The Moderator Role of Passion for Work in the Association Between Work Stressors and Secondary Traumatic Stress: A Cross-Level Diary Study among Health Professionals of Intensive Care Units

Background: Secondary traumatic stress (STS), a construct formed by compassion fatigue, shattered assumptions, and symptomatology, has been scarcely studied in intensive care units (ICU). In these units, health-care workers encounter daily work stressors which impact on their health and well-being. Also, previous literature revealed a passion for caring among these workers, finding two types: harmonious passion, which may protect them against negative outcomes, and obsessive passion, which may boost negative consequences. We aim to study whether both types of passion could moderate the relationships between daily work stressors and STS.

Methods: 265 assessments were collected at ICUs from different hospitals in Spain through a diary approach (53 health workers x 5 days in two moments per day).

Results: Firstly, daily work stressors were positive predictors of symptomatology; secondly, dispositional harmonious passion was a negative predictor of both compassion fatigue and shattered assumptions, also presenting a buffering effect between daily work stressors and daily shattered assumptions. Finally, dispositional obsessive passion showed positive relationships with both shattered assumptions and symptomatology, also presenting a boosting effect between daily work stressors and daily symptomatology.

Conclusions: This study allows to deepen our understanding of STS in ICUs and boosting preventive proposals. Practical implications are discussed.

Keywords: secondary traumatic stress; passion for work; work stressors; intensive care unit; diary study.

The Moderator Role of Passion for Work in the Association Between Work Stressors and Secondary Traumatic Stress: A Cross-level Diary Study among Health Professionals of Intensive Care Units

Health professionals who work in an intensive care unit (ICU) are known to be at high risk of developing work psychosocial risks such as burnout (Filho, Rodrigues, & Cimiotti, 2019) and secondary traumatic stress (STS) (Jakimowicz, Perry, & Lewis, 2018). Specifically, van Mol, Kompanje, Benoit, Bakker, and Nijkamp (2015) argued that the prevalence of STS among health professionals in ICUs ranged from 17% to 38.5%. This psychosocial risk has not only has been considered as having a great impact on professionals' health, well-being and quality of life (Blanco-Donoso et al., 2018), but also as posing a high risk for patients and relatives in terms of care quality of service (Jakimowicz, Perry & Lewis, 2018).

ICUs are highly emotionally demanding contexts in which health professionals encounter several daily work stressors. Specifically, the daily exposure to patients' cycles of suffering - until death in many cases – as well as ethical decision-making, and miscommunication, among others, may cause more stress in these particular health professionals than in others (Salimi, Pakpour, Rahmani, Wilson, & Feizollahzadeh, 2019). Moreover, ICUs are characterized by self-defining traumatic tasks in which professionals may engage during their work hours (Filho et al., 2019), and at the same time, these professionals may deal with time constraints and social pressure while performing those tasks (Mason et al., 2014), linked with a high workload related to the critical caring task (van Mol et al., 2015). These work stressors are considered as relevant in the consequences of working in ICU (Laurent et al., 2020). In contrast, there are few studies interested in taken a deeper dive into difficulties that health professionals may encounter on the day-level, despite its undeniable relevance (Yoder, 2010). Therefore, the present study aims to particularly consider these specific work stressors in ICUs on a

daily basis (i.e. workload, time and social pressure, and traumatic tasks) and how this may increase the likelihood of suffering from STS (Ratrout & Hamdan-Mansour, 2019).

It is undoubtedly important to study work stressors on the day-level due to their changing nature depending on each shift, and their theoretical link to daily stress levels (Santiago et al., 2017). It is not only the stressors that could be assessed on the day-level but also the outcomes. Current trends in positive organizations support the idea of daily outcomes that may fluctuate within-person and across time (Bakker & Albrecht, 2018). Specifically, Bakker and Albrecht (2018) revealed that these daily outcomes at work might vary as a function of daily demands (e.g. challenging episodes of work demands may predict their specific levels of engagement). However, further research is needed focused on day-level negative outcomes. In this regard, a diary approach is defined as a "method to collect data at the daily level or even several times a day" (Ohly, Sonnentag, Niessen, & Zapf, 2010, p. 79). Therefore, the use of a diary approach allows us to study work stressors and STS not only from a between-person perspective, as previous studies have done, but also within-person fluctuations, capturing the short-term variations within-individuals in work contexts. Thus, this could make valuable contributions to the field, specifically in ICUs given the lack of studies on this issue (van Mol et al., 2015).

On the other hand, health professionals have been considered to possess a passion for caring and dedication, which translates into a passion for work and which has been studied as a modulator effect for negative outcomes (Gómez-Salgado, Navarro-Abal, López-López, Romero-Martín, & Climent-Rodríguez, 2019). Thus, our main goal is to examine the effect of daily work stressors in ICU professionals on STS and the moderator effect that passion for work has in such a relationship.

Secondary Traumatic Stress

STS has been defined as the post-traumatic stress from which professionals dedicated to help and care may suffer due to the indirect impact of trauma on them (Figley, 1999). The literature supports the idea that longer and higher work stressors increase the likelihood of suffering from STS for care professionals (Meadors & Lamson, 2008). Its relevance lies in the adverse effects that STS may have on physical and mental health (Lee, Gottfried, & Bried, 2018), with the most profound impact being on job performance (Partlak Günüşen, Üstün, Serçekuş Ak, & Büyükkaya Besen, 2019). Following the model of Moreno-Jiménez, Morante, Rodríguez-Carvajal, and Rodríguez Muñoz (2008), we specifically considered three differentiated dimensions (i.e. compassion fatigue, shattered assumptions, and symptomatology) which form part of STS and which possess their own meaning and contribution. These authors pointed out the need to gather the phenomenological experience of STS attending to its emotional, cognitive, and stress-related symptoms.

