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Posttraumatic Stress Symptoms in Breast Cancer Patients: Temporal Evolution, Predictors, and Mediation

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Abstract

This study (N = 102 women) evaluated the time course of posttraumatic stress disorder symptomatology (PTS) at different stages of nonmetastastic cancer diagnosis and treatment: during treatment, at the end of treatment, and at a 6-12 months follow-up. We also assessed the contribution of demographic, trait, and state predictors to PTS, and coping processes as proximal mediators of the relation between Type C personality and PTS. Results indicated that PTS remained constant across all phases. There were significant correlations (range .28 to .81) between PTS and psychosocial variables and age, but not with other sociodemographic or medical factors. A linear growth curve model showed that hopelessness/helplessness (β = 1.45) and Type C personality (β = 1.40) were the best predictors of PTS, followed by trait dissociation (β = 0.55), and the coping strategies of anxious preoccupation (β = 1.20), cognitive avoidance (β = 0.91), and symptoms of acute stress disorder (β = 0.19). A mediation model showed that the coping strategies of anxious preoccupation, cognitive avoidance, and helplessness/hopelessness mediated the relationship between Type C personality and PTS during treatment, post treatment, and follow-up. These results clarify the contribution of different predictors of posttraumatic symptomatology and can help develop prevention programs.

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Research has focused increasingly on potential posttraumatic stress disorder (PTSD) diagnosis or symptomatology following cancer. The latter may signal threat to life and body integrity including possible disfiguration, disability, pain, and loss of social and occupational roles. The uncertainty of outcome, experienced lack of control, and suddenness of the diagnosis may elicit intense emotions including fear and helplessness, as with single-event traumas, but the protracted, chronic, and multifaceted nature of cancer adds psychological complexity (Gurevich, Devins, & Rodin, 2002). In cancer, stressful events occur over time (e.g., cancer detection, diagnostic and treatment procedures, and, sometimes, recurrences and terminal illness), so it may be difficult to distinguish the reexperiencing of past threats from the impact of new ones. These characteristics explain the wide variability in the designation of the most relevant traumatic events when considering an individual's reaction, and raises the question of whether posttraumatic stress symptoms (PTS) change throughout its development and treatment.

Most studies have used cross-sectional designs, which preclude the identification of different threats across disease and treatment processes, limiting what we can conclude about events associated with PTS (Andrykowski & Kangas, 2010). Furthermore, researchers have used different procedures to assess symptomatology, which may explain the disparity (0%-20%) in the estimates of the presence of PTSD in the cancer population (e.g., Shelby, Golden-Kreutz, & Andersen, 2008; Tjemsland, Soreide, & Malt, 1998).

The literature on reactions to traumatic events has shown that sociodemographic variables, characteristics of the stressor, prior history of trauma, reactions to the event, and social factors are significant determinants of acute and chronic dysfunctional reactions to

trauma (Brewin, Andrews, & Valentine, 2000; Cardeña & Carlson, 2011). The relative contribution of some of these factors to symptom development in cancer has been analyzed in different studies. Regarding demographic variables, a consistent finding among adults is that younger age at cancer diagnosis predicts greater posttraumatic symptomatology (e.g., Kangas, Henry, & Bryant, 2005a). As far as disease and treatment variables, because different forms of cancer produce varying levels of threat to life and function, it has been postulated that PTS are related to more advanced stages of cancer and more aggressive and/or longer treatment, but research findings have been equivocal (Andrykoski & Kangas, 2010). Gurevich et al. (2002) concluded that objective disease variables might not reflect the subjective experience of life threat. Some studies have found PTS to be associated with the completion of therapy (e.g., Bleiker et al., 2000), whereas others have reported symptoms months or even years after the completion of primary treatment (Green et al., 2000).

In regard to sociodemographic factors, it has been proposed that prior trauma may reduce the ability to cope with later stressors, leading to dysfunctional reactions, and there is evidence that it predicts the development of PTS among cancer patients, but the evidence is equivocal (e.g., Bleiker et al., 2000; Shelby, Golden-Kreutz, & Andersen, 2008). Social support seems to attenuate the response to traumatic events and facilitate affect regulation (Gurevich et al., 2002). According to the stress-buffering model, such support provides resources that reduce the perceived stress of an event (Cohen & Wills, 1985); several studies have found that low support is associated with PTS among cancer patients (e.g., Menhert & Koch, 2008).

