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The Relation between Personality Traits, Social Support and Traumatic Stress

Marius Ciprian CEOBANU¹, Cornelia MAIREAN²

Abstract

This study examines the relationship between the Big Five personality traits, social support and traumatic stress symptoms in the context of secondary exposure to traumatic life events. Moreover, we examine if emotional and informational social support moderate the relation between personality traits and all the three dimensions of traumatic stress – intrusions, avoidance, and arousal. A sample of 162 nurses and physicians participated in this study and completed self-reports measuring neuroticism, extraversion, agreeability, openness, conscientiousness, social support, and symptoms of secondary traumatic stress. The results revealed positive associations between neuroticism and all the symptoms of traumatic stress, while extraversion, agreeability, openness, and conscientiousness negatively correlated with intrusions, avoidance, and arousal. Moreover, emotional and informational social support moderates the relation between extraversion, openness and traumatic stress symptoms. These findings are discussed from the perspective of the resilient value of personality traits and the importance of perceiving support in promoting emotional adjustment, for persons indirectly exposed to traumatic events.

Keywords: traumatic stress, resilience, medical staff, social support, coping.

Introduction

The development of posttraumatic stress disorder is a common risk for persons exposed to different stressful or traumatic life events (Morina, Wicherts, Lobbrrecht, & Priebe, 2014). Repeated professional exposure to traumatic events, such as confrontation with severe injuries, death, violence, pain and suffering, was also related to the development of posttraumatic stress symptoms and burnout (Adri-

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aenssens, De Gucht, & Maes, 2015; Bernaldo-De-Quiros, Piccini, Gomez, & Cerdeira, 2015). Although the research about the effects of stressful events mainly concentrates on primary victims, posttraumatic responses of intrusions, avoidance and arousal that might follow indirect traumatic exposure are also documented in various professional groups like: fire-fighters, mental health professionals, medical personnel, or social workers (Duffy, Avalos, & Dowling, 2014; Mealer & Jones, 2013). To describe these responses, researchers have used the term secondary traumatic stress (Figley, 1995). However, there is evidence that not everyone copes with potential traumatic experiences in the same way and not all individuals exposed to serious events, develop stress related symptoms (Shoji, Bock, Cieslak, Zukowska, Luszczynska, & Benight, 2014). Because some individuals seem to be less likely to develop stress, resilient promoting factors should be considered in order to better understand the variety of individual responses to stressful life situations. There is evidence that personality factors and the availability of social support influence how well a person copes with different types of stressors (Clark & Owens, 2012; de Boer, van Rikxoort, Bakker, & Smit, 2014). However, much research on the associations between personality, social support and stress usually concentrate on primary victims. In the context of secondary trauma, there are few studies on the variables associated with a “cost of caring” for health care providers of traumatized persons. Given the high likelihood that medical personnel from hospitals will be exposed to potentially traumatic events during their daily duty of taking care of victims and sick people, this study aims to identify underlying resilience factors that impact traumatic stress in a sample of medical staff.

Personality and traumatic stress

In the context of exposure to stressful life events, studies have found that some personality traits are positively associated with resilience, favourable trajectory of mental health, and low levels of burnout (Adriaenssens et al., 2015; Lockenhoff, Duberstein, Friedman, & Costa, 2011; Swider & Zimmerman, 2010). The Big Five Factor Model is the best-known model that describes personality in terms of five factors: neuroticism, extraversion, agreeableness, openness to experience, and conscientiousness.

Neuroticism is defined as the tendency to respond to stressful events with a high level of negative affectivity and emotional distress. In the personality and stress literature, probably one of the most consistent and generally recognized finding is the link between neuroticism and traumatic stress (Boals, Southard-Dobbs, & Blumenthal, 2014; Borja, Callahan, & Rambo, 2009; Caska & Renshaw, 2013). Findings on the relation between extraversion and traumatic stress are more diverse. Defined by the tendency to experience positive emotions, activity, and sociability, extraversion is associated with a low level of traumatic stress (Clark & Owens 2012). However, other studies reported no association between