Firstly, we found compassion fatigue to be the emotional part of STS. Compassion fatigue was introduced as an explanation for nurses' burnout (Steinheiser, 2018) and is defined as a state of emotional exhaustion resulting from continued exposure to compassion stress (Jakimowicz et al., 2018); it may also result from the combination of trauma outcomes and the duty of empathetic caring (Mason et al., 2014), which is remarkably prevalent in intensive care settings (Peters, 2018). Moreover, daily work stressors in health professions have been established as a trigger for compassion fatigue in nurses (Yoder, 2010); therefore, the diary approach for deepening our understanding of the direct influence of daily work stressors on daily levels of compassion fatigue is supported. Concerning the sociodemographic data, current studies revealed a non-significant relationship with age (Kellogg, Knight, Dowling & Crawford, 2018), but a significant relationship with the years of work experience, finding that those professionals

with more work experience reported lower compassion fatigue in comparison with those who were less experienced (Mason et al., 2014). On the other hand, regarding the work shift, we found that the length of the shift is not as relevant in comparison with the length of recovery, with the lowest levels of compassion fatigue being among those nurses with longer shifts but more days off (Yoder, 2010).

Secondly, shattered assumptions represent the cognitive part of STS. This component refers to the way that continuous exposure to traumatic events may shatter a person's assumptions, beliefs or values about themselves and the world (Janoff-Bulman, 1992). Joseph (2018) hypothesized that people need to see the world as benevolent and meaningful, and the self as worthy to maintain good mental health. Moreover, continued exposure to traumatic episodes may threaten the self-protection against these factors (e.g. "bad things can happen to good people"; Reknes et al., 2014). In the ICU context, the work stressors refer not only to workload and time pressure, but also to aspects related to the traumatic tasks (e.g. suffering and pain cycle of young patients), so in turn, these cumulated daily ICU-related stressors may have an effect on professionals' assumptions (e.g. something similar could happen to me or my relatives). Indeed, previous diary approaches focused on work revealed that personal beliefs and perceptions about a work-related task may vary on the day-level (e.g. self-efficacy; Bakker & Albrecht 2018). Accordingly, daily work stressors in the ICU (i.e. traumatic tasks) may have an impact on these perceptions within individuals and across time (e.g. this world is unfair). Thus, a daily approach allows us to deepen in shattered assumptions variability on a day-to-day basis and which variables may play a key role in preventing this. Concerning the sociodemographic data, previous findings pointed out differences in gender, being the shattered assumptions higher in females (Rodríguez-Muñoz, Moreno-Jiménez, Sanz-Vergel & Garrosa Hernández, 2010).

Lastly, symptomatology includes all symptoms related to post-traumatic stress disorder (PTSD; Lee et al., 2018), specifically divided into three groups: intrusion, avoidance and arousal. Intrusion means being disturbed by images, thoughts or memories related to the trauma object. Avoidance is related to all behaviors that aim to escape suffering and the trauma object. On the other hand, arousal is related to the excess of energy caused by the anxiety response displayed towards the trauma object. Additionally, Shipherd, Clum, Suvak, and Resick (2014) suggest that a reduction in symptomatology may diminish the individual consequences of STS, in which we encounter a high prevalence of cardiovascular and hypertension disease (Thordardottir et al., 2015). It seems that stress-related symptomatology could be more sensitive to daily cumulative experience (Santiago et al., 2017), meaning that a diary approach may increase our knowledge about the impact of daily work stressors on daily symptomatology to prevent future health diseases. Furthermore, the latest studies on the topic highlight higher rates of symptomatology in females than in males (Zerach & Salomon, 2018), implying that gender might be considered for a better understanding of this dimension.

Passion for Work

Passion for work has been defined as a strong inclination toward work that an individual loves and in which an individual decides to invest a significant amount of time and effort (Forest, Mageau, Sarrazin, & Morin, 2011). Moreover, the definition of being passionate toward work includes a self-defining concept, in that it forms part of one's identity (Vallerand et al., 2003) and receives special attention in a health context (Donahue et al., 2012). Hence, the interesting part of the passion for work is the dualistic model involved, in which we found two types of passion.

On the one hand, harmonious passion derives from a self-determined internalization of the work in one's identity (Vallerand et al., 2003), such that one freely decides to invest

resources and to be totally engaged with one's work, maintaining a harmony between this work and his/her life. The work, in this case, occupies a significant but not excessive space in one's life so that there is a lack of conflict with other life activities (Yukhymenko-Lescroart & Sharma, 2019). On the other hand, obsessive passion is an externally controlled internalization in which one decides to invest resources due to an internal pressure to continue working (Vallerand et al., 2003). The highlighting point of this passion is the overwhelming space that work occupies in one's life, and moreover, the crucial conflict existing between work and other life areas (Yukhymenko-Lescroart & Sharma, 2019).

The difference between both types of passion not only lies in their definitions but also the practical implications involved. Specifically, harmonious passion has been related to positive outcomes, such as well-being, organizational commitment, engagement (Birkeland & Buch, 2014), positive affect and even recovery experiences after work (Donahue et al., 2012). In contrast, obsessive passion has been related to negative outcomes, such as burnout (Donahue et al., 2012), rumination, role conflict and especially work/family conflict (Caudroit, Boiché, Stephan, Le Scanff, & Trouilloud, 2011).

Little is known specifically about passion for work in health care professionals and its impact on developing STS, although it has been widely studied in the field of burnout (Birkeland & Buch, 2014). Literature about care professionals revealed that pleasure in one's work may prevent compassion fatigue and burnout (Yoder, 2010). Thus, it has been considered an important factor that may prevent or even reduce the risk of the appearance of STS similar to burnout prevention (Trépanier, Fernet, Austin, Forest, & Vallerand, 2014).

