their experiences, are extremely important in the pathway to resiliency (Tedeschi et al., 2018). The research realized in the last years highlights the existence of this phenomenon especially in the case of nurses (Beck, 2022; Stovall et al., 2020), as well as the presence of a significant positive association between STS and moral injury (Litam & Balkin, 2021). Additionally, in their review, Laher and collaborators (2022), outline the fact that both moral injury, and associated constructs, especially STS, were observed to be present in the staff working in care and nursing centers. As for resilience, there is evidence for the presence of a negative association between moral injury and moral resilience in healthcare professionals (Berdida, 2023), as well as between moral injury and psychological resilience (Akhtar et al., 2022). Based on these results, we test if moral injury acts as a mediator of the relationship between STS and resilience.

The present study

The aim of this study was to investigate and explain the relationship between STS and resilience in healthcare professionals. Our objectives were to study this relationship both between the total score of STS and resilience, and between the dimensions of STS and resilience. Moreover, we aimed to investigate the possible mediating role of burnout and moral injury for this relationship. We hypothesized that: (H1) there is a significant negative relationship between STS and resilience, both for the global score and each dimension of STS in the case of healthcare professionals. We also hypothesized

that: (H2) burnout and moral injury mediate the relationship between STS and resilience in healthcare professionals.

Method

Participants

The sample consisted of 174 healthcare professionals working in hospitals and clinics, aged between 22 to 69 (M = 41.68, SD = 11.18). The sample was comprised predominantly of women (81%). Regarding the professional category, 54.6 % of the participants were doctors, while 40.8% were nurses and 4.6% other categories of medical workers. Their professional experience ranged from one year to 40 years (M = 15.01, SD = 11.10). The participants were from multiple departments such as internal and general medicine, emergency and intensive care, oncology and radiology, gynecology, obstetrics and neonatology, surgery, respiratory medicine and so on.

Measures

Secondary Traumatic Stress Scale (STSS; Bride et al., 2004). This is a scale consisting of 17 items which measure STS and its three dimensions: intrusion (e. g. "I had disturbing dreams about my work with clients"), avoidance (e. g. "I had little interest in being around others") and arousal (e. g. "I felt jumpy"). The STSS is measured on a 5-point Likert Scale (1 = *never* to 5 = *very often*). The Alpha Cronbach coefficient is .92 for the whole measure, .78 for the intrusion subscale, .83 for the avoidance subscale and .84 for the arousal subscale.

Brief Resilience Scale (BRS; Smith et al., 2008). Resilience was measured using Brief Resilience Scale, which measures the ability to bounce back after exposure to situations that are perceived as stressful. It consists of 6 items (e. g. "I tend to bounce back quickly after hard times"). It is rated on a 5-point Likert Scale (1 = *strongly disagree* to *strongly agree*) with some items being reversed. The Alpha Cronbach coefficient has the value .81.

Burnout subscale from The Professional Quality of Life Scale V (ProQOL; Stamm, 2010). This measure was developed to measure 3 aspects of the professional quality of life: burnout, compassion satisfaction and compassion fatigue or STS. The burnout subscale consists of 10 items (e. g. "I feel worn out because of my work as a [helper]"), with some items being reversed. The subscale is measured on a 5-point Likert Scale (1 = *never* to 5 = *very often*). The Alpha Cronbach coefficient is .74. According to the manual, the raw scores are transformed in z scores and after in t scores.

The Moral Injury Symptom Scale-HP (Mantri et al., 2020). This is a scale adapted to measure the moral injury experienced by healthcare professionals and

focuses on aspects such as guilt, shame, loss of meaning, moral concern. It consists of 10 items (e. g. "I am troubled by having acted in ways that violated my own morals or values") and the respondents have the possibility to answer from 1 (*strongly disagree*) to 10 (*strongly agree*), with some items being reversed. Alpha Cronbach coefficient for the version used in our study has the value .70.

Socio-demographic information. The participants were asked to offer information such as age, gender, professional category, professional experience and specialization.

Procedure

This study was approved by the ethical commission of the faculty (number 3647/10.11.2021). Taking into account the fact that entering in hospitals was still not allowed at the time of conducting this research, the data was collected using Google Forms. There were a few designated persons of contact who distributed the form with their colleagues in different hospitals and clinics. The only condition was for the participants to be healthcare professionals. The participants were informed at the start of the form that the participation is voluntary, the answers are anonymous and that they could withdraw from the study at any point in the time. They were also free to ask any questions regarding the research. The participants were not remunerated for participating in the study.

Statistical analysis

For the statistical analyses, we used SPSS 22 and Process Version 4 (Hayes, 2022). We have checked for the normality of distribution, and we ran analyses to verify the correlations between the variables of interest and to see if there are differences based on gender for resilience. For the mediation model, we have used model 4 from PROCESS. For all analyses a .05 statistical significance value was adopted.

Results

Preliminary analyses

We have first run analyses to check for the normality of the distribution and where it was the case, we have computed data transformations is order to normalize the data.

The mean STS score for the sample was 39.03 (SD = 11.54). Regarding the levels of STS, 28 participants (16.1%) presented "little or no STS", 55 participants (31.6%) presented "mild STS", 36 participants (20.7%) presented "moderate STS", 22 participants (12.6 %) presented "high STS" and 33

participants (19%) presented "severe STS" (Bride, 2007; pp. 67-68). Over half of the participants (52.3 %) obtained a score higher than the cutoff point of 38.

The mean resilience score for the sample was 3.56 ($SD = 0.69$). A number of 26 participants (14.9 %) presented scores that could be considered as representing low resilience, 115 participants (66.1%) had scores that could be consider as normal resilience and 33 participants (19%) had scores that could be consider as high resilience (Smith et al., 2013).

We have also checked if there were differences between participants with low to mild, moderate and high or severe STS regarding their levels of resilience. The results showed a significant difference ($F(2, 171) = 32.10$, $p < .001$), and after checking the mean differences and the significance, all differences were significant, with individuals with low to mild levels of STS having the highest level of resilience ($M = 4.01$, $SD = .57$), followed by those with moderate levels ($M = 3.54$, $SD = .57$) and those with high to severe levels ($M = 3.11$, $SD = .63$).

The results also showed the presence of a significant difference between men and women regarding their level of resilience in the case of healthcare professionals ($t(172) = -2.93$, $p = .004$), with men having a higher resilience level ($M = 3.88$, $SD = .68$) compared to women ($M = 3.49$, $SD = .68$).

Correlational analyses

The correlations among all of the variables are presented in Table 1. Regarding the relationship between STS and resilience a significant negative relationship was observed ($r = -.51$, $p < .001$). The same significant negative relationship was observed between the intrusion ($r = -.46$, $p < .001$) avoidance ($r = -.46$, $p < .001$) and arousal ($r = -.46$, $p < .001$) subscales of STS and resilience.

As for the relationship between STS and the variables included in the mediation model, a significant positive relationship was found both with burnout ($r = .65$, $p < .001$) and moral injury ($r = .52$, $p < .001$).

A significant positive relationship was also found between the three subscales of STS and burnout and between the three subscales of STS and moral injury (see Table 1).

In contrast, there was a significant negative relationship between burnout and resilience ($r = -.57$, $p < .001$) and between moral injury and resilience ($r = -.53$, $p < .001$).

Burnout and moral injury also had a significant positive relationship ($r = .59$, $p < .001$).

**Table 1.** Pearson correlations, Means and Standard Deviations for study variables

Variable	1	2	3	4	5	6	7
1.STS total	–						
2. Intrusion	.87***	–					
3. Avoidance	.92***	.72***	–				
4. Arousal	.90***	.69***	.77***	–			
5. Burnout	.65***	.48***	.65***	.62***	–		
6. Moral injury	.52***	.38***	.53***	.48***	.59***	–	
7. Resilience	-.51***	-.46***	-.46***	-.46***	-.57***	-.53***	–
M	39.03	11.66	15.23	12.40	50	33.16	3.56
SD	11.54	3.59	5.02	4.06	10	11.88	0.69

Note: STS = secondary traumatic stress *** p < .001

Burnout and moral injury as mediators

The multiple mediation analysis was conducted to test if whether burnout and moral injury act together as mediators in the relationship between STS and resilience. STS was a positive predictor for burnout and moral injury, while burnout and moral injury were negative predictors for resilience (see Figure 1).

The indirect effect was significant for both burnout and moral injury (β_{ab1} = -.20, 95% CI [-.30; -.10]; β_{ab2} = -.13, 95% CI [-.21; -.06]) and the overall model explained a significant amount of variance in the level of resilience (R^2 = .40, $p < .001$). The total effect of STS on resilience was significant (β_c = -.51, p < .001; 95% CI [-.03; -.02]), while the direct effect was also significant, but lower ($\beta_{c'}$ = -.16, p = .03, 95% CI [-.01; -.0006]), which showed that burnout and moral injury partially mediate the relationship between STS and resilience in the case of healthcare professionals.
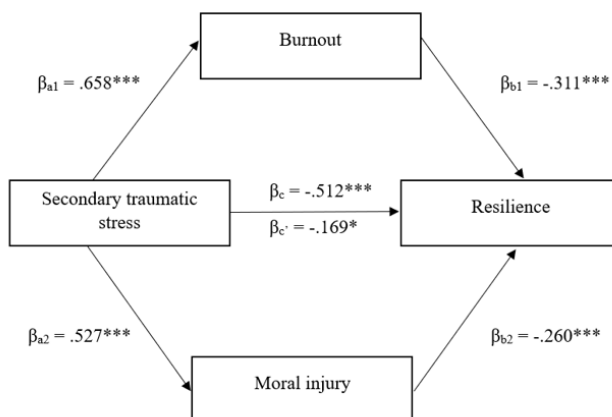
Note. * p < .050; *** p < .001

Figure 1. Mediating role of burnout and moral injury on the relationship between STS and resilience

Discussion

The current study aimed to investigate the relationship between STS and resilience and its possible mediators, specifically burnout and moral injury, in the case of healthcare professionals. The study is of interest because it brings to our attention a concept that was only in the recent years highlighted as being a possible consequence of working as a healthcare professional, and not only in the military, namely moral injury, and it tries to investigate if the symptoms experienced by the medical staff are only related to STS, or are better explained as a combination of STS and other phenomena. It also investigates the route to resiliency and in which instances it is possible to still follow maintain or achieve resilience even after exposure to trauma.

Regarding the participants in this study, they generally presented moderated levels of STS, with over half of them having scores that exceed the cut-off point, and with over 30% having scores that could be considered high or severe. As for resilience, the scores were also generally moderated. We have also observed that there is a significant difference between low to mild, moderate and high to severe levels of STS regarding the level of resilience, with individuals presenting low to mild levels of STS having the highest levels of resilience, followed by individuals with moderated levels of STS.

As to gender, our results show that women have lower levels of resilience. Bonanno and Mancini (2008) and Bonanno and Diminich (2013) present gender

14

as a possible element that differentiate why some people are more resilient than others. In this case, a possible explanation is that male health professionals have the tendency to distance themselves more from the emotional aspects of their work, spend less time on communication centered on patients' traumatic experience and have less emotional responses, which could reduce the impact of distress (Hamama-Raz et al., 2020). Also, it could be possible that they have more confidence in their capacity, which might favor an adaptive assessment of the situation in a way that enables them to maintain a constant and optimal level of functioning (Ghahramani et al., 2023).

The relationship between secondary traumatic stress and resilience

The results confirmed our first hypothesis that between STS and resilience there is a significant negative relationship in the case of healthcare professionals, therefore a lower level of STS is associated with a higher level of resilience. This is in accordance with what was observed in the literature (Atay et al., 2021; Ogińska-Bulik & Michalska, 2021; Wong et al., 2022). This is also in line with the idea that resilience could be an outcome after experiencing distress, if the consequences of the exposure are not experienced at a high or severe level (Bonanno & Mancini, 2012). As long as the level is not as high as to impair the individuals optimal functioning, they would still be able to use their assumptions and beliefs to offer context for their experiences (Tedeschi et al., 2018). As a result, their reaction to trauma and its consequences will be transitory (Bonanno & Diminich, 2013). In contrast, a high level of symptoms specific to STS, will make it harder for the individuals to continue to function at their baseline level, a trajectory of resilience in the long term being more difficult to attain without the mitigating role of the preexisting beliefs (Tedeschi et al., 2018). Additionally, the same type of relationship was observed between the three dimensions of STS (intrusion, arousal, avoidance) and resilience.

Burnout, moral injury, STS and resilience

The results confirmed our second hypothesis, burnout and moral injury partially mediating the relationship between STS and resilience, which was previously shown in the case of burnout (Ogińska-Bulik & Michalska, 2021). The results are also in accordance with the findings from the literature according to which there is a significant positive relationship between STS and burnout (Hamid & Musa, 2017; Passmore et al., 2020; Yıldız, 2023), and between STS and moral injury (Litam & Balkin, 2021), and resilience was found to have a significant negative relationship with both burnout (Guo et al., 2018; Lyu et al., 2021) and moral injury (Akhtar et al., 2022; Berdida, 2023).

