The effect of talking about psychological trauma with a significant other on heart rate reactivity in individuals with posttraumatic stress disorder

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Abstract

Individuals with posttraumatic stress disorder (PTSD) commonly make efforts to avoid trauma oriented conversations with their significant others, which may interfere with the natural recovery process. Trauma oriented conversations can be experienced as physiologically arousing, depending on the intensity of PTSD symptoms and perception of social support. In the current investigation, changes in heart rate responses to a trauma oriented social interaction with a significant other were assessed. Perceived supportive and counter-supportive social interactions were examined as moderators of the association between heart rate changes to this context and intensity of PTSD symptoms. A total of 46 individuals with PTSD completed diagnostic interviews and self-report measures of symptoms and perceived supportive and counter-supportive social interactions. They also participated in a trauma oriented social interaction with a significant other, which included continuous heart rate measures. Results showed that trauma oriented social interaction was associated with elevation in heart rates that positively correlated with intensity of PTSD symptoms. The moderation hypothesis was partially confirmed regarding perceived supportive social interactions. Perceived counter-supportive social interactions predicted physiological reactivity as a main effect. These findings can inform social intervention efforts for individuals with PTSD.

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Keywords: Posttraumatic Stress Disorder. Trauma Oriented Social Interaction. Physiological Reactivity. Perceived Supportive and Counter-supportive Social Interactions.

1. Introduction

Individuals with posttraumatic stress disorder (PTSD; American Psychiatric Association [APA], 2000) generally make deliberate efforts to avoid thoughts, feelings, or conversations about the traumatic event and related situations, activities, or people (Criteria C1 and C2) because it arouses recollections of the trauma and might elicit physiological reactivity (Criterion B5). Persistent avoidance of trauma-related stimuli increases the risk of both developing and maintaining PTSD (Benotsch et al., 2000; Bryant & Harvey, 1995; Pietrzak, Harpaz-Rotem, & Southwick, 2011; Pineles et al., 2011). Indeed, avoidance has often been conceptualized as interfering with successful processing of the traumatic memory, inhibiting the habituation of negative emotions associated with the trauma memory, and preventing the extinction of fear responses conditioned to internal or external trauma reminders (Foa & Rothbaum, 1998; Keane & Barlow, 2002; Resick & Schnicke, 1993). Strictly speaking, while patients with PTSD should be encouraged to socially share about their traumatic experiences to help recovery, they often keep the subject private, which can have the adverse effect of maintaining their symptoms.

Conceptually, it makes sense to hypothesize that trauma oriented social interactions with significant others are physiologically arousing for individuals with PTSD, yet, no empirical study has ever directly assessed this. Hence, doing so would contribute to our understanding of the links between avoidance, social support and PTSD. Moreover, these findings could contribute to treatment efficacy. For example, significant others who would be informed about the impact of a trauma oriented social interaction on anxious individuals' experiences would know how to approach trauma-related topics in daily living with their significant other.

Regarding physiological reactivity, individuals with PTSD have persistently showed increased sympathetic responses or reduced parasympathetic activity (Hopper, Spinazzola,

Simpson, & van der Kolk, 2006; Sack, Hopper, & Lamprecht, 2004) to both trauma-related cues and unconditioned stimuli (Lang & McTeague, 2009). A meta-analysis (Pole, 2007) revealed that individuals with PTSD displayed a greater physiological reactivity in their resting baseline, startle response, standardized trauma cue, and idiographic trauma compared to patients without PTSD. Across a number of measures, heart rate reactivity was one of the three most robust measures of physiological reactivity, showing a significant weighted mean effect size (ES; r = .18 to .27) across all study types (Pole, 2007). Finally, heart rate reactivity[1] has shown to be primarily and positively predicted by PTSD symptoms' intensity (Pole, 2006, 2007).

It is possible that individuals with PTSD may negatively appraise social situations, which could also lead to negative emotions, increased physiological responses, and avoidance (see Dunmore, Clark, & Ehlers, 1999; Ehlers & Clark, 2000). Talking about the trauma is usually avoided in part, and possibly because of the elicited arousal and the expected negative responses from the network. Hence in this case, social interactions involving support network members can also be a source of negative anticipations (see Laffaye, Cavella, Drescher, & Rosen, 2008). Although no study has ever explored the links between perceived social support and reactions to stress in a PTSD clinical sample, a myriad of findings from the general population has shown many associations between these variables. Indeed, perceived social support is associated with attenuated heart rate reactivity to controlled stressors, as measured in laboratory settings (*ES* = *.28*, see meta-analysis of (Uchino, Cacioppo, & Kiecolt-Glaser, 1996)).