Due to the high specialization of ICU, we consider such professionals to have a strong passion for caring because they find the work of helping itself to be self-rewarding and

worthy (Partlak Günüşen et al., 2019). In addition to this, little is yet known about the stability of passion for work, but studies centered in contrast to this hypothesis maintain that passion is a stable variable over time (Lavigne, Forest, Fernet, & Crevier-Braud, 2014). Following these results, we consider passion for work as a dispositional variable with scarce variability over a week. Thus, our second goal is to explore the passion for work in the ICU health professionals and its effect on daily STS.

Furthermore, Lavigne and colleagues (2014) supported the idea that passion for work may change professionals' stressors perceptions, diminishing the feeling of being overwhelmed and evaluating the work setting as a positive and controlled one in the case of harmoniously passionate workers, whereas the perception of overload would be higher for their obsessively passionate peers. In this regard, Bakker and Sanz-Vergel (2013) pointed out that the health professionals' perception of their job demands (e.g. as a challenge or hindrance) has a direct effect on their well-being, and particularly, those demands perceived as hindrance are related to more emotional exhaustion. From a diary approach, it is not the first time that scholars have suggested how personal resources (e.g. optimism and self-efficacy) may buffer the relationship between work stressors and emotional exhaustion (Bakker & Demerouti, 2017), or boost the relationship between work stressors and well-being (Donoso, Demerouti, Garrosa, Moreno-Jiménez & Carmona-Cobo, 2015). However, little is known about how passion for work - as a personal resource - may influence the relationship between work stressors and negative consequences (Lavigne et al., 2014), although authors such as Dam, Perera, Jones, Haughy, and Gaeta (2019) established that passion, among others, may protect against work stressors in that field. Despite this, the lack of studies in this vein means that current studies need to strongly emphasized the need for examining the moderator role of this

passion for work (Pollack, Ho, O'Boyle & Kirkman, 2020). Therefore, we hypothesized that:

H_1. Daily work stressors will be significantly and positively related to (1a) daily compassion fatigue, (1b) daily shattered assumptions, and (1c) daily symptomatology at home.

H_2. Dispositional harmonious passion will be significantly and negatively related to (2a) daily compassion fatigue, (2b) daily shattered assumptions, and (2c) daily symptomatology at home.

H_3. Dispositional obsessive passion will be significantly and positively related to (3a) daily compassion fatigue, (3b) daily shattered assumptions, and (3c) daily symptomatology at home.

H_4. Dispositional harmonious passion will moderate the relationship between daily work stressors and (4a) daily compassion fatigue, (4b) daily shattered assumptions, and (4c) daily symptomatology at home. Thus, the relationship between daily work stressors and daily STS in its three dimensions is weaker when dispositional harmonious passion is high than when it is low (buffering effect).

H_5 Dispositional obsessive passion will moderate the relationship between daily work stressors and (5a) daily compassion fatigue, (5b) daily shattered assumptions, and (5c) daily symptomatology at home. Thus, the relationship between daily work stressors and daily STS in its three dimensions is stronger when dispositional obsessive passion is high than when it is low (boosting effect).

Figure 1 represents the proposed model we aimed to contrast.

(PLEASE, INSERT FIGURE 1 HERE)

Methods

Participants

This study was carried out with 53 ICU health professionals from two public hospitals in Spain. Participants were recruited through informative meetings. The response rate was 70.6%. Informed consent was obtained for each participant, and information about goals and data protection was given. The inclusion criterion was a minimum work experience of 2 months in ICU. This minimum time allows us to include the Medical Intern Residents (coded as physicians) who were rotating in these units, seemly affected by these daily work stressors but allowing a minimum time of exposure in ICU.

Our sample was composed of physicians (34%), nurses (54.7%), and nurse assistants (11.3%). They were 35.8% male and 64.2% female. Regarding shifts, the majority worked the morning shift (60.4%), the afternoon shift was 17% and 22.6% worked both shifts. Each shift consists of 7 working hours. The average age was 38.83 years, and years of work experience in the ICU was 9.18 years.

Procedure

For this study, general and diary protocols were created with the below-mentioned instruments so that every participant received a package with both paper-based questionnaires. We took into account the shift, changing the protocol in order to equalize the data collection. The assessment moments were the following.

The predictor variable, that is daily work stressors, was assessed immediately after work, and depending on the shift: a) the morning shift was assessed at noon, and b) the afternoon shift was assessed at night immediately after working. The reason was to collect data immediately after work to gather as much information as possible related to the interesting phenomenon (a work shift). Daily compassion fatigue, shattered assumptions and symptomatology at home were assessed after a period of recovery and depending on the shift, as well: a) for the morning shift, they were assessed before going to sleep, and b) for the afternoon shift, they were assessed the next morning after waking up. In this

case, the reason was to assess the prolonged effect of work stressors on the outcomes without overlapping with the work shift feelings. Furthermore, this time-lapse allows the participants to display their coping skills in some way related to their dispositional passion for work, which we are interested in studying. Additionally, to assess the predictor in a different temporal moment to the outcome guarantee the prevention of response tendencies and avoid common method biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Both dispositional harmonious and obsessive passions for work were assessed once at the beginning of the study with the general measures. Once the protocols were established, the next steps were as follows.

First of all, informative meetings were held in each hospital in order to inform participants about the study and the practical implications for the ICU. In each session, a package was given to each participant. Participants received clear instructions for completing the general questionnaire once and the diary protocol, suggesting the use of alarms as a reminder. They were informed to fill the diary protocol 5 consecutive working days within the same week, regardless of being weekday or weekend, as they are used to work on weekends so that these days could be treated in the analysis like another weekday (Ohly et al., 2010). This issue was followed due to the variety of professionals within the sample (e.g. physicians, nurses and nurse assistants), which involved different shift allocation. Previous studies in diary studies among health professionals support the use of 5 consecutive days as enough (Donoso et al., 2015). So, they were asked to start filling the protocol the day after that session, if that starting day would lead to accomplish 5 consecutive working days (weekdays or weekends). Secondly, we established a deadline (within 2 weeks) to which the general and diary protocols were personally collected from each participant to guarantee confidentiality. The whole study followed the ethical standards established by a research ethics committee (reference number CEI 71- 1276).