Healthcare professionals work in an environment that comes with a range of challenges that require the use of a large number of resources. Additionally,

depending on the specialization, the job demands can be so high that it leaves little opportunities to rest and recover those resources (Maslach & Leiter, 2016). This is an important aspect, because the level of job demands can be essential in studying burnout (Hakanen et al., 2008), with them being seen as representing the component of the workplace that is related to the exhaustion of an individual, as presented in The Job Demands-Resources model of burnout (Demerouti et al., 2001). If the demands continue to be the same and the professionals perceive that they do not have the required resources to meet them, the effort made to continue their work will be higher both physically and mentally, and they will be more vulnerable to experience burnout over time (Demerouti et al., 2001; Hakanen et al., 2008; Maslach & Leiter, 2016). In the present case, working in a field that requires exposure to the trauma of the patients, which at times, could be quite constant, and costly in terms of resources necessary, as well as the experiencing of STS symptoms as a result of these events could be considered the typical work setting for the occurrence of burnout and its presence for long periods of time (Passmore et al., 2020).

The fact that STS and burnout can coexist (Cieslak et al., 2014) entails a higher emotional cost and risk of resource depleting, which makes returning to the baseline functioning a challenge (Bonanno & Mancini, 2012). A disproportion between demands and resources, not enough time to recover, overexposure to stress, a reduced feeling of competence, isolation and a reduced sense of control, all represent obstacles in the process of attaining a high level of resilience (Mahmoud & Rothenberger, 2019).

At the same time, the presence of moral injury can be explained by the pandemic context experienced recently. Besides the exposure to the traumatic material of the patients, the last few years represented as expected by Greenberg and the collaborators (2020) a period of uncertainty, which came with a concerning increase in the workload, in the number of patients that needed care and with extremely difficult decisions. The high number of patients, and the insufficient supplies have generated situations in which healthcare professionals found themselves in the position in which they were constrained to prioritize some patients over others, to decide on treatments without having enough time to weigh in all the alternatives and to make difficult medical choices. Besides that, this whole crisis, made it difficult to save all the patients or to intervene in the situations perceived as being wrong, especially because there were policies that needed to be followed (Kendall-Tackett & Beck, 2022). All of these also contributed to creating an extremely stressful and exhausting working environment, which can favor the occurrence of STS symptoms, as well as negative thoughts about oneself, both as a professional and a human, the experiencing of moral emotions, and acts of self-condemnation (Litam & Balkin,

2021). To this we add a sense of vulnerability, and moral concerns, including their relationship with their colleagues and the organization (Beck, 2022).

As we can see, both burnout and moral injury are phenomena that have a high level of job demands, both physical and psychological, as well as a high level of stress at their core (Guttormson et al., 2022). Therefore, it is possible that some of the experiences presented as being as a result of burnout, to be in reality a combination of burnout and moral injury, especially when their symptoms are also accompanied for example, by feelings of shame and guilt (Kopacz et al., 2019). This is because, the medical field is known as being one in which the patient should be the priority, and all of the decisions and actions undertaken should be modeled to fit their best interest, but this is not always the case (Dean et al., 2019).

Considering that burnout and moral injury partially mediate the relationship between STS and resilience, we can infer that the presence or the absence of symptoms present in burnout, which makes the professionals feel exhausted, without any source of restauration of their resources, and less competent (Maslach & Leiter, 2016) and the moral emotions and cognitions specific to moral injury might make the difference between the individuals that experience STS and still maintain a level of resilience and those who do not follow the trajectory of resiliency. As specified in the revised version of The Theoretical model of posttraumatic growth (Tedeschi et al., 2018), after experiencing distress as a result of exposure to trauma, the pathway to resilience is characterize by the presence of assumptions and beliefs that could offer context to the event. However, one of the characteristics of moral injury is the fact that the beliefs of an individual are altered and this alteration is likely to be at a more global level, which creates more distress (Litz et al., 2009). In addition, in the case of burnout, we could also see some alterations regarding the way they view their sense of competence, so we also have a maladaptive evaluation component (Maslach & Leiter, 2016), and it will be more difficult for individuals to give themselves opportunities to rectify their views and to experience good feelings (Litz et al., 2009).

Furthermore, one of the symptoms specific to STS is avoidance, which could possibly lead to detached responses to the job and depersonalization (Kim, 2017), an aspect that also appears in burnout and moral injury, when people, as a result of the emotional exhaustion that came with their work and the dissonance of their moral conflict, use these types of responses to initially protect themselves (Litz et al., 2009; Maslach & Leiter, 2016). This emotional exhaustion could also be amplified by the efforts needed to cope with the other symptoms that come with STS, especially because even after a traumatic event there are expectations from the healthcare professionals to provide the same level of implication and care as prior to the event (Kim, 2017). Moral injury

additionally has the ability to intervene in the chronicization of intrusions, which are also experienced in STS (Litz et al., 2009). As a result, the level of perceived distress is higher, and the level of resources is lower (Akhtar et al., 2022).

Experiencing elements specific to moral injury may also make it difficult to have the necessary support in order to cope with the distress and the symptoms resulting from the secondary exposure (Litz et al., 2009). For moral injury we are talking about experiences that, at their base, have a moral conflict regarding actions predominantly made by individuals, emotions such as shame and guilt, and cognitions regarding the good nature of a person, which have a high chance of reducing the search for support, which could come with judgement, and in some cases, even the unavailability of support (Litz et al., 2009). Furthermore, there are some cases in which there is the issue of contagion, because most of the times moral dilemmas are shared by many professionals, so we are talking about a collective distress (Rushton, 2017). In this case, a source of support should be the organization in itself, but the moral conflict usually comes as a result of the differences between the professional and the organization (Dean et al., 2019). Even in the case of burnout, the absence of a uniformity regarding the values of the individual and the organization may be a factor that maintains the presence of this phenomena, and may hinder the support system of an individual, which was shown to be one of the most important elements in the persistence of burnout (Maslach & Leiter, 2016). Thus, the absence of support may make it difficult for the individuals to ameliorate their STS symptomatology, the psychological impact that comes from experiencing events that generate dissonance and moral conflicts (Litz et al., 2009) and to cope with the stress that comes from the workplace and mitigate the level of burnout (Maslach & Leiter, 2016). Their symptoms will become more chronic and it will be more difficult for them to adapt to their workplace climate and to be resilient.

In contrast, if the intensity of the symptoms remains at a low or moderate level, there is a higher change that the individuals will see the event as being specific to an isolated context, to understand their role, the fact that they did not have control over some actions and to see these experiences as being transient (Litz et al., 2009). It is also possible they will feel that they have the means to cope in an efficient way to the job demands, and find opportunities for satisfaction in their work, which comes with a higher chance for them to regain the same functionality as before the event (Maslach & Leiter, 2016).

Limitations

Our study has a few limitations. The first one is regarding the number of the participants, which is consistent, but not enough to generalize our results. Also, regarding the gender of the participants, it would be more beneficial to

have a more equal distribution. The second limit comes from the application of the measures. Applying the instruments directly in the hospital, it would have given us more control over ensuring the correct and uninterrupted completion. The third limit comes from the measures. A longer format could have offered us more insight into the relationship between STS and resilience, and which aspects of resilience are closely related to the level of traumatic stress. The fourth limit is that all of our measures were self-reports, which may lead to some bias in the responses offered by the participants. The last limit comes from the fact that this a cross-sectional study. Taking into account the fact that there are different trajectories that an individual could follow in time as resulting to exposure to trauma and that some of the phenomena presented take time to manifest, it will be more accurate to follow the evolution in time of the individuals' symptoms and how all of these aspects interact.

Theoretical and practical implications

The fact that between STS and resilience is a negative association in the case of healthcare professionals and that burnout and moral injury partially mediate this relationship could offer some directions both theoretical, regarding the factors that help and individual bounce back after a trauma, which could bring new perspectives and directions that could be followed, and practical, regarding the steps that organizations could take to prevent the negative consequences of working in an environment that is demanding both emotionally and physically and to build resilience. Support groups and debriefing sessions should be a priority, especially because moral dilemmas tend to be contagious, and also professionals are sometimes reluctant to seek help as it is perceived as being stigmatized (Hancock et al., 2020; Rushton, 2017). Moreover, social support has the potential to help them cope with their experiences, modify the negative thoughts about self and others and understand that the control they have over these experiences is usually much lower than they think (Maslach & Leiter, 2016). Other solutions should include education about these phenomena, their risk factors, manifestations and solutions. This will help healthcare professionals recognize the first signs, conclude that their thoughts and emotions are understandable but maladaptive and to intervene early. Finally, it is important to provide role models, to encourage the relationships between employees, supervisors and management and to assure that there are enough resources, the number of employees can cover the demands, and that the policies are tailored to suit the best interest of patients and medical workers (Hancock et al., 2020).

Conclusion

STS, moral injury and burnout are phenomena that can alter in a negative way the life of healthcare professionals, as well as their interactions with their

patients. Experiencing symptoms specific to all of these phenomena might possibly make the difference between experiencing STS or not and even experiencing STS but still maintaining a level of resilience or not. Therefore, it is important to further study the relationship between these variables, to demarcate them and to investigate the association with resilience. Regarding organizations, they need to provide the necessary training and resources to promote resilience and the early intervention, but also to have programs designed to help the staff that already experience symptoms at higher levels.

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