Besides sociodemographic variables, trait and state psychological factors have been related to PTS. Dissociation, which can be defined as cognitive compartmentalization or experiential avoidance (Cardeña & Carlson, 2011), is often present in acute and chronic

posttraumatic reactions. The tendency to dissociate (trait dissociation) has been related to exposure to trauma and the development and severity of PTSD (e.g., Briere, Scott, & Weathers, 2005), and there is evidence for a dissociative subtype of PTSD (Lanius, Brand, Vermetten, Frewen, & Spiegel, 2012). However, to the best of our knowledgde trait dissociation has not been studied with oncology patients.

In contrast, a risk factor that has been widely studied is Type C personality, presumed to be involved in cancer onset and prognosis. Temoshok (1987) stated that Type C individuals' motivation is to achieve harmony in their milieu by sacrificing their own desires and goals, being complacent and not expressing negative emotions, and using excessively logical and rational behaviors. The nonexpression of negative emotions--the core of type C--has been considered to undermine the adjustment in people with cancer. For example, in samples of breast cancer patients, nonexpression of negative emotions was related to higher emotional distress (Andreu et al., 2012) and levels of anxiety and depression (Ho, Chan, & Ho, 2004), perhaps because it prevents contextualizing and processing the meaning of the event. Nonexpression of negative emotions has been also related to PTSD avoidance and intrusion symptoms (e.g., Bleiker, Pouwer, Van der Ploeg, Leer, & Ader, 2000).

Psychological reactions around the time of trauma and coping strategies are related to PTS. Among the possible predictors of posttraumatic stress responses, acute stress reactions deserve special attention. One of the arguments to justify the inclusion of acute stress disorder (ASD, which includes dissociative, hyper-experiencing, avoidance, and hyperarousal reactions) into the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association [APA], 1994; Cardeña, Lewis-Fernández, Beahr, Pakianathan, & Spiegel, 1996) was its potential to predict future PTSD. Indeed, various meta-analyses have shown ASD to be a substantial risk factor for PTSD (see Cardeña & Carlson,

2011). Studies with cancer patients have found a relation between receiving a diagnosis of cancer and developing ASD (e.g., Menhert & Koch, 2007), and a moderate effect of ASD as a predictor of later PTSD (Kangas et al., 2005b).

Finally, coping strategies also influence cancer patients' distress. In general, avoidance and acceptance/resignation strategies relate to poor psychological adjustment, whereas active coping responses relate to good outcome (Brennan, 2001). Studies on PTS in cancer patients support this association. Anxious preoccupation appears to be a significant predictor of PTS (Eckhardt, 1998) and correlates with ASD (Kangas, Henry, and Bryant, 2007). Avoidance strategies can backfire by preventing the transformation of a perceived threat to one that can be managed; Elklit & Bloom (2011) confirmed that avoidant strategies predict PTS in breast cancer patients. Coping strategies under stressful conditions do not operate in isolation, but mediate the relation of other psychosocial parameters with stress-related adjustment (Taylor & Stanton, 2007).

Our study aimed to evaluate the temporal evolution of PTS in a group of non-metastatic breast cancer patients at three points: (a) the active treatment phase of the disease - at least 1 month after confirmation of the diagnosis and within the temporal definition of PTSD (treatment) (APA, 2013); (b) 1 month after completion of treatment (posttreatment); and (c) 6-12 months later (follow-up). We also analyzed the relative contribution of different factors, which have been generally analyzed independently from each other, to PTS development. Last, as recommended by Taylor & Stanton, (2007), we tested whether coping was a proximal mediator of the relation between Type C and the development of PTS.

Method

Participants

We approached 187 consecutive female patients, aged 18 or older, during their second preoperative visit to the outpatient clinic of the department of surgery at the Fundación Instituto Valenciano de Oncología (FIVO) in Valencia, Spain. During this visit (pretreatment), patients received the results of biopsy and histological studies with information on the malignance of their tumor. A psychologist informed patients about the study and 174 (93.0%) agreed to participate and provided written informed consent and completed the first set of questionnaires. Of these, 48 were excluded for not meeting the inclusion criteria: (a) 19 did not have a diagnosis of nonmetastatic breast tumor, (b) 13 received adjuvant chemotherapy, and (c) 16 were participating in a clinical trial. Additionally, 24 did not complete the assessment at the end of treatment, 2 because of death, 7 because of scheduling conflicts, and 15 for refusing to continue participating, so their data were excluded from further analyses. The final sample was formed by 102 non-metastatic breast cancer patients treated with adjuvant chemotherapy. The study was approved by the ethical committee of the FIVO.