Measures

Firstly, we collected variables specifically in a general level from the original questionnaires. The general measures were the following:

Control variables: gender (coded as 0 = male and 1 = female) and years of work experience.

Dispositional passion for work. This measure was obtained through the Spanish adaptation of the Passion toward Work Scale (PTW; Serrano-Fernández, Boada-Grau, Gil-Ripoll, & Vigil-Colet, 2017). This is a 9-item scale that assessed harmonious passion (e.g., "my work reflects the qualities I like in me"), and obsessive passion (e.g. "my mood depends on doing my work well"). The response format ranged from 1, "*I totally disagree*" to 7, "*I totally agree*". The reliability of the scale is well established and specifically, in our study, we obtained a Cronbach's alpha of .86 and .75 for harmonious and obsessive passions, respectively.

Secondly, we obtained daily measures of the variables using modifications of the original items reworded for a daily administration scale ("today at work" for daily work stressors, and "today" for daily STS) and using the same response categories than the general variable (Nezlek, 2007). The daily variables were the following:

Control variable: time (coded as 1 = 0; 2 = 1; 3 = 2; 4 = 3, and 5 = 4).

Daily work stressors. This measure was obtained from the "antecedent" dimension of the Spanish validation of the Secondary Traumatic Stress Scale (STSS; Moreno-Jiménez et al., 2008) with a 5-item scale. We adapted two items to an adult intensive care context instead of an extra-hospital context for which they were originally formulated (e.g., "I find difficult to forget situations where the victim is a minor or an elderly person" for the extra-hospital context, for "I feel that the cases that somehow resemble my life affect me a lot" for an adult intensive care context) and we kept both. The response format

was a Likert-scale, ranging from 1 "*totally disagree*" to 4 "*totally agree*". We found in our study acceptable reliability indexes, finding a Cronbach's alpha for the daily measure of .64, ranging from .52 to .70 for the 5 days.

Daily secondary traumatic stress (STS). This measure was obtained from the STSS (Moreno-Jiménez et al., 2008) on a 14-item scale. However, the three dimensions were used separately, otherwise we could not distinguish among them. All of them present the same response format, ranging from 1 (*"totally disagree")* to 4 *("totally agree").* These variables were assessed as well from a general level using the original items and used as a "baseline" in the analysis. Specifically, the three dimensions are:

Daily compassion fatigue. This dimension was assessed on a 5-item scale (e.g., "I feel emotionally without strength"). The Cronbach's alphas were .81 for the general measure, and an average of .80 for the daily measure, ranging from .74 to .86 for the 5 days.

Daily shattered assumptions. This dimension was assessed on a 4-item scale (e.g. "My work makes me see the world as unfair"). The Cronbach's alphas were .61 for the general measure and an average of .59 for the daily measure, ranging from .47 to .77 for the 5 days.

Daily symptomatology. A 5-item scale was used for measuring symptomatology ("I even remember the name of some patients"). The Cronbach's alphas were .84 for the general measure, and an average of .83 for the daily measure, ranging from .78 to .88 for the 5 days.

Data Analysis

Multilevel analysis was done considering the hierarchical structure of our data (Nezlek, 2007). Hierarchical linear modeling was used in which two levels are included: level 1, day-level (N = 265 study occasions) nested in level 2, person-level (N = 53 participants). Due to the dependence between both levels of measure (within-person and between-

person), we use a cross-level design to test whether the person variable, as it dispositional passion for work, may have an effect on a day-level variable, that are the dimensions of STS (Aguinis, Gottfredson, & Culpepper, 2013). Thus, we considered separately daily compassion fatigue, shattered assumptions, and symptomatology as the outcomes; daily work stressors as our predictor; and dispositional passions for work as our moderators.

As suggested by Ohly, Sonnentag, Niessen, and Zapf (2010), predictor day-level variables (daily measures) were centered at the respective person's mean, whereas person-level variables (dispositional measures) were centered at the grand mean (Fish & To, 2012). Additionally, the cross-level interactions were built with the product between the variable in the day-level centered by person's mean (daily work stressors) and the variable in the person-level centered at the grand mean (dispositional passions for work) following Aguinis, Gottfredson and Culpepper (2013). Moreover, we added the "baseline" for dependent variables as controls in order to analyze daily fluctuations across health professionals taking as a baseline their general measure for this daily dependent variable (Ohly et al., 2010). This procedure allows us to remove all between-person variance in the day-level variables so that in this study, the general measure of the three dimensions of STS were taken as control variables. What is more, the sociodemographic data that showed significant correlations with the outcomes were added as control variables (i.e., gender and years of work experience). According to the literature, these sociodemographic data were covariates as well relevant in explaining the dimensions of STS, and previous findings suggest to control them (Ezenwaji et al., 2019). In addition, we included the variable "time" as a control variable following Ouweneel, LeBlanc, Schaufeli & van Wijhe (2012) procedure in order to avoid the possible accumulation effects on our day-level outcomes over the course of the five consecutive working days.

Data analysis was conducted using MLwiN 2.28 software (Leckie & Charlton, 2013). Finally, interactions were conducted, which allowed us to examine the effect of dispositional passions for work and daily work stressors on daily dimensions of STS at home. Simple slope tests were run, as suggested by Preacher, Curran, and Bauer (2006). Hence, our model was built as follows: model 1 included the control variables; model 2 included the predictor daily work stressors; model 3 included the moderators dispositional harmonious and obsessive passions, and model 4 included the cross-level interactions between the daily work stressors and the dispositional passions for work in predicting the outcomes.