posttraumatic stress and extraversion or a negative association between these variables (Caska & Renshaw, 2013). Openness, defined as an orientation toward new situations, creativity, and intellectual interest, is associated with the ability to manage the uncertainty of life effectively and to deal better with traumatic events and trauma-induced life changes (Tedeschi & Calhoun, 1996). However, some recent studies report no significant associations between openness and posttraumatic stress symptoms (Caska & Renshaw, 2013; Clark & Owens, 2012). Further on, agreeableness is defined through flexibility, tolerance, interpersonal trust and consideration of others (McCrae & Costa, 1997; Watson & Clark, 1997). There is some evidence that lower levels of agreeableness are associated with posttraumatic stress (Caska & Renshaw, 2013). Finally, conscientiousness is conceptualized as the tendency toward persistence, organization, and conformity to rules (e.g. Costa & McCrae, 1992). Studies report that lower levels of conscientiousness correlates with greater posttraumatic stress symptom severity (Caska & Renshaw, 2013). Because the literature on the role of personality in the development of posttraumatic stress symptoms is inconsistent, other factors may be responsible for the association between personality traits and stress related symptoms. We hypothesize that one of these factors may be social support that play a moderating role in the relationship between personality factors and stress.

The role of social support

Social support is a complex construct that originates from a variety of sources (e.g., family, friends, community) and refers to the provision of emotional support (e.g. reassuring companionship), informational support (i.e. providing advice about daily care), and instrumental help to individuals (Schulz & Schwarzer, 2004). All these forms of social support have been shown to provide many benefits to the overall health, well-being, and life satisfaction (Escriba-Aguir & Perez-Hoyos, 2007; Moser, Stuck, Silliman, Ganz, & Clough-Gorr, 2012; Runcan & Iovu, 2013). Several studies also found that social support is an important protective buffer against posttraumatic stress development (de Boer et al., 2014). These results were also confirmed in studies that analyzed these relations in persons indirectly exposed to trauma life events, including medical personnel (Androniceanu, 2014; Duffy et al., 2014). The presence of a supportive social network was found to have a strong preventive effect on the development of posttraumatic stress in the context of occupational stress (Adriaenssens, de Gucht, & Maes, 2012). Lack of social support, on the contrary, has been found to be related to higher levels of fatigue, burnout, difficulties in managing work-related stress and even posttraumatic stress responses (Duffy et al., 2014). However, there are also studies that failed to find protective effects of social support on posttraumatic stress symptoms (Laffaye, Cavella, Drescher, & Rosen, 2008) while other research suggests that only some forms of social support, like emotional support, predicted traumatic stress (Clark & Owens, 2012). Moreover,

unexpectedly, other study showed that seeking social support was associated with an increased chance of developing traumatic stress (Buurman, Mank, Beijer, & Olf, 2011). Thus, the role of social support in originating traumatic stress requires further research.

The present study

The aim of the present study is to assess the relation between personality traits, social support and secondary traumatic stress, in a sample of Romanian medical staff. Because of the inconsistency between these variables, we consider that more research is needed in order to clarify these associations. Moreover, little research has been done in order to understand how personality traits and social support work together in predicting traumatic stress.

Although few studies have examined the moderating role of social support on the relation between personality traits and traumatic stress, there is some support for this premise. First, there is empirical support for the fact that perceived social support has an important stress-buffering role when people confront with stressful situations (Hamaideh, 2012; Hayes Bach, & Boyd, 2010). Individuals, who perceive a high level of social support in stressful situations, seem to deal better with these situations than individuals without significant social support. Second, there is evidence that social support interacts with intrapersonal variables, like self esteem or mastery, in order to confer resilience (Bovier, Chamot, & Perneger, 2004). Third, higher levels of extraversion, agreeability, openness, and conscientiousness have been found to be most strongly related to social support (DeLongis & Holtzman, 2005; Leskela et al., 2009; Swickert, 2009), while high levels of neuroticism are often associated with a tendency to utilize less social support (Swickert, Hittner, & Foste, 2010). In sum, there is empirical evidence indicating that personality factors confer resilience due to their association with social support. To the best of our knowledge, there are not any studies that have examined social support as moderator of the relationship between big five personality traits and traumatic stress in a sample of Romanian medical staff. Most of the previous studies on this theme focused on primary victims of trauma life events. Since professional exposure to these events is not without consequences, further work is needed in order to expand our knowledge about factors that promote resilience despite adversity. This study was designed to address this issue.

Based on theoretical and empirical evidence presented above, we hypothesized that: (1) neuroticism will positively correlate with secondary traumatic stress symptoms, while extraversion, agreeability, openness, and conscientiousness will negatively correlate with secondary traumatic stress symptoms; (2) social support will negatively correlate with secondary traumatic stress; (3) emotional/ informational support will moderate the relation between personality factors on secondary traumatic stress symptoms.

Methodology

Participants

Physicians and nurses from four hospitals from Romania participated in this study. The final sample consisted of 162 participants (66.9% nurses and 33.1% physicians) from several hospital units: Intensive Care, Emergency, Neurosurgery, Cardiology, and Oncology units. From the total sample, 87% were female and 13% were male ($M_{age}=32.02$; $S=10.69$). The inclusion criterion was working for at least one year in *healthcare* setting. The experience in the healthcare field ranges from 1 to 40 years ($M=7.46$ years, $SD=6.22$) and they work with the patients between 15 and 50 hours per week ($M=33.36$, $SD=7.85$).

Measures

The *Secondary Traumatic Stress Scale* (STSS; Bride, Robinson, Yegidis, & Figley, 2004) was used to measure three dimensions of secondary traumatic stress: intrusion, avoidance and arousal. The 17 items were evaluated on a 5-point Likert scale, ranging from 1 (never) to 5 (very often). Cronbach's Alphas for this current sample were 0.70 for intrusion, 0.80 for avoidance, and 0.78 for arousal subscale.

Five Factor Model Rating Form (FFMRF; Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006) is a 30-item scale measuring five major areas of personality: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Each item is assessed by a single item that is anchored at both the low and high ends by a set of 2-3 adjectives. Cronbach alphas for the current sample ranging between 0.71 and 0.78, for the five scales.

The Medical Outcomes Study Social Support Survey (MOS; Sherbourne & Stewart, 1991), a 19-item scale, was used to assess two dimensions of perceived social support: emotional/ informational support and positive social interaction (the availability of other persons to talk and do fun things with you). The items were rated from 1 (never) to 5 (always). Cronbach's Alphas for this current sample were 0.92 for emotional informational support subscale and 0.90 for positive social interaction subscale.

Demographic variables were collected via a questionnaire that covered age, gender, occupation, hospital unit, number of hours of work with patients per week and work experience.

Procedure

A researcher presented the research as an exploration study of the employers' responses related to their daily professional activities. The participants were informed that their participation was voluntary and would not become part of

their evaluation. The participants completed all measures anonymously to protect their confidentiality, after signing an informed consent. Because the workload in the workplace is very high, the participants had one week to complete the survey. Of the 223 surveys distributed, 170 (76.23%) were returned. We removed 8 participants from the analysis because they provided incomplete data. No incentives were offered to the participants in this study.

Results

Preliminary analysis

In order to test for a possible bias, we conducted an analysis of variance (One-way ANOVA) comparing professionals' from different hospital units (Intensive Care, Emergency, Neurosurgery, Cardiology, and Oncology) means on intrusions, avoidance, and arousal. The results showed no significant differences on any of the aforementioned study variables. Moreover, independent samples *t*-tests indicated no significant differences between physicians and nurses on intrusions, avoidance, and arousal.

The association between personality traits, social support and traumatic stress symptoms

Neuroticism positively correlated with intrusion, avoidance, arousal, the relations being moderate to strong. The other personality traits correlated negatively with all the dimension of secondary traumatic stress, therefore high levels of extraversion, agreeableness, openness and conscientiousness are associated with lower levels of intrusions, avoidance, and arousal. A single exception was noted, the association between openness and intrusion being non-significant. The results also showed that emotional support did not correlate with the three dimensions of secondary traumatic stress. There were also no significant associations between the hours of work with patients per week, the professional experience and all the studied variables. Means, standard deviations and correlation coefficients for all scales are reported in Table 1.

Table 1. Means, standard deviations, and bivariate correlations for all manifest variables and indicators

	1	2	3	4	5	6	7	8	9	10	11
1. N	1										
2. E	-.27**	1									
3. A	-.32**	.28**	1								
4. O	-.19*	.22**	.31**	1							
5. C	-.54**	.44**	.46**	.35**	1						
6. EIS	-.14	.25**	.29**	.24**	.24**	1					
7. I	.45**	-.21**	-.19*	-.19	-.34**	-.09	1				
8. Av	.53**	-.26**	-.40**	-.13*	-.47**	-.15	.64**	1			
9. Ar	.52**	-.19*	-.33**	-.22**	-.41**	-.11	.65**	.84**	1		
10. Exp	-.03	.09	.01	.03	.07	.06	-.26**	-.10	-.14	1	
11. HW	-.03	.04	.10	.05	.18*	.05	.03	-.12	-.12	.18*	1
12. M	22.26	23.61	34.12	25.20	48.33	32.12	9.60	14.81	10.48	7.34	33.31
13. SD	5.56	3.51	4.33	3.92	6.26	6.49	3.17	5.15	4.13	7.91	8.90

Note: *N* – neuroticism, *E* – extraversion, *A* – agreeableness, *O* –openness, *C* –conscientiousness; *EIS* – Emotional/ Informational Support; *I* – intrusion; *Av* – avoidance; *Ar* – arousal; *Exp* – professional experience; *HW* - hours per week; *N*=162; * $p < .05$; ** $p < .01$; *** $p < .001$

Testing for moderation

For the SEM model of direct and moderation effects, estimates were derived using maximum likelihood estimations and an overall model fit was assessed with the normative fit index (NFI), goodness of fit (GFI), the comparative fit index (CFI) and the root mean square residual (RMSEA). Acceptable model fit indices are indicated by an $\lambda^2/df < 3$, an GFI, NFI and CFI $> .90$ (Hu & Bentler, 1999). The fit for our overall model was good (Figure 1): $\lambda^2(20)=59.78$, $p=.059$; $\lambda^2/df=1.80$; NFI=.96; CFI=.97; GFI=.92.

The demographic control for professional experience and hours per week was not significant. The results revealed a significant positive link between neuroticism and the three dimensions of secondary traumatic stress: intrusion ($b = .24$, $p < .001$), avoidance ($b = .41$, $p < .001$), and arousal ($b = .34$, $p < .001$). Extraversion, and conscientiousness are negatively related with intrusions ($bs = -.20$, $-.17$, respectively, $p = .005$, $< .001$), avoidance ($bs = -.34$, $-.38$, respectively, $p = .004$, $< .001$), and arousal ($bs = -.20$, $-.27$, respectively, $p = .050$, $< .001$). Agreeability and openness are negatively associated only with avoidance ($bs = -.45$, $-.16$, respectively, $p < .001$, $p = .015$) and arousal ($bs = -.30$, $-.22$, respectively, $p < .001$, $p = .007$).

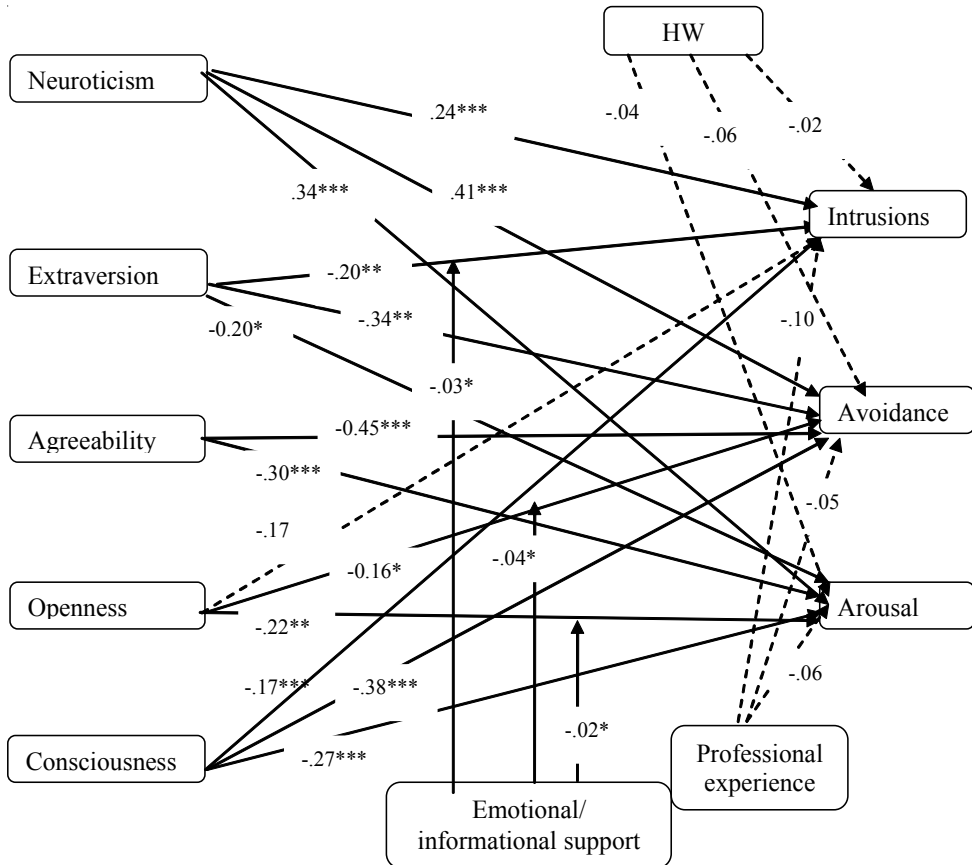


Figure 1. Structural equation model and path analysis of the risk factors for and moderation of secondary traumatic stress (N=162). Standardized path coefficients reported. Correlations between exogenous constructs and error variances were omitted from the model for readability. HW – hours of work with patients per week; * p < .05; ** p < .01; *** p < .001. Model fit: $\chi^2(20)=59.78, p=.059; \chi^2/df=1.80; NFI=.96; CFI=.97; GFI=.92$.

There was mixed support for the predictions based on the second aim regarding the interaction between personality traits and social support. The results showed that emotional support moderated the effect of extraversion on intrusion (see Figure 2), as well as the effect of openness on avoidance (see Figure 3), and arousal (see Figure 4). We explored these moderating effects of perceived social support by calculating mean intrusions, avoidance, and arousal values for low, medium and high levels of social support. Medium values are based on the mean; low and high levels of the variable are one standard deviation below and above the mean, respectively (Aiken & West, 1991).

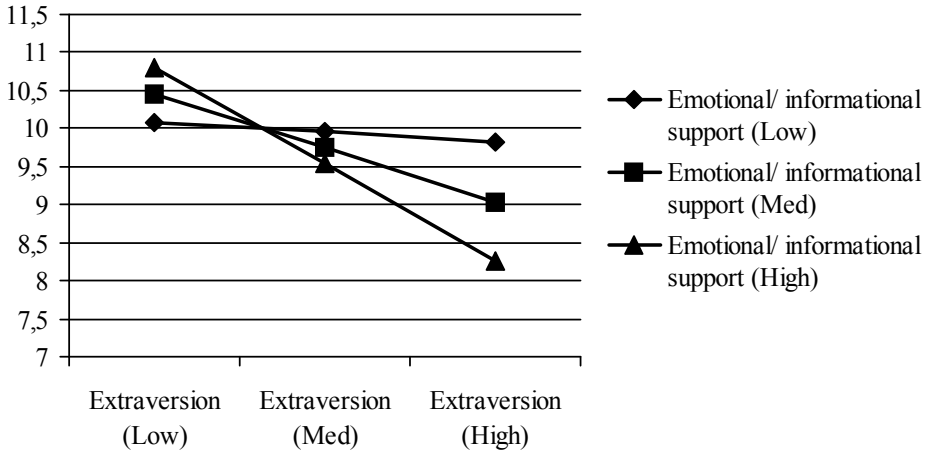


Figure 2. Presence of intrusions as a function of extraversion and emotional/informational support.

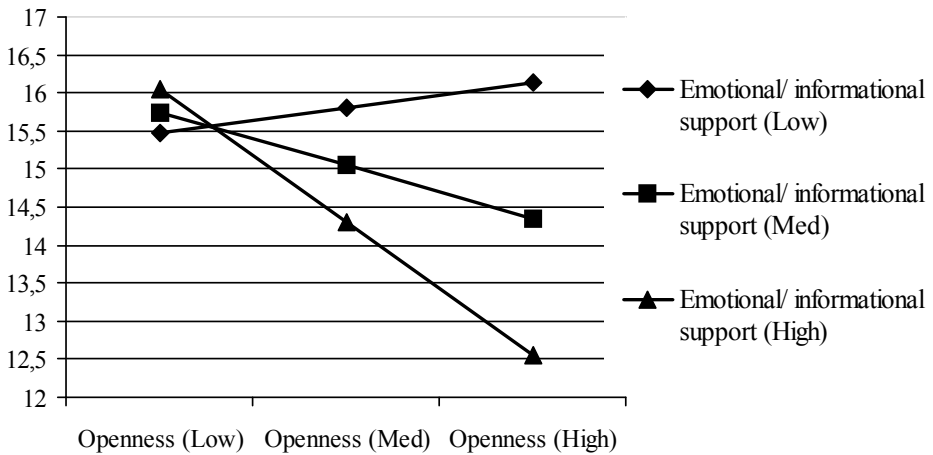


Figure 3. Presence of avoidance as a function of openness and emotional/informational support.

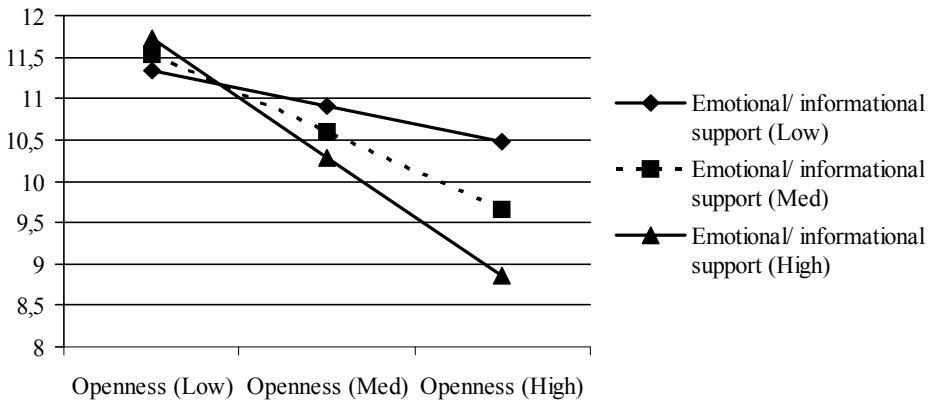


Figure 4. Presence of arousal as a function of openness and emotional/ informational support.

Discussion

The first aim of this study was to explore the relation between personality traits and traumatic stress symptoms in the context of secondary exposure to traumatic life events. Our results confirm the fact that people with a high level of neuroticism present a higher level of all the dimensions of traumatic stress. On the other hand, high levels of extraversion, agreeability, openness, and conscientiousness are associated with low levels of secondary traumatic stress symptoms. These findings are in line with previous studies concerning the relationship between these traits and traumatic stress in primary victims (Clark & Owens, 2012). Therefore, extraversion, agreeableness, openness, and conscientiousness seem to be protective factors, in the context of exposure to stressful events, directly or indirectly, while neuroticism may be considered a risk factor for developing traumatic stress after exposure to critical situations. In the present study, the stronger relations were identified between traumatic stress and two personality traits: neuroticism and conscientiousness. Therefore, these results confirm the fact that one of the most consistent finding in the stress and personality literature is the link between neuroticism and traumatic stress (Borja et al., 2009). The strong relation between conscientiousness and traumatic stress can be explained by the fact that persons high in conscientiousness are mostly focused on the fulfilment of their professional goals. When confronted with stressful situations, these persons may be more able to use efficient coping strategies in order to decrease the stress and to accomplish their goals (Caska & Renshaw, 2013).

Our second aim was to analyze the relation between social support and traumatic stress. Quite unexpectedly, our results revealed that social support was not significantly associated with any of the three symptoms of traumatic stress analyzed in this study. However, this is not the first study that did not find significant associations between social support and traumatic stress. These findings add to the limited literature suggesting that perceived social support is not related to traumatic stress symptoms (Laffaye et al., 2008). However, we only measured emotional and informational support. It is possible that other forms of social support, like positive social relationships, are more important in reducing traumatic stress. Moreover, we did not measure the source of perceived social support. One previous study showed that supervisor social support predicts positive outcomes in the context of occupational stress, while co-worker social support had no effect (Escriba-Aguir & Perez-Hoyos, 2007). Another explanation for these non-significant results lies in the fact that the relation between support and traumatic stress is moderated by other variables like personality traits, as our results confirmed.

The third aim of the current research was to explore whether the association between personality traits and secondary traumatic stress dimensions was moderated by perceived emotional and informational social support. The results showed that social support moderated the effects of two personality traits, extraversion and openness, on the three traumatic stress symptoms. Specifically, our results show that people with a high level of extraversion who perceive a high level of social support have the lowest level of intrusion. Moreover, for people with a high level of openness, the lowest level of stress is reported by those who also report a high level of emotional and informational support. The relation between openness and arousal is similar to the one identified between extraversion and intrusions. Specifically, people with a high level of openness have a lower level of arousal compared to persons with a low level of openness. This difference is more evident for those persons who also report a high level of social support. All these findings support the assumption that for persons with high levels of extraversion and openness, emotional and informational support is a key factor in order to decrease traumatic stress symptoms. Previous studies showed that extraverts have larger social support networks and manifest a greater need for emotional disclosure and sharing experiences (Swickert, 2009). Openness, defined as a receptive orientation toward novel experiences and ideas, is a protective factor against traumatic stress development. However, only a high level of openness is not sufficient to reduce stress, but perceived emotional and informational support can promote resilience in these persons.

Limitation and future research directions

Several limitations should be mentioned. Firstly, because the study is cross-sectional, we must interpret the cause–effect conclusions cautiously. Secondly, the nature of exposure to different traumatic life events may differ across different hospital units. However, our results did not reveal significant differences in the level of traumatic stress symptoms between participants from different units. Moreover, we controlled the influence of hours of work with patients per week when we analysed the moderation effects and the result was negligible. Third, the majority of the participants are female and nurses. Therefore, the results can be generalized mainly to these categories. Further studies are needed to replicate these findings in larger samples, consisting of both women and men. Additional research should also be done to explore the moderating role of other forms of social support, from different sources, on the relation between personality traits and traumatic stress symptoms.

Despite the above mentioned limitation, the present study expands the empirical evidence confirming the moderating role of social support in the relation between extraversion, openness and traumatic stress, in a less studied sample – the Romanian medical staff. These results could inform prevention and early intervention efforts that attempt to integrate individual differences in order to reduce traumatic stress caused by professional activities. The management of the medical institutions has to identify those who suffer from traumatic stress and take protective measures, including access to counselling. It is important that workers exposed to different stressful situations that involve others people's lives should have the opportunity and time to share their feelings, especially individuals high in extraversion and openness. Therefore, it is important to provide a network of support, including formal groups which can provide both emotional and informational assistance. Psychological debriefing could be a solution for providing emotional and informational support in order to manage negative emotions.

As a conclusion, these results highlight the importance of understanding that intrapersonal resources, like personality traits, and interpersonal resources, like social support, are not manifested in isolation of one another. The complex interrelations between intrapersonal and interpersonal factors should be considered when designing intervention programs in order to ensure resilience among persons indirectly exposed to stressful life events. Future research in this field should replicate and then extend these findings.

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