Social support usually refers to positive and supportive social interactions (e.g., helping, encouraging, or caring). However, a growing number of researchers believe that negative, or countersupportive social interactions (e.g., criticizing, avoiding, yelling, blaming,

[1] As Cacioppo (1996, Allostatic Load Notebook page, para. 1) defines it, "heart rate reactivity refers to the mean increase in heart rate observed in response to a task or stressor".

or stigmatizing) form a distinct pattern of social support related to mental health (see Guay et al., 2011). For instance, the impact of countersupportive social interactions on psychological health appeared to be independent of the impact of supportive social interactions in a population of university students (Abbey, Abramis, & Caplan, 1985), and strong in a sample of individuals with PTSD (Ullman & Filipas, 2001). Thus, it seems compelling to study the relation between perceived supportive and countersupportive social interactions and heart rate reactivity, during a trauma oriented social interaction.

Perceptions of social interactions can act as moderators of individuals' physiological reactivity to stressors. However, this conclusion is based on studies using participants from the general population. The portrait may be more complex in a clinical sample of individuals with PTSD. Since anxious symptoms are primarily associated with physiological reactivity, it is hypothesized that perceived supportive and counter-supportive social interactions can moderate the primary link between symptoms of PTSD and physiological reactivity to stressors such as a trauma oriented social interaction with a significant other.

1.1. Goals & Hypotheses

Actual scientific knowledge of the effect of talking about psychological trauma with a significant other on heart rate reactivity in individuals with posttraumatic stress disorder is still in need of clarification. Although it makes sense to conceptualize talking about the trauma as physiologically arousing for individuals with PTSD, its effect has never been empirically verified. Specifically, the first goal of the present study was to assess the impact of a trauma oriented social interaction with a significant other on the general pattern of heart rate responses changes in participants with PTSD. The second aim was to evaluate if PTSD symptoms can predict heart rate reactivity during a trauma oriented social interaction with a significant other. Lastly, we wanted to examine perceived supportive and counter-supportive

social interactions with the significant other and the network as potential moderators of the link between PTSD symptoms and heart rate reactivity.

Based on existing conceptual models, previous studies and meta-analyses, we expected that (a) a trauma oriented social interaction with a significant other would elicit a significant increase in heart rate responses in a sample of individuals with PTSD, (b) an increase in physiological responses would be significantly predicted by individuals' PTSD symptoms, and (c) the relationship between PTSD symptoms and increased heart rate responses would be stronger for individuals who had lower perceived supportive social interactions or higher perceived counter-supportive social interactions.

2. Methods

2.1. Participants and Procedures

Participants were recruited by advertisements in newspapers and through referrals to the Trauma Study Centre by psychiatrists and other health practitioners in the Montreal (Canada) metropolitan area who knew about the study. The Trauma Study Centre is located in a large psychiatric hospital, and is well known in the mental health community for conducting research on PTSD. All participants had to present with PTSD as their primary diagnosis, and their spouse, or a significant other had given their consent to participate in the study. Exclusion criteria were (a) being less than 18 years old, (b) presence of a substance use disorder (abuse or dependence), and (c) past or present psychotic episode, bipolar disorder, eating disorder, somatoform disorder or organic mental disorder. Married participants and those currently involved in a couple relationship that had a history of conjugal violence with their actual partner were excluded, mainly to avoid exacerbating any domestic violence issues. Characteristics of the final sample are presented in Table 1.

2.2. Procedure

Upon arrival to the Trauma Study Center and after signing informed consent forms,

participants were interviewed and completed a battery of questionnaires. Participants were evaluated using the Structured Clinical Interview for DSM–IV (SCID; First, Spitzer, Gibbon, & Williams, 1996) which assesses psychiatric disorders, including PTSD. A research assistant who received extensive training in administering the SCID conducted all of the clinical interviews. The interview was also used to ensure that participants met all of the inclusion criteria. In addition to the clinical interview, participants were asked to complete questionnaires at home and return them at the next session, where they were invited to speak about their trauma while measuring their heart rates.

The study was approved by the local institutional ethic and scientific review board.

2.3. Instruments

2.3.1. The Modified PTSD Symptom Scale – Self-Report (MPSS-SR)

The MPSS-SR (Falsetti, Resnick, Resick, & Kilpatrick, 1993) is a 17-item self-report questionnaire assessing frequency and severity of PTSD symptoms. Symptoms correspond to those listed in DSM-IV (APA, 2000). The total score ranges from 0 to 119. The scale has demonstrated excellent internal consistency (alphas over .92; Falsetti et al., 1993) and good psychometric properties in clinical samples (Guay, Marchand, Iucci, & Martin, 2002).

2.3.2. The Social Provisions Scale (SPS)

The SPS (Cutrona & Russel, 1987) is a self-report questionnaire which evaluates perceived social support from the social network. It comprises 24 items measuring six dimensions of social support: attachment, tangible support, guidance, social integration, reassurance of worth and opportunity for nurturance. It has demonstrated very good internal consistency (alphas of .85 and .96) and test-retest reliability (r = .86) (Cutrona & Russel, 1987).

2.3.3. Questionnaire on Social support Behaviors in Anxious situations (QSBA)

The QSBA (Guay et al., 2011) is a 31-item self-report questionnaire that measures the

perceived frequency of supportive social interactions (QSBA-positive: 9 items) and counter-supportive social interactions (QSBA-negative: 22 items) with a significant other in anxiety-provoking situations. The average score for each item is calculated for each factor. The internal consistency for each factor is very good (alphas of 0.86 and 0.90) and test-retest reliability is moderate (correlations ranging from 0.56 to 0.69 over a four to five-month delay for a clinical sample, $n = 56$). Each factor also shows good convergent validity.

2.3.4. ECG recordings and data extraction

The raw electrocardiogram (ECG) signal was recorded from two bipolar tin electrodes placed on the chest, across both sides of the sternum, and a ground electrode placed on the left side of the abdomen derived from the standard Einthoven triangle. The signal was fed into a wireless bioelectric digital amplifier (CleveMed Medical Devices, Inc.: http://www.clevemed.com) with a band-pass between .10 to 30 Hz, digitized continuously at a sampling rate of 256 Hz. The wireless signal was transmitted via the Bioradio model 110 to a receiver connected to the USB 2.0 port of a Pentium PC. The *Bioradio Capture Lite*^{TM} software was used for recording the ECG signal. Thus, the raw signal was processed with g.RTanalyze software (Guger technologies, Graz, Austria: http://www.gtec.at) running on a MatLab/Simulink platform (version 7.0). Average heart rates were translated into beat-per-minute from the interbeat interval (in ms), calculated from an automatic R-wave peak detection for each period. Invalid samples, most likely due to movement artifact, were removed from the calculation after a visual inspection of each trial.

2.4. Physiological Reactivity

Heart rate responses were recorded during the second assessment session. First, information was sought about participants' general physical health and medical condition. After this brief interview, participants were seated on a chair in a neutral room with a small table. The apparatus consisted of a programmable wireless physiological monitor attached to

the participant's belt. In order to quantify arousal and activation, the average heart rate was recorded continuously across 4 periods. The first period (T1) consisted of a two minutes measure during which PTSD participants were instructed to sit still naturally, avoiding any effort. The second period (T2; control period) corresponded to the "neutral" part of the discussion, where PTSD participants and their significant other were instructed to discuss a non-anxious or non trauma-related topic for 10 minutes, where mean heart rate were captured. The third period (T3; trauma oriented discussion) consisted of an "active" 15 minutes discussion, where PTSD participants were invited to talk with their significant other about their trauma, its impact, how they cope with it, the social support they receive, and how they see the future. The partners or significant others were invited to behave as naturally as possible during the interaction. This third period was divided in three five minutes segments (T3a, T3b and T3c) in order to examine the evolution of heart rate responses in PTSD participants over the 15 minutes period of time. The last period (T4) consisted of a two minute long resting measure, during which participants were again instructed to sit still. Both first and second discussions were recorded on videotape. All participants conformed to instructions.

2.5. Data analysis

First, in order to assess changes in mean heart rate responses across periods and segments of the trauma oriented social interaction, two univariate general linear models repeated measures analysis of variance were respectively performed to test differences between (a) mean heart rate in T1, T2, T3, and T4 and (b) mean heart rate in T1, T2, T3a, T3b, and T3c, and T4. When indicated, post hoc tests were performed to identify significant differences and their magnitude. Physiological reactivity to trauma oriented social interaction referred to the main increase in heart responses from T2 (neutral discussion) to T3 (trauma oriented discussion), since the discussion theme was different between the two conditions. To

assess the additional potential error variance in heart rate associated with measurements collected when participants were engaged in the act of speaking, differences in proportions of verbal behavior expressed by individuals with PTSD between T3 and T2 were calculated. Then, correlation analyses were performed to assess if they were significantly associated with physiological reactivity and if they needed to be controlled for in subsequent regression models.

In order to determine if participants' characteristics needed to be controlled for in subsequent regression models, links between control variables and physiological reactivity indices as defined earlier were assessed. Student's t-tests or non-parametric comparison tests (depending on data distribution) were performed to verify differences on physiological reactivity indices between: (a) gender, (b) prescribed psychopharmacological medication or not, (c) currently smoking cigarette (versus not), (d) marital status (currently living in a relationship with a partner versus not), (e) type of trauma (interpersonal versus not), (f) presence versus absence of concurrent major depressive episode, and (g) presence versus absence of at least one different anxiety disorder other than PTSD. Correlation tests (i.e. Pearson's *r* or Spearman's rho, depending on data distribution) were also performed between physiological reactivity indices and respectively (a) age, (b) annual income, and (c) time since trauma.

To assess the relationship between PTSD and physiological reactivity to the trauma oriented social interaction, regression analyses were performed with physiological reactivity as the dependent variable and symptoms of PTSD, as measured by the MPSS-SR, as independent variables.

Finally, in order to examine if perceived supportive and counter-supportive social interactions acted as moderators of the relationship between PTSD symptom intensity and physiological reactivity to the trauma oriented social interaction, series of multiple

regressions were performed (see Baron & Kenny, 1986 for moderation tests). Indices of physiological reactivity to the trauma oriented social interaction were entered as the dependent variable and MPSS-SR (second block), and QSBA-positive, QSBA-negative or SPS (see Table 2; third block) were entered as independent variables. MPSS-SR, QSBA-positive, QSBA-negative, and SPS scores were centered prior to computing perceived supportive and counter-supportive social interaction x PTSD symptoms moderation scores (fourth block).

The alpha level was set at .05 for all analyses unless otherwise specified.

3. Results

Table 1 presents socio-demographic and clinical characteristics of the sample. Distribution of the time interval since trauma included one outlier (i.e. more than 3 standard deviations above the mean). For the analyses, this outlier was replaced by the value representing 3 deviations above the mean.

3.1. Heart rate responses changes between periods and within the trauma oriented social interaction

Due to the overall statistical significance of the first general linear model ($F = 24.28$, $p < .001$), post-hoc paired tests were conducted. Only mean heart rate in T4 appeared to be significantly different (i.e. lower) than T1, T2, and T3 means (see Table 2; Mean differences of 4.42 to 5.38, $p < .001$). Moreover, since there was overall statistical significance of the second model ($F = 14.19$, $p < .001$), post-hoc paired tests were conducted (see Figure 1 for an illustration). Mean heart rate in T3a appeared to significantly differ (i.e. by being higher) from all other periods (see Table 2 for the means; Mean differences of 1.72 to 7.10, $p < .01$). T3b was significantly lower than T3a (Mean difference of 1.72, $p < .01$) and significantly higher than T3c and T4 (Mean differences respectively of 1.67 and 5.39, $p < .01$). T3c was significantly lower than T2, T3a, and T3b (Mean differences respectively of 1.15, 3.39, and

1.67, $p < .05$). Mean heart rate in T4 was significantly lower than all others means (Mean differences of 3.71 to 7.10, $p < .001$).

Physiological reactivity to the trauma oriented social interaction was defined by the significant increase in mean heart rate from T2 to T3a (M = 2,24 ; SD = 4.93; from -5.10 to 22.33) and called [T3a-T2]. [T3a-T2] was also significantly associated with the difference between T3a and T2 on the proportion of verbal behavior expressed by individuals with a PTSD (r = .49, $p < .01$). This difference of proportion was controlled for in every subsequent regression analysis. Moreover, physiological reactivity was not associated to any of the control variables. Thus, none of these control variables needed to be included in subsequent regression analyses.

3.2. Links between PTSD symptoms and heart rate reactivity

MPSS-SR scores (see Table 2) positively and significantly predicted [T3a-T2] (β = .33, $p < .05$). Regarding the three clusters of the MPSS-SR, Avoidance and Re-experiencing were significantly associated with [T3a-T2] (respectively: β = .35, $p < .01$, β = .29, $p < .05$) but the Hyper-arousal dimension was not (β = .11, p = .44).