Results

Preliminary analysis

Table 1 shows the means, standard deviations, Cronbach's alpha, the intraclass correlation, and all correlations between variables. We took a closer look at the intraclass correlation (ICC) to examine the total variance of the within-person level. As we observed, the total variable ICC was above 25% (Hox & Roberts, 2011), which means that an important part of the variance is due to the within-person variation across the 5 days, which supports the usage of multilevel analysis (Fisher & To, 2012).

Taking a closer look at sociodemographic variables, we determined that a) gender seems to be a negative and significant predictor for compassion fatigue, being higher for males (B = -.402, SE = .131, t = -2.956, 95 % CI [-.679, -.164], $p < .001$); and b) years of experience shows a positive and significant effect on daily shattered assumptions (B = .018, SE = .007, t = 2.571, 95 % CI [.004, .031], $p < .001$). In addition, time, referred to each day assessed (in total 5) had a direct, negative and significant effect on daily symptomatology at home (B = -.039, SE = .017, t = -2.294, 95 % CI [-.072, -.005], $p <$ .05).

(PLEASE, INSERT TABLE 1 HERE)

Hypothesis testing

The results of our multilevel analysis of hypotheses are presented in Tables 2, 3 and 4. Regarding Hypothesis 1, results support Hypothesis 1c (B = 1.156, SE = .351, t = 3.293, 95 % CI [.464, 1.847], $p < .001$), that is to say, daily symptomatology at home was the only dimension positively and significantly predicted by daily work stressors (see Table 4). In contrast, Hypotheses 1a and 1b did not find statistical support (B = .152, SE = .082, t = 1.854, 95 % CI [-.009, .313], $p < .05$ and B = .242, SE = .347, t = .697, 95 % CI [-.441, .925], $p < .05$, respectively).

Regarding Hypothesis 2, results supported Hypotheses 2a and 2b, hence dispositional harmonious passion appeared to be a significant and negative predictor for daily compassion fatigue (Table 2) and daily shattered assumptions (Table 3) at home (B = -.085, SE = .034, t = -2.5, 95 % CI [-.152, -.018], $p < .001$ and B = -.087, SE = .036, t = -2.416, 95 % CI [-.157, -.016], $p < .001$, respectively). Looking at Hypothesis 3, 3b and 3c were corroborated (Tables 3 and 4), henceforth dispositional obsessive passion appeared to be a positive and significant predictor for daily shattered assumptions and symptomatology at home (B = .106, SE = .047, t = 2.255, 95 % CI [.013, .198], $p < .001$ and B = .852, SE = .193, t = 4,414, 95 % CI [.472, 1.232], $p < .001$, respectively).

(INSERT TABLES 2, 3 AND 4 HERE)

Interaction effects

Daily compassion fatigue at home. As we can observe in Table 2, the inclusion of interaction effects in model 4 had a non-significant effect; thus, we keep model 3 with the principal effect of dispositional harmonious passion over daily compassion fatigue at home.

Daily shattered assumptions at home. Observing Table 3, the inclusion of two interaction terms showed a fit improvement in comparison with model 3 (*difference of -2 x log* = 8.146, *df* = 2; $p < .001$), with a significant and negative interaction effect being found between daily work stressors and dispositional harmonious passion (B = -.219, SE = .080, t = -2.737, 95 % CI [-.376, -.061], $p < .001$). These results support Hypothesis 4b (see Figure 2). The simple slope test showed that daily work stressors were significant and positively related to daily shattered assumptions at home among professionals with low dispositional harmonious passion (γ = .772, SE = .334, z = 2.311, 95 % CI [.114, 1.429], $p < .05$), whereas it is not significant and positively related among those with high dispositional harmonious passion (γ = -.080, SE = .584, z = -1.369, 95 % CI [-1.230, 1.070], $p > .05$).

(PLEASE, INSERT FIGURE 2 HERE)

Daily symptomatology at home. As mentioned before, we can see in Table 4 a positive and significant effect of daily work stressors and dispositional obsessive passion on daily symptomatology at home. Moreover, the inclusion of interaction terms in model 4 improved fit (*difference of -2 X log* = 18.205; *df* = 2; $p < .001$), with the result that a significant and negative interaction effect between daily work stressors and dispositional obsessive passion was found (B = -.293, SE = .069, t = -4.246, 95 % CI [-.428, -.157], $p < .001$). The simple slope test showed a positive and significant relationship between daily work stressors and symptomatology in either low or high dispositional obsessive passion (see Figure 3), finding both to be significant and boosting daily symptomatology at home (γ = 1.449, SE = .384, z = 3.779, 95 % CI [.692, 2.205], $p < .001$ *and* γ = .863, SE = .327, z = 2.638, 95 % CI [.219, 1.506], $p < .01$).

(PLEASE, INSERT FIGURE 3 HERE)

Discussion

This study strongly provides valuable contributions to the previous literature in several ways: Firstly, we surpassed the cross-sectional designs implemented in ICUs by providing empirical findings about the relationships of daily work stressors and its effect on daily STS. Secondly, we provide findings related to the functioning of STS dimensions separately, to contribute to the field trauma studies, as well. Thirdly, we test how passion for work may influence the perceptions of these work stressors, whether it is more or less related to STS development, and lastly, we responded to the lack of studies in the ICU context by highlighting the importance of caring for those health professionals who care for us. This study calls for future research to establish preventative measures for the health professionals that undoubtedly may impact on both the health professionals' well-being and the quality of care (Salimi et al., 2019).

Firstly, according to previous literature, we found compassion fatigue to be an emotional exhaustion characterized by the empathic caring task of these professionals (Mason et al., 2014). However, we could not support Hypothesis 1a concerning daily work stressors as a significant predictor of daily compassion fatigue at home, as other authors had suggested (Meadors & Lamson, 2008; Yoder, 2010). This fact may be explained by the conception of compassion fatigue, which may be a long-term outcome in handling work stressors and traumatic tasks rather than the direct short-term exposure of daily work stressors, which in this case consisted of social and time pressures, traumatic tasks, and workload. Following Yoder's statement (2010), the length of recovery rather than long shifts may have a great impact on increasing compassion fatigue. According to this, protracted exposure to daily work stressors may not have a significant effect in comparison with the time of recovery, which may be predicted from a high dispositional harmonious passion (Donahue et al., 2012). This idea is supported by our data, in which we found a significant and negative relationship between dispositional harmonious

passion and daily compassion fatigue at home, thus supporting Hypothesis 2a. From this point of view, harmonious passion will predict higher recovery, which may prevent burnout development, in this case, from compassion fatigue, which is considered in the literature as a specific burnout cause in nurses (Steinheiser, 2018). Additionally, gender shows a direct and significant effect on this dimension, being higher in males than in females. This fact, contrary to what has been established (Zerach & Salomon, 2018), may be explained by the differential skills displayed in these highly emotionally demanding situations with which females (mostly nurses) may be more used to dealing, whereas males (mostly physicians) are less used to dealing with such emotional events. Gender roles may explain why in males a higher level of compassion fatigue is easier to relate to a lack of expertise in such emotional settings (Eagly & Wood, 2016).

Secondly, regarding shattered assumptions, we found interesting results. First of all, we found a similar non-significant effect of daily work stressors predicting daily shattered assumptions, as other authors have supported (Joseph, 2018). These findings suggest that shattered assumptions may be better explained by the long exposure to traumatic events that impact professionals' ways of seeing the world (Reknes et al., 2014), rather than the impact of dealing with work stressors. Moreover, we found a significant and negative relationship between dispositional harmonious passion and daily shattered assumptions at home, which strongly underlines the idea of dispositional harmonious passion as a strong protector against compassion fatigue and shattered assumptions, thus confirming Hypothesis 2b. Specifically, the characteristics involved in such passion (e.g. high recovery, less work/family conflict, less rumination; Vallerand et al., 2010), may generate less impact on professionals' perceptions of themselves and the world (Reknes et al., 2014), thereby diminishing the risk of shattering their beliefs. Furthermore, not only might the specific behaviors associated with harmonious passion mentioned before play

a protector role, but the beliefs and thoughts associated with the positive balance between work and life may be significant, as well. The harmoniously passionate worker may develop more coping skills to prevent their assumptions from shattering, even on a cognitive level (e.g. fewer thoughts focused on the traumatic event; Donahue et al., 2012). In contrast, we found a positive and significant effect for years of work experience, which may reflect that in the long term, the continuous exposure to ICU work stressors may generate even more shattered assumptions in comparison with those who have less work experience, contrary to other findings (Yoder, 2010). Another possible explanation, as supported by Foster, Sloto & Ruby (2006) could be the greater mismatch between professionals' beliefs and traumatic events they witness conforming time goes working in the ICU. Moreover, dispositional obsessive passion for work was a positive and significant predictor of shattered assumptions, which may be explained by its own associated processes such as rumination and more family/work conflict, which have been directly related to emotional exhaustion (Amarnani, Lajom, Restubog, & Capezio, 2019) and may affect professionals' increased likelihood of shattered assumptions.

Interestingly, both passions are positively related, which allows us to deepen our examination of such a concept and contribute to the existing literature (Pollack et al., 2020). In this regard, both passions seem to describe a similar feeling of love and enjoyment about their work, but possibly, the cognitive and behavioral aspects associated with each type of passion, as mentioned before, may distinguish them from having different consequences (Forest et al., 2011). This is not the first time that scholars have considered both passions to have a common concept of positive feeling toward work, considered as the general passion (Pollack et al., 2020) and then, an internalization component of that work in one's identity. This point suggests that this internalization boosts certain work-related attitudes, affects, and behaviors regarding passionate work

that may determine the type of passion (i.e. harmonious or obsessive) and the associated positive or negative consequences (Pollack et al., 2020).

Moreover, and with regard to the interaction effect, we confirmed Hypothesis 4b. As shown in Figure 2, there is an increase in daily shattered assumptions at home when daily work stressors are higher, which supports Joseph's argument (2018), but this relationship is strongly moderated by dispositional harmonious passion, with more shattered assumptions being found among those with low harmonious passion. In other words, the impact of daily work stressors in ICUs is greater among those professionals with low dispositional harmonious passion compared to those with high dispositional harmonious passion, as they experience a large increase in shattered assumptions. This fact supports Lavigne and colleagues' (2014) theory, in which harmonious passion may change the perception of work stressors, as the work setting is considered as a positive and purposeful context and thus diminishes the impact on professionals' health having a buffering effect (Peters, 2018).

Finally, regarding symptomatology and according to the STS literature, long exposure to daily work stressors in ICUs (e.g. time and social pressure, traumatic tasks, work overload) have been demonstrated to have a significant impact on professionals' daily lives and specifically increases their daily symptomatology at home (Thordardottir et al., 2015). This fact suggests that high daily work stressors in ICUs may directly generate immediate consequences as an acute stress response, which is related more to daily symptomatology but not strongly related to the emotional and cognitive consequences of STS. Thus, we confirmed Hypothesis 1c. On the other hand, obsessive passion seems to have a direct and positive relationship with symptomatology, resulting in it being a risk factor (Amarnani et al., 2019). Following the scientific literature, obsessive passion has been demonstrated to be related to negative outcomes, such as work/family conflict,

rumination, less job satisfaction, and less recovery (Trépanier et al., 2014), which may be related to more symptomatology due to difficulties in disengaging from work, and increased time of exposure to daily work stressors. Furthermore, time had a significant and negative effect on symptomatology: thus, we could consider that the use of a daily approach allowed us to improve our knowledge about professionals' well-being, who were in a worse state during the first days of the week in comparison with the final days. This fact may be explained by the effect of days off (Yoder, 2010) and returning to work, which may intensify more feelings of symptomatology.

Furthermore, interaction findings in this dimension provided interesting results. We found an increase in daily symptomatology at home when we passed from low daily work stressors to high daily work stressors, and this relationship is strongly moderated by dispositional obsessive passion, having a boosting effect, with a significant increase being found in those professionals with either low or high obsessive passion. In other words, even small levels of obsessive passion may be related to higher levels of daily symptomatology when daily work stressors are higher. These findings support Amarnani and colleagues' (2019) argument that established obsessive passionate workers are less able to recover their loss of resources due to their intense focus on work. In contrast, we do not find a diminishment in daily symptomatology in those with low obsessive passion, which may support new findings on the topic in which being fully engaged and passionate toward one's work should be positive, regardless of the type of passion (Yukhymenko-Lescroart et al., 2019).

All in all, more research is needed in ICU health professionals regarding their passion for work and its power with respect to developing STS. Our findings suggest that daily work stressors only impact on the symptomatology dimension of STS due to daily, continued exposure. However, regarding the development of compassion fatigue and

shattered assumptions, we found a remarkable effect for passion and an outstanding moderator effect for daily work stressors.

Limitations and Future Research

Regarding our limitations, there are important issues that should be taken into account. Firstly, we used self-report measures in order to assess the interested variables, but an objective assessment of work stressors should be made. Furthermore, we obtained low reliability on some scales, which may be explained by the reformulation of some items to adapt them to a health care context, as occurred with work stressors. On the other hand, shattered assumption was the dimension with lower reliability, assessed with the original items of extra-hospital context, which could encounter subtle differences with the ICU context. This fact points to the need for further research to develop, in the first place, specific assessment tools for ICU health professionals.

Concerning the sample size, the voluntary nature of the study and the compulsory format of filling in a diary for 5 days twice per day made completing the study package more difficult. This fact places emphasis on the importance of obtaining this specific sample of ICU professionals despite its small size, and getting all measures together allows us to run multilevel models (Ohly et al., 2010). Regarding the design of our diary study, the limited control in the assessment days and the absence of the proper reminders (although it was suggested) might have an impact on the results (e.g. whether they forget to fill in the protocol one day). We could prevent this issue by, for instance, establishing daily reminders.

Finally, the need to attend to all shifts to allow them to be reflected in the results threatens the completion of the study. In that regard, we obtained data from morning and afternoon shifts, and we created different diary packages to control this potential threat, taking into account when they left work and when enough recovery time from work had

passed. This action allows us to study in-depth the similarities of each shift. However, we could not establish the specificities of each shift, especially considering the timing and night shifts. Future research should consider this to better understand its effects on the STS.

Undoubtedly, more research needs to focus on the emotional processes of harmonious and obsessive passions (Amarnani et al., 2019) and how they interact in ICU settings. For this reason, we should pay more attention to important variables involved in such settings, such as empathy, work-family conflict, and emotional effort in order to continue improving our knowledge about STS in these specific contexts.

Practical implications

As we mentioned before, several practical implications should be addressed in order to establish preventative measures. Firstly, we suggest placing an emphasis on diminishing daily work stressors, in line with what other authors have suggested (Lavigne et al., 2014). Secondly, working from a harmonious passion profile should be undeniably applied and has been demonstrated to be beneficial both for work settings and workers, who gain work-family balance and enhance their recovery experiences (Pollack et al., 2020). The rise in harmonious passion may be the result of a decrease in daily work stressors, as previous findings suggest that this type of passion changes even the perception of stressors (Lavigne et al., 2014). The job-crafting technique has been proposed as useful in decreasing daily stressful experiences at work and enhancing personal resources, using a focus group of health professionals to establish which measures should be taken into consideration. These kinds of interventions arise as relevant especially in this crisis time with COVID-19, in which health professionals are the most affected by – among other issues - a high workload and a lack of sanitary material, directly impacting their well-being.

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Table 1

Means, Standard Deviations, Intraclass Correlations, Cronbach´s Alphas and Correlations Among Variables

Variables	M	SD	ICC	α	1	2	3	4	5	6	7	8	9
1. General CP[a]	1.77	.54		.69	1	.49**	.19**	-.12	.04	-.12	.40**	.31**	.02
2. General SA[a]	2.33	.66		.73		1	.56**	.13	.19**	.23**	.23**	.59**	.39**
3. General S[a]	2.64	.72		.86			1	.19**	.19**	.38**	.03	.27**	.65**
4. Dispositional HP[a]	4.65	1.48		.86				1	.41**	.06	-.35**	-.07	19**
5. Dispositional OP[a]	2.89	1.33		.75					1	.13**	-.05	.15*	.08
6. WS at work[b]	2.81	.54	.331	.65						1	-.09	.24**	.48**
7. CP at home[b]	1.84	.65	.462	.81							1	.32	.02
8. SA at home[b]	2.13	.63	.371	.61								1	.37**
9. S at home[b]	2.60	.76	.256	.84									1

Note: CF = Compassion Fatigue; SA = Shattered Assumptions; S =Symptomatology; HP = Harmonious Passion; OP = Obsessive Passion; WS= Work Stressors
[a] Person- level variables; [b] Day-level variables
**ICC = intraclass correlation*
**p < .05. **p < .01*

Table 2

*Multilevel Estimates for Models Predicting Compassion Fatigue at Home (N = 53 *5 Days = 265 Statistical Observations)*