Procedure

We studied variables associated with posttraumatic responses at different times: stable personality characteristics, acute stress responses, and previous history of trauma were evaluated at the beginning of the care process, after biopsy but before surgery (pretreatment). Coping strategies, social support, and PTS were assessed during the 3rd/4th session of chemotherapy (treatment), approximately between 12-16 weeks after the preliminary diagnosis, to provide sufficient time for the acute stress reaction occurring immediately after diagnosis to subside, thereby permitting assessment of the more enduring psychological responses (Greer, 1991). At that time, the patients had been subjected to various diagnostic tests and surgery, had received confirmation of the cancer diagnosis, and had been advised as to the treatment approach to take.

There were two other evaluation times. At the end of primary treatment, whether surgery, chemotherapy and/or radiotherapy (posttreatment), patients had lost the safety net involving regular contact with health professionals and receiving active treatment, which can provide a sense of control. We also evaluated posttraumatic reactions 6-12 months after completion of treatment (follow-up). At posttreatment, the sample was reduced to 87 women because 1 participant died, 1 had cancer recurrence, 4 declined to continue participate, and 9 could not be contacted. At follow-up, the sample was reduced to 72 because 11 women could not be contacted and 4 refused to continue in the study.

Measures

A general form was used for sociodemographic data: age, marital status, education level, and employment status. Medical information (stage of disease, type of surgical treatment, and hormonal therapy) was gathered through chart review.

All of the following measures have good published psychometric properties. Except for the *Stanford Acute Stress Reaction Questionnaire*, the following instruments were translated and adapted to Spanish by the first 5 authors using back-translation.

The 30-item *Stanford Acute Stress Reaction Questionnaire* (SASRQ, Cardeña et al., 2000) measures PTSD and dissociative reactions to a stressful or traumatic event using a 1-5 scale. In our sample, reliability indexes of the Spanish translation (Cardeña & Maldonado, 2001) were satisfactory: total score, $\alpha = .90$; dissociation, $\alpha = .81$; reexperiencing, $\alpha = .70$; avoidance, $\alpha = .78$; hyperarousal, $\alpha = .74$.

The *Impact of Event Scale-Revised* (*IES-R*; Weiss & Marmar, 1997) consists of 22 items on a 4-point scale assessing three types of PTSD symptoms in reference to the week before the evaluation. In our sample, the IES-R showed satisfactory internal consistency

indices for total score, α = .90, and its subscales: intrusion, α = .90; hyperarousal, α = .76; and avoidance, α = .77.

The *Trauma History Questionnaire* (THQ, Green, 1996) lists potentially traumatizing events; most of them follow criterion A1 for Posttraumatic Stress Disorder (APA, 2013). It contains 23 items and an open question on events not covered in previous questions. Test-retest reliability has been satisfactory (Green et al., 2000).

The *Dissociative Experiences Scale* (DES, Bernstein & Putnam, 1986) is a self-report measure that assesses trait dissociation through 28 items inquiring how often the individual experiences different dissociative phenomena (from 0%, 10%... 100%). The DES has been analyzed factorially but because there is controversy about the factor structure of the instrument (Cardeña, 2008) and an exploratory factory analysis with our data did not reveal a good factor solution, we used only the total score, which showed adequate internal consistency, α = .68.

The *Short Interpersonal Reactions Inventory* (SIRI, Grossarth-Maticek & Eysenck, 1990) includes 70 dichotomous items covering six personality types or styles that are considered risk factors for the development of various pathologies (Type C personality). We evaluated only Type 1 (type prone to cancer or Type C personality). This scale consists of 10 items and showed adequate reliability in our data, α = .67.

The Mini-Mental Adjustment to Cancer Scale (Mini-MAC, Watson et al., 1994) evaluates behavioral and cognitive responses to cancer. It consists of 29 items on a 4-point range and includes 5 subscales: fighting spirit (the tendency to confront and actively face illness), anxious preoccupation (the tendency to experience illness as a source of marked anxiety and tension), fatalism (the tendency to have a resigned and fatalistic attitude towards illness), hopelessness–helplessness (the tendency to adopt a pessimistic attitude toward

illness), and cognitive avoidance (the tendency to avoid direct confrontation with illness-related issues). A confirmatory factor analysis of the reliability levels of the Spanish adaptation (Andreu, et al., in preparation) confirmed a 5-factor solution for the instrument, which showed satisfactory reliability in our sample: hopelessness–helplessness, $\alpha = .85$; anxious preoccupation, $\alpha = .86$; cognitive avoidance, $\alpha = .84$; fighting spirit, $\alpha = .71$; and fatalism, $\alpha = .63$.

The *Perceived Social Support Scale* (PSS-S, Norris & Kaniasty, 1996) consists of 15 items on a 4-point scale. It provides a total score as well as scores for each subscale: emotional, informational, and tangible. In our data, the internal consistency for the total score, the only one we used, was good, $\alpha = .88$.

Data Analysis

We first computed a correlation matrix including criterion and predictor variables. To analyze our hierarchically structured data, we assessed three different models, following the procedure described by Shek and Cecilia (2011). First, an unconditional mean model was tested to examine the percentage of the variability in PTS due to interindividual differences. With this baseline model it is also possible to analyze the adequacy of modeling the nested data structure by computing an intraclass correlation coefficient (ICC). Next, an unconditional linear growth curve model was tested to explore systematic changes in PTS over time (Singer, 2012). Finally, a conditional linear growth curve model was used to examine whether variation from the initial status of PTS was related to other variables.

We also tested a mediation model using EQS v.6.1 (Bentler, 2006). The indirect effects of causal variables on outcome variables through mediator factors were assessed by means of a procedure based on Sobel test and bootstrap confidence intervals. As the assumption of multivariate normality was not fulfilled (Mardia´s normalized coefficient > 5),

robust maximum-likelihood estimation procedures were used to obtain path coefficients. In terms of fit indices we evaluated the Satorra-Bentler χ^2 statistic, the normed fit index (NFI), the Bentler-Bonett non-normed fit index (NNFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA).

Results

We compared the demographic and psychological variables evaluated at pretreatment between the women who also completed the next evaluation (treatment; $n = 102$) and those who did not ($n = 24$). The only significant difference was age, $F(1, 124) = 9.06$, $p = .003$, with the study sample being younger ($M = 50.54$, $SD = 8.77$, range = 27-68) than the non-completers ($M = 56.96$, $SD = 11.79$; range = 36-70). The age range of the participants at treatment was 27-68 ($M = 50.54$, $SD = 8.77$). Most were married or lived with a partner (81.4%); 56.9% were homemakers and the rest worked outside the home. The most frequent diagnosis was Invasive Ductal Carcinoma (65.7%), usually (90.2%) in stages I or II of breast cancer. Participants received chemotherapy alone or with radiotherapy and had undergone surgery, 65.7% of them mastectomy and 34.3% breast-conserving surgery. Because only 72 women completed all assessments, we compared the medical, demographic, and psychosocial variables evaluated at pretreatment and treatment phases of the group of women who completed all four assessments of the study with the 30 who did not complete them. ANOVAs showed no significant differences ($p > .05$).

The only significant correlation between PTS and demographic and medical variables was that younger women reported more symptoms at posttreatment, $r(85) = -.24$, $p = .046$, and follow-up $r(70) = -.27$, $p = .024$. In contrast, there were a number of significant correlations between PTS and psychosocial factors. Acute stress reactions and trait dissociation correlated with PTS during all evaluations; acute stress reactions also correlated

with dissociation and both of them correlated with anxious preoccupation and cognitive avoidance. Trauma history was related to less social support and hopelessness/helplessness, and social support was also related to increased fighting spirit and decreased fatalism. Type C personality correlated with PTS at treatment and posttreatment, and with all coping strategies. Anxious preoccupation and cognitive avoidance correlated positively with PTS in all evaluations, hopelessness–helplessness correlated with PTS at treatment and posttreatment, and fighting spirit correlated negatively with PTS at treatment (Table 1).

Table 2 shows the estimated fixed effects for three nested models. The ICC was 0.57, according to the unconditional mean model (Model 1). Next, the unconditional linear growth curve model (Model 2) showed non-significant values for the linear slope parameter (Time), indicating that the linear growth rate remained constant over time. These results indicate that the mean PTS score did not change significantly over time. Finally, a conditional linear growth curve model (Model 3) was tested to examine the effect of the predictor variables on PTS. Age and fighting spirit were not significant predictors whereas acute stress reactions, dissociation, Type C, anxious preoccupation, hopelessness–helplessness, and cognitive avoidance were. Regarding the estimates of covariance parameters, the correlation between the intercept and the linear growth parameter was not significant, Model 2: $\beta = -55.46$, $SE = 31.33$, $p = .077$, Model 3: $\beta = 19.01$, $SE = 12.59$, $p = .131$. This result confirms that participants did not present differences in the rate of linear change of PTS over time.

With regard to the mediating role of coping strategies (measured at treatment) between Type C personality (measured at pretreatment) and subsequent development of PTS (at treatment, posttreatment, and follow-up), whereas fatalism and fighting spirit were not significant regardless of time, the indirect effects of anxious preoccupation were significant at treatment, posttreatment, and follow-up, and, hopelessness/helplessness, and cognitive avoidance, were significant at treatment. This model was not statistically significant:

treatment: Satorra-Bentler (SB) $\chi^2(1, N = 102) = 2.84$, $p = .092$; posttreatment: S-B $\chi^2(1, N = 87) = .68$, $p = .408$; follow-up: S-B $\chi^2(1, N = 72) = 2.57$, $p = .109$, and fitted the observed data quite well, all goodness of fit indexes exceeding their respective common acceptance values: treatment, CFI = .99, NFI = .98, NNFI = .97, RMSEA = .14; posttreatment, CFI = 1.00, NFI = .99, NNFI = 1.00, RMSEA = .00; follow-up, CFI = .69, NFI = .97, NNFI = .98, RMSEA = .15. The non-standardized regression coefficients are shown in Figure 1. Coping strategies had a significant influence as mediators for all three testing periods; however, the effects of cognitive avoidance and hopelessness–helplessness became weaker during follow-ups, whereas anxious preoccupation's mediating power remained stable.

Discussion

Our results indicate that overall PTS did not change significantly across time, suggesting that although the psychological dynamics of having cancer may change during the first year, on average patients do not seem to become markedly better or worse. The results obtained in other longitudinal studies conducted with breast cancer patients have shown similar results (e.g. Menhert & Koch, 2007).

As far as predictor variables in the onset of PTS, our findings are in line with studies that have shown that factors related to the psychological profile of the patient rather than objective disease characteristics increase the risk of PTS (Andrykowski & Kangas, 2010). Some studies have highlighted young women's greater vulnerability to develop PTS (e.g., Mosher & Danoff-Burg, 2005). In our data, age correlated negatively with PTS, but only at posttreatment, at the time when patients, especially younger ones, must face the challenge of going back to daily activities such as raising children and work.

As far as prior trauma, our data indicate that neither the number nor the category of prior traumatic events were associated with PTS, although they related to less social support

(perhaps because some prior trauma might have involved acquaintances and/or because it may have made the person less social) and increased sense of hopelessness/helplessness. The empirical evidence relating prior trauma and PTS in cancer patients has been mixed, and our results suggest that it may have a greater effect on sociability and coping strategies than on the symptoms themselves.

Perceived social support has been found to be a protective factor against PTS in the psycho-oncology literature but was not a significant predictor in our study, although it correlated with some coping strategies. The high scores for social support in our data suggest a ceiling effect, consistent with the social and family oriented nature of the Spanish culture, which offers a high level of support (Rokach, Moya, Orzeck, & Exposito, 2001).

Type C personality, trait dissociation, and acute stress reactions at the time prior to surgery and diagnosis were non-redundant predictors of PTS. The role played by trait dissociation and acute stress reactions support their independent predictive role in the development of PTS (Cardeña & Carlson, 2012). Moreover, in line with studies that have found non-expression of negative emotions to be associated with more emotional distress, Type C predicted the development of PTS. To the best of our knowledge, only one study had explored the relation between Type C personality and PTS previously (Bleiker et al., 2000), and none had evaluated trait dissociation and PTS in the context of cancer. The coping strategies of hopelessness-helplessness, anxious preoccupation, and cognitive avoidance predicted PTS. This outcome could be expected because intrusive, ruminative, and avoidance reactions can be considered PTSD criteria (Kangas, Henry, & Bryant, 2007).

Finally, our results indicate that patients with type C personality, who tend to sacrifice their own desires and goals, be complacent with others, and not express negative emotions- are more likely to report PTS, but this relation was mediated by the use of specific coping

strategies (anxious preoccupation, hopelessness–helplessness, and cognitive avoidance). Interestingly, anxious preoccupation correlated strongly with the other two strategies (r = .56 with cognitive avoidance, r = .63 with hopelessness–helplessness), whereas cognitive avoidance and hopelessness/helplessness had little relation with each other (p = .106). These results suggest specific and dynamic aspects of coping strategies in which the person may alternately focus on or avoid the threat, or anticipate a defeat. This dynamic has been interpreted as a generally ineffective attempt to escape feelings of distress (Carver & Connor-Smith, 2010), preventing a more adaptive and functional processing of the traumatic experience (cf. Foa et al., 1989).

This study has some limitations, including the relatively modest *n*s and the attrition rates. Furthermore, most of the participants had early-stage breast with a good prognosis, so our results cannot be generalized to other groups such as patients with advanced or other types of cancer. Moreover, the sample in the study was younger than the group excluded, so the results cannot be generalized to the older cohort. Future studies with a larger N may also consider the role of each of the proposed Dissociative Experiences Scale factors and taxon rather than just using a total score, and evaluate whether coping strategies mediate other predictors of PTS such as trait dissociation.

Despite these limitations and given the scarceness of longitudinal work evaluating multiple predictors of PTSD simultaneously, our study provides an important perspective of the course of PTS from one month after diagnosis to 6-12 months after the end of primary treatment, and establishes the role of relevant predictors of the onset and maintenance of symptoms. The identification of predictors and mediation variables is essential for early detection of patients at risk for later PTS. This information may assist in the design of prevention and intervention programs, which should give patients the opportunity to discuss

peritraumatic reactions, help them develop effective coping strategies, and encourage them to become more expressive in meeting their emotional and other needs.

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Table 1

Correlations Among Posttraumatic Stress Symptoms and Psychosocial Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. PTS1+	---											
2. PTS2++	.60***	---										
3. PTS3+++	.41***	.74***	---									
4. ASR	.51***	.45***	.39***	---								
5. Tr. history	.13	.15	-.01	.03	---							
6. PSS	-.02	.07	.22	-.16	-.26**	---						
7. Dis.	.33***	.42***	.29*	.19*	.15	.09	---					
8. TyC	.48***	.28**	.02	.15	.15	-.17	.11	---				
9. AP	.81***	.51***	.41***	.42***	.19	.02	.25*	.40***	---			
10. H/H	.62***	.36***	.22	.19	.23*	-.18	.14	.30**	.63***	---		
11. FS	-.37**	-.12	.06	-.13	-.14	.28**	-.14	-.27**	-.31**	-.47***	---	
12. F	.15	.04	-.19	.07	-.11	-.24*	-.06	.20*	.09	.28**	-.57***	---
13. CA	.63***	.34**	.33**	.34***	.05	.03	.26**	.44***	.56***	.16	-.11	-.08

Note. + $N = 102$ for PTS1, ASR, Dis, TyC; ++ $N = 83$ for PTS2, Tr. history, PSS, AP, H/H, CA; +++ $N = 72$ for PTS3. PTS1: posttraumatic stress disorder symptoms at treatment; PTS2: posttraumatic stress disorder symptoms at posttreatment; PTS3: posttraumatic stress disorder symptoms at follow-up; ASR: acute stress reactions; Tr. history: trauma history; PSS: perceived social support; Dis: dissociation trait; TyC: Type C; AP: anxious preoccupation; H/H: helplessness/hopelessness; CA: cognitive avoidance.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2

Estimates of Fixed Effects for Posttraumatic Stress Symptoms for Three Models

Parameter	Model 1			Model 2			Model 3		
	B	*SE B*	*t*	*B*	*SE B*	*t*	*B*	*SE B*	*t*
Intercept	22.83	1.87	12.19***	24.19	2.07	11.66***	-23.49	8.76	-2.68**
Time				-1.57	1.32	-1.19	-1.79	1.31	-1.37
Age							-.19	.13	-1.47
Acute Stress Reactions							.19	.05	4.11***
Dissociation							.55	.19	2.90**
Type C personality							1.40	.53	2.64**
Anxious Preoccupation							1.20	.29	4.09***
Helplessness/Hopelessness							1.45	.39	3.68***
Fighting Spirit							.11	.37	0.30
Cognitive Avoidance							.91	.36	2.55**

Note. *$p < .05$.** $p < .01$. *** $p < .001$

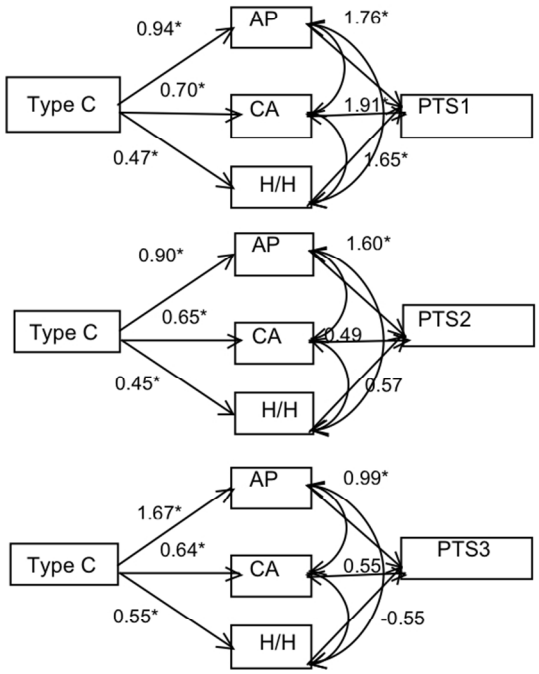

Figure 1. Mediational model (unstandardized coefficents) between Type C at pretreatment, coping, and PTS at treatment, posttreatment and follow-up. PTS1 ($N = 102$): posttraumatic stress symptoms at tratment; PTS2 ($N = 82$):: posttraumatic stress symptoms at posttreatment; PTS3 ($N = 73$):: posttraumatic stress symptoms at follow-up; Type C: Type C personality; AP: anxious preoccupation; H/H: helplessness/hopelessness; CA: cognitive avoidance. * $p <$ .05.

i am sending it as tiff file as requested. have it also as a .docx file which i can send as an email if necessary
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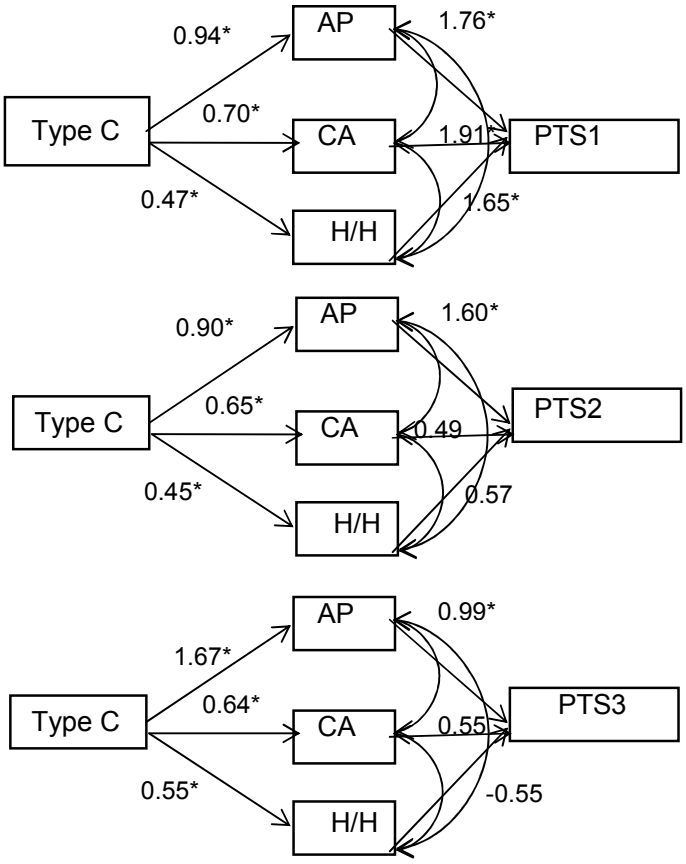

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