3.3. Perceived social interactions dimensions as potential moderators of the links between PTSD symptoms and heart rate reactivity

Regarding analyses of moderations, only (a) MPSS-SR x Guidance dimension of the SPS moderation (β = -.26, $p < .05$), (b) MPSS-$SR_{Hyper\text{-}arousal}$ x Opportunity for nurturance dimension of the SPS moderation (β = -.29, $p < .05$), and (c) MPSS-$SR_{Avoidance}$ x Guidance dimension of the SPS moderation (β = -.34, $p < .05$) scores revealed to be significantly associated with [T3a-T2].

3.4. Post-hoc analyses

Due to the lack of significant moderation implicating QSBA-negative, a regression analysis with only QSBA-positive and QSBA-negative in the same block was performed.

QSBA-positive did not show a statistical association with [T3a-T2] (β = .15, p = .37). However, QSBA-negative was associated with [T3a-T2] (β = .36, p < .05).

4. Discussion

Results of the current investigation revealed that a trauma oriented social interaction with a significant other triggered heart rate increases or reactivity in participants with PTSD. In addition, symptoms of PTSD positively predicted the participants' physiological reactivity, especially their symptoms of avoidance and re-experiencing. However, the factors that were hypothesized to act as potential moderators partially failed to reach statistical significance. Perceived supportive social interactions partially moderated the link between PTSD and physiological reactivity. Perceived counter-supportive social interactions with the significant other were associated by a main effect with this reactivity.

4.1. Heart rate responses changes between periods and within the trauma oriented social interaction

So far, no other study has explored physiological response changes associated with trauma oriented social interactions. Thus, our findings which show a significant increase in heart rate responses among individuals with PTSD during a trauma oriented social interaction magnify previous results of other studies linking trauma-related cues to increased sympathetic responses, as measured in laboratory settings (Pole, 2007). The three following patterns of results emerged regarding heart rate responses over time and periods: First, heart rate responses increased from the initial resting baseline period and the neutral discussion period to the first segment of the trauma oriented interaction period (i.e. [T3a]), the latter showing overall the highest heart rate responses. Second, heart rate responses consistently decreased over time in the trauma oriented discussion period. Third, among all periods, mean heart rate was the lowest in the final resting period. As predicted, the trauma oriented discussion seemed to be experienced as stressful and as a consequence, seemed to have

triggered the strongest physiological sympathetic responses. Interestingly, although PTSD patients were noticeably reactive at the beginning of the trauma oriented discussion, their arousal tended to decrease consistently over the 15 minutes period of this specific discussion. There are several potential explanations for this result. First, a habituation process may have developed, similar to that of a prolonged exposure exercise, in which individuals with PTSD become progressively less anxious. In order to confirm this hypothesis, a second trauma oriented discussion period with the same significant other showing a lower mean heart rate would be needed. Second, a decrease in focus on the topic of PTSD may have occurred, thus explaining the heart rate decrease over time in the 15 minutes trauma-related discussion. A qualitative analysis of the content of the discussion would allow us to explore this possibility. Third, the anticipation of an "escape" may have triggered a gradual decrease in heart rate as the end of the discussion approached. Finally, it could also simply be viewed as a typical recovery phase (see (Linden, Earle, Gerin, & Christenfeld, 1997) for a definition of *recovery*), during which a common drop in responses is experienced after a stressful task.

4.2. Links between PTSD symptoms and heart rate reactivity

Reviews of the literature (Pole, 2006, 2007) revealed that PTSD was a major variable associated with heart rate reactivity. The reported studies have used standardized designs with specific tasks but none addressed relationships between heart rate reactivity and PTSD, during a trauma oriented social interaction, a situation that is more representative of PTSD patients' daily living.

In line with previous studies and conceptualizations (Dunmore et al., 1999; Ehlers & Clark, 2000; Pole, 2006, 2007), the present study revealed that symptoms of PTSD, and especially avoidance and re-experiencing, were predictors of heart rate reactivity during trauma oriented social interactions. The more severe PTSD symptoms were in our sample, the stronger was the increase in heart rate responses. Just by talking about their trauma,

individuals with PTSD may anticipate either the reactivation of feared memories or being judged negatively by their significant other (Ehlers & Clark, 2000). These types of anticipation can be amplified by more severe PTSD reactions such as avoidance and re-experiencing, leading to stronger physiological reactivity in the context of a trauma oriented social interaction. Individuals with PTSD may fear the distress associated with intrusive and disturbing thoughts, which leads to avoidance of trauma-related stimuli and vice versa. The propensity to talk about the trauma in a social interaction is not only avoided because of the elicited arousal, but also because of the expected negative response from the network. For this reason, even if talking with supportive others can potentially help patients with PTSD, social interactions involving support network members can also be a source of stress (see Laffaye et al., 2008).

4.3. Perceived social interactions dimensions as potential moderators of the links between PTSD symptoms and heart rate reactivity

As expected, dimensions of perceived supportive social interactions moderated, although partially, the relationship between PTSD symptoms and changes in physiological responses triggered by the trauma oriented social interaction. However, perceived counter-supportive social interactions with the significant other seemed to be differently associated with physiological reactivity to trauma oriented social interaction. Specifically, individuals who perceived their significant other as more counter-supportive showed elevated physiological responses in a trauma oriented social interaction, regardless of the severity of their symptoms. These results also suggest that positive and negative dimensions of social interaction are independent dimensions to consider, at least in their prediction of physiological reactivity to trauma oriented social interactions.

Social support has been conceptualised as a moderator of PTSD symptoms once the disorder has developed (Joseph, Williams, & Yule, 1997; Williams & Joseph, 1999) while

PTSD has been conceptualised as being a factor of erosion of social support (King, Taft, King, Hammond, & Stone, 2006). The associations between social support and heart rate reactivity are thus far more complex in a clinical sample than in a non-clinical one. This is even more apparent in a social interaction task than it is when compared to a standardized task. For instance, Uchino et al. (1996) have conceptualized the presence of a supportive other as being associated with attenuated heart rate reactivity to a stressor. Although this conceptualisation helps us in drawing hypotheses for PTSD populations, the links are far more complex in a clinical sample with PTSD where daily, patients deal with symptoms of re-experiencing and motivation to avoid trauma-related stimuli. Since heart rate reactivity is intimately related to PTSD, the relationship between social support and physiological reactivity in a clinical sample is complex and needs new research designs. For instance, rather than using self-report measures, analysing *observed* dyadic processes of social support of the significant other while monitoring heart rate responses in PTSD patients in a trauma oriented social interaction, could lead to different results than those obtained in the current study.

4.4. Study limitations

First, perceived social support was evaluated by two self-administered questionnaires. Individuals' perceptions of support might not necessarily reflect actual support. Measures based on direct observation of significant others' verbal and non-verbal behaviors are more likely to supply information about social processes than a self-administered questionnaire (Wills & Shinar, 2000). Moreover, since the presence of a supportive other is associated with attenuated physiological reactivity to stressors in a laboratory (Uchino et al., 1996), coding observed overt support behaviors could help us define more clearly what is considered to be 'a supportive other'. Hence, it would be interesting to code overt support behaviors during the interaction, a dimension that can be more closely related in time to heart rate reactivity, in order to analyze if they are associated with physiological reactivity in the same interaction.

Second, a greater number of participants would have helped us to draw more definitive conclusions. For instance, social support might be found to interact with PTSD in the prediction of heart rate reactivity in a trauma related interaction. Considering the large number of variables that have an impact on physiological reactivity, larger samples with multivariate covariance analyses would help us to draw a more precise portrait of the determinants of physiological reactivity in a stressful situation. Also, a number of the variables examined seemed to be interconnected. A longitudinal design would help us to clarify the portrait of causality.

In future studies, the effect of other potential moderators on the links between PTSD and heart rate reactivity such as comorbidity, especially anxious disorder comorbidity such as social phobia and trauma recurrence (McTeague et al., 2009) could be assessed. Indeed, anxious disorders such as social phobia have been linked with specific patterns of heart rate reactivity (see McTeague et al., 2009).

4.5. Clinical implications

A representative measure of daily living was used in this study and thus, our results can inform interventions for individuals with PTSD since we now have a better understanding of the impact of a trauma oriented social interaction with a significant other. Specifically, our findings highlight the importance of considering both the intensity of PTSD symptoms as well as the nature of perceived social support, by recognizing its impact on the anxious individual's physiological experience, and by guiding what specific dimensions of social support need to be promoted.

4.6. Conclusion

This study shows that there are links between PTSD symptoms and elevations in heart rate responses in the context of a trauma oriented social interaction with a significant other. It also shows that PTSD symptoms and perceived supportive and counter-supportive social

interactions can actually predict this heart rate reactivity. In the future, longitudinal designs could be used to give a more precise portrait of the directions of the links explored here.

Finally, compelling evidence might have risen if we had planned a period where PTSD participants had the same trauma oriented interaction but this time, with someone unknown to them, (for instance, a mental health professional) in order to separate the effect of a significant other and trauma topic on heart rate reactivity.

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