Variables	Null Model			Model 1			Model 2			Model 3			Model 4		
	Estimate	SE	*t*	Estimate	SE	*t*	Estimate	SE	*t*	Estimate	SE	*t*	Estimate	SE	*t*
Intercept	1.887	.089	21.202***	1.194	.231	5.169***	.852	.318	2.679***	1.286	.343	3.749***	2.790	.974	2.864***
Gender				-.372	.135	-2.755***	-.431	.140	-3.075***	-.402	.136	-2.956***	-.422	.131	-3.221***
Years of work experience				.013	.006	2.167*	.009	.006	1.5	.006	.007	.857	.003	.007	.428
Time				.026	.021	1.238	.027	.021	1.286	.026	.021	1.238	.028	.021	1.333
General CF[a]				.370	.124	2.983***	.357	.125	2.856***	.347	.116	2.991***	.397	.114	3.482***
WS at work[b]							.365	.124	2.943***	.152	.082	1.854	-.394	.334	-1.179
Dispositional HP[a]										-.085	.034	-2.5***	-.534	.199	-2.683***
Dispositional OP[a]										-.029	.045	.644	.163	.245	.665
WS at work X Dispositional HP													.153	.067	2.283*
WS at work X Dispositional OP													-.063	.086	-.733
-2 X Log(lh)	377.429			349.709			345.233			333.012			328.123		
Difference of -2 X Log				27.72***			4.476			12.221***			4.889		
df				4			1			2			2		
Level 1 intercept variance (SE)	.215(.022)			.203(.021)			.205(.021)			.201(.021)			.201(.021)		
Level 2 intercept variance (SE)	.250(.068)			.147(.043)			.149(.043)			.124(.037)			.104(.033)		

Note: CF = Compassion Fatigue; WS = Work Stressors; HP = Harmonious Passion; OP = Obsessive Passion
Gender is coded as 0 = male,1 = female; time is coded as 1 = 0; 2 = 1; 3 = 2; 4 = 3; 5 = 4
[a] Person- level variables; [b] Day-level variables
**p < .05. **p < .01 ***p < .001*

Table 3

*Multilevel Estimates for Models Predicting Shattered Assumptions at Home (N = 53 *5 Days = 265 Statistical Observations)*

Variables	Null Model			Model 1			Model 2			Model 3			Model 4		
	Estimate	SE	*t*	Estimate	SE	*t*	Estimate	SE	*t*	Estimate	SE	*t*	Estimate	SE	*t*
Intercept	2.138	.083	25.759***	.718	.199	3.608***	.781	.203	3.847***	.842	.240	3.518***	.792	.235	3.370***
Gender				.047	.105	.447	.042	.104	.404	.091	.103	.883	.082	.102	.804
Years of work experience				.013	.006	2.167*	.012	.006	2*	.012	.006	2*	.018	.007	2.571**
Time				-.024	.019	-1.263	-.022	.019	-1.157	-.021	.020	-1.05	-.020	.019	-1.052
General SA[a]				.610	.081	7.530***	.579	.082	7.060***	.573	.080	7.162***	.629	.081	7.765***
WS at work[b]							.068	.079	.861	.055	.079	.696	.242	.347	.697
Dispositional HP[a]										-.071	.036	-1.972*	-.087	.036	-2.416**
Dispositional OP[a]										.105	.048	2.187*	.106	.047	2.255*
WS at work X Dispositional HP													-.219	.080	-2.737***
WS at work X Dispositional OP													.087	.062	1.403
-2 X Log(lh)		303.116			268.320			263.829			255.654			247.508	
Difference of -2 X Log					34.796***			4.491			8.175***			8.146***	
df					4			1			2			2	
Level 1 intercept variance (SE)		.154(.017)			.156(.017)			.156(.017)			.159(.017)			.153(.017)	
Level 2 intercept variance (SE)		.262(.063)			.089(.026)			.083(.025)			.070(.023)			.066(.021)	

Note: SA = Shattered Assumptions; WS = Work Stressors; *HP = Harmonious Passion; OP = Obsessive Passion*
Gender is coded as 0 = male, 1 = female; time is coded as 1 = 0; 2 = 1; 3 = 2; 4 = 3; 5 = 4
[a] Person- level variables; [b] Day-level variables
**p < .05. **p < .01 ***p < .001*

Table 4

*Multilevel Estimates for Models Predicting Symptomatology at Home (N = 53 *5 days = 265 Statistical Observations)*

Variables	Null Model			Model 1			Model 2			Model 3			Model 4		
	Estimate	SE	*t*	Estimate	SE	*t*	Estimate	SE	*t*	Estimate	SE	*t*	Estimate	SE	*t*
Intercept	2.628	.106	24.792***	.821	.259	3.167***	.098	.289	.339	-.097	.357	-.272	-2.455	1.00	-.272
Gender				.197	.143	1.377	.114	.133	.857	.139	.146	.952	.159	.138	1.152
Years of work experience				-.011	.007	-1.571	-.012	.007	-1.714	-.009	.008	-1.125	-.001	.008	-.125
Time				-.044	.018	-2.445**	-.040	.017	-2.353**	-.040	.017	-2.353**	-.039	.017	-2.294*
General S[a]				.694	.095	7.305***	.600	.089	6.752***	.572	.096	5.958***	.590	.092	6.413***
WS at work[b]							.349	.079	4.418***	.334	.083	4.024***	1.156	.351	3.293***
Dispositional HP[a]										.023	.046	.5	.057	.200	.285
Dispositional OP[a]										.074	.056	1.321	.852	.193	4.414***
WS at home X Dispositional HP													-.001	.067	.014
WS at work X Dispositional OP													-.293	.069	-4.246***
-2 X Log(lh)		347.023			295.322			275.506			270.956			252.751	
Difference of -2 X Log					51.701***			19.816***			4.55			18.205***	
df					4			1			2			2	
Level 1 intercept variance (SE)		.156(.016)			.143(.015)			.135(.014)			.133(.014)			.125(.013)	
Level 2 intercept variance (SE)		.453(.104)			.187(.046)			.153(.039)			.170(.043)			.144(.037)	

Note: S = Symptomatology; WS = Work Stressors; HP = Harmonious Passion; OP = Obsessive Passion
Gender is coded as 0= male,1= female; time is coded as 1 = 0; 2 = 1; 3 = 2; 4 = 3; 5 = 4
[a] Person- level variables; [b] Day-level variables
**p < .05. **p < .01 ***p < .001*