

**[post-print version]**

**Title:** Trauma following TOPFA: Is this the path from guilt to grief?

**Running head:** The role of post-TOPFA guilt in trauma and grief

Bárbara Nazaré, Ana Fonseca, and Maria Cristina Canavarro

Faculty of Psychology and Educational Sciences, University of Coimbra, Portugal

**Author bios:**

Bárbara Nazaré – Bárbara Nazaré is a Ph. D. student in Health Psychology at Faculty of Psychology and Educational Sciences, University of Coimbra, Portugal. As a clinical psychologist, she is a collaborator of the Unit of Psychological Intervention of Maternity Doctor Daniel de Matos, Hospitais da Universidade de Coimbra, Portugal.

Ana Fonseca – Ana Fonseca is a Ph. D. student in Clinical Psychology at Faculty of Psychology and Educational Sciences, University of Coimbra, Portugal. As a clinical psychologist, she is a collaborator of the Unit of Psychological Intervention of Maternity Doctor Daniel de Matos, Hospitais da Universidade de Coimbra, Portugal.

Maria Cristina Canavarro – Maria Cristina Canavarro is a full professor at Faculty of Psychology and Educational Sciences, University of Coimbra, Portugal. She is also the coordinator of the Unit of Psychological Intervention of Maternity Doctor Daniel de Matos, Hospitais da Universidade de Coimbra, Portugal.

**Full address for correspondence:**

Bárbara Nazaré

Faculdade de Psicologia e Ciências da Educação

Rua do Colégio Novo, Apartado 6153, 3001-802 Coimbra, Portugal

Email: abarbaravn@gmail.com

Telephone number: 00351964126808

### **Acknowledgements**

This study is part of the “Reproductive decisions and transition to parenthood following a pre- or postnatal diagnosis of fetal abnormality” research project, integrated in the Relationships, Development & Health Research Group of the R&D Unit Institute of Cognitive Psychology, Vocational and Social Development of the University of Coimbra (Pest-OE/PSI/UI0192/2011). Bárbara Nazaré and Ana Fonseca are supported by PhD Scholarships from the Portuguese Foundation for Science and Technology (SFRH/BD/43204/2008, SFRH/BD/47053/2008, respectively).

### **Reference**

Nazaré, Fonseca, A., & Canavarro, M. C. (2014). Trauma following TOPFA: Is this the path from guilt to grief? *Journal of Loss and Trauma, 19*, 244-261. doi:10.1080/15325024.2012.743335

**Abstract**

Termination of pregnancy for fetal abnormality (TOPFA) is a potentially traumatic event that may lead to intense grief symptomatology. The present study included 41 couples who were assessed 1-6 months after TOPFA. No gender differences were found regarding the intensity of trauma symptomatology or the prevalence of clinically relevant trauma symptomatology, present in about a third of the sample. Most couples were congruent regarding trauma symptomatology. Women experienced guilt with significantly more frequency than men. For both genders, guilt influenced both trauma and grief symptomatology. For women only, guilt influenced grief symptomatology indirectly, through trauma symptomatology. Clinical implications are discussed.

When individual assumptions or expectations are shattered following an event, it is considered traumatic (Janoff-Bulman, 1992). This seems to be the case for termination of pregnancy for fetal abnormality (TOPFA), which is often associated with several “broken expectations” (Larsson, Svalenius, Lundqvist, & Dykes, 2010, p. 6). First, it is anticipated that a healthy baby will be born (Lalor, Begley, & Galavan, 2009; McCoyd, 2007; Sommerseth & Sundby, 2010), a rather pervasive pregnancy-related “mythic expectation” (McCoyd, 2007, p. 38). Consequently, a prenatal diagnosis of fetal abnormality is often an unexpected event (Kersting et al., 2005), resulting in emotional responses such as shock and incredulity (Desrochers, 2011; Lalor et al., 2009; Larsson et al., 2010). Second, having an active role in determining the end of a wanted pregnancy may conflict with one’s values and beliefs, with many women never having imagined making such a definitive decision (Kersting et al., 2005; McCoyd, 2007; White-Van Mourik, Connor, & Ferguson-Smith, 1992) and experiencing it as agonizing (Rillstone & Hutchinson, 2001). Third, as losing a child contradicts the natural order of life, most parents expect their children to die after themselves (Callister, 2006). Therefore, the death of a child is usually seen as senseless and leads to a crisis of meaning (Wheeler, 2001).

Traumatic symptoms such as denial, numbing, or intrusion are expected reactions following a stressful event. To a certain degree, these reactions constitute an adaptive attempt to regain control, as individuals oscillate between avoiding an overwhelming shock and processing the event-related information, in order to start making sense of it (Horowitz as cited in Rando, 1993; Janoff-Bulman, 1992; Park, 2008). Although the traumatic impact of an event is mostly determined by one’s appraisal of it, several characteristics (e.g., being atypical, sudden, unexpected, directly experienced, and irreversible) make it more likely to have such an effect (Janoff-Bulman, 1992; Tedeschi & Calhoun, 1995). Such distinctive features are usually applicable to the TOPFA experience. Consistently, in the first six months post-loss studies have shown the prevalence of clinically relevant trauma symptomatology (i.e. scores above the cut-off point, indicating the possible existence of pathological trauma reactions) to vary between 22.20% and 67.00% for women (Davies, Gledhill, McFayden, Whitlow, & Economides, 2005;

Kersting et al., 2009; Korenromp, Page-Christiaens, van den Bout, Mulder, & Visser, 2009), with 8.00% being diagnosed with a stress-related disorder after two weeks, a number which decreases to 2.10% after six months (Kersting et al., 2007).

While only women were considered in most studies (e.g., Davies et al., 2005; Kersting et al., 2005, 2007; Korenromp et al., 2009), it is important to adopt a couple-based approach when assessing the short-term traumatic impact of TOPFA. As this is usually a decision shared by the couple which leads to both members losing a child (Korenromp et al., 2007), women and men simultaneously deal with a potentially traumatic event (i.e. dual trauma couples, Balcom, 1996). Consistently, Korenromp (2006) found that in 16.90% of the couples, there was congruence regarding the prevalence of clinically relevant trauma symptomatology (that is, it was displayed by both members of the couple) four months after TOPFA. To our knowledge, this was the only investigation in which the two members of the couple were compared; gender differences were found, with women displaying clinically relevant trauma symptomatology more frequently than their partners (44.90% versus 19.10%), four months after TOPFA. The physical experience of the loss has been acknowledged as adding to the traumatic impact of TOPFA (Kersting et al., 2005), which may explain these results.

It is also possible that such gender differences are due to guilt, which women are particularly prone to report following TOPFA (Geerinck-Vercammen & Kanhai, 2003; Korenromp, Iedema-Kuiper, van Spijker, Christiaens, & Bergsma, 1992; White-Van et al., 1992). Guilt is experienced when individuals perceive themselves as responsible for a negative outcome for others and/or to have violated their own standards or values (Lee, Scragg, & Turner, 2001). Therefore, guilt is particularly likely following events: a) resulting in harm; b) causing irreparable consequences; c) affecting close persons; d) which are unexpected; e) which are caused by humans; f) in which all available actions would have negative consequences; and g) which result in being blamed by others (Kubany & Watson, 2003). As such characteristics may apply to TOPFA, it is understandable that guilt following this experience is common in both partners (Geerinck-Vercammen & Kanhai, 2003; Korenromp et al., 1992; White-Van et al.,

1992), mostly for undertaking a decision that usually conflicts with personal and/or societal values (Korenromp et al., 1992; McCoyd, 2007; White-Van Mourik et al., 1992).

Guilt-related appraisals regarding one's role in the event (e.g. "I should not have done this") evoke negative affect and are paired with images and/or thoughts of the trauma, which become associated with distress (Kubany & Watson, 2002). Although corrective action leads to a decrease in guilt, that is not possible in the context of loss, which is irreparable (Kubany & Watson, 2003). Therefore, individuals may engage in rumination, trying to find different courses of action they could have taken; this prevents the emotional processing of the event (Lee et al., 2001) and results in intrusive memories (Paunovic, 1998). In parallel, individuals may avoid trauma reminders, in order to escape painful feelings (Kubany & Ralston, 2006). Consequently, the severity of trauma reactions tends to increase when guilt is present (Kubany et al., 1996; Kubany & Ralston, 2006). Guilt has also been identified as a "mediator of mourning" (Worden, 2008, p. 62), leading to difficulties in the grief process whenever the loss is perceived as preventable (Rando, 1993; Worden, 2008). By influencing trauma symptomatology, guilt may also indirectly affect grief symptomatology, as the traumatic impact of TOPFA may be an obstacle to an adaptive grief process. It has been argued that there is greater disruption when the loss is inconsistent with one's assumptions, so that a decrease in distress is dependent upon finding new meanings for the event that help making sense of it (Gillies & Neimeyer, 2006; Park, 2008; Rando, 1993; Worden, 2008). Consistently, the ability to make sense of the loss was found to be the most salient predictor of parental grief, with parents who were unable to make sense of their child's death being more prone to display Complicated Grief symptoms (Keesee, Currier, & Neimeyer, 2008). To our knowledge, the relationships between guilt, trauma symptomatology, and grief symptomatology following TOPFA have not been explored yet.

Our study aimed to: (1) compare women and men in the first six months following TOPFA regarding: a) the intensity of trauma symptomatology; b) the prevalence of clinically relevant trauma symptomatology (assessing couple congruence regarding this variable); and c) the frequency of guilt; and (2) explore the direct and indirect (via trauma symptomatology)

influences of guilt on grief symptomatology for women and men. Considering the literature review, it is hypothesized that: (1) women will display more intense trauma symptomatology, a higher prevalence of clinically relevant trauma symptomatology, and more frequent guilt than men; and (2) more frequent guilt will lead to more intense trauma symptomatology and grief symptomatology for both genders.

## **Methods**

### *Procedure*

This study is part of an ongoing longitudinal investigation entitled “Reproductive decisions and transition to parenthood following a pre- or postnatal diagnosis of fetal abnormality”, which was approved by the Ethics Committee of Hospitais da Universidade de Coimbra, Portugal. Inclusion criteria included having terminated a pregnancy due to fetal abnormality one to six months earlier, being 18 years or older, and having a level of literacy that allowed the comprehension of the assessment protocol. From September 2009 to April 2012, all women who filled the inclusion criteria were contacted by telephone by the researchers (consecutive sampling), and the study goals were presented. Women who accepted to participate were mailed an informed consent for signing and two versions of the questionnaires (their own and the one for their partners), and were told that both spouses should complete the questionnaires separately and return it in a pre-stamped envelope provided by the researchers. Regardless of participation in the study, psychological counseling was available to all couples.

Seventy-three couples were contacted, from which seven (9.59%) refused to participate, and 17 (23.29%) did not return the questionnaires. Of the remaining 49 (67.12%), only those in which both partners answered the questionnaires were considered ( $n = 41$ ; participation rate: 56.16%).

### *Participants*

The sample consisted of 41 cohabitating couples with a mean relationship length of 7.02 years ( $SD = 4.77$ ). Women ( $M = 31.88$ ,  $SD = 4.59$ ) were significantly younger ( $t_{40} = -5.49$ ,  $p < .001$ ) than men ( $M = 34.83$ ,  $SD = 5.69$ ). Regarding educational level, women ( $M = 13.34$  years,  $SD = 4.15$ ) studied for longer ( $t_{40} = 2.90$ ,  $p = .006$ ) than their partners ( $M = 11.71$  years,  $SD = 3.86$ ). The majority of the participants were currently employed (90.24% of women and 95.12% of men). This was the first pregnancy for 20 (48.78%) women. Chromosomopathy was the most common diagnosis ( $n = 18$ , 43.90%). The decision to terminate the pregnancy was shared by all couples and TOPFA occurred approximately at 20.29 weeks gestation ( $SD = 4.76$ ). Couples answered the questionnaires on average 2.17 months ( $SD = 0.86$ ) after TOPFA.

### *Measures*

Impact of Event Scale – Revised (IES-R; Weiss, 2004; Portuguese version: Castanheira et al., 2012): This 22-item measure assesses the intensity of the stress response to a specific event. Answers are based on a 5-point Likert scale ranging from 0 (*Not at all*) to 4 (*Extremely*), with higher scores indicating more intense trauma symptomatology. It is comprised of three factors: Intrusion (intense thoughts, images, and feelings associated with the event), Avoidance (individual efforts not to think or talk about the event or not to be affected by it), and Hyperarousal (symptoms such as irritability, hypervigilance, and difficulty concentrating). In this sample, Cronbach alphas varied between .75 (Avoidance) and .86 (Intrusion) for women, and .81 (Avoidance) and .88 (Hyperarousal) for men. To identify clinically relevant trauma symptomatology, a cut-off score of 1.5 in the total scale was considered (Creamer, Bell, & Failla, 2003).

Guilt - Assessed with the question “Since you decided to terminate the pregnancy, how frequently have you experienced guilt?”, which was answered on a visual analogical scale (ranging from 0 – *Never* – to 100 – *Very often*). In the present study, this measure was significantly correlated with the Self-Blame subscale of the Brief COPE (Carver, 1997; Portuguese version: Pais Ribeiro & Rodrigues, 2004) for both women ( $r = .75$ ) and men ( $r = .47$ ).

Participants were classified as never having felt guilt (if they scored 0) or as having felt guilt at least once (if they scored 1 or higher).

Perinatal Grief Scale (PGS; Toedter, Lasker, & Janssen, 2001; Portuguese version: Rocha, 2004): This 33-item measure assesses thoughts and feelings associated with a perinatal loss. Answers are based on a 5-point Likert scale ranging from 1 (*Strongly agree*) to 5 (*Strongly disagree*), with higher scores indicating more intense grief symptomatology. It is comprised of three factors: Active Grief (normative grief manifestations such as crying, sadness, and missing the baby), Difficulty Coping (difficulty performing usual activities and relating to others), and Despair (feelings of hopelessness and worthlessness). Only the total score ( $\alpha = .96$  for women and  $\alpha = .95$  for men) was used in the present study.

Sociodemographic (age; educational level; professional status; marital status; relationship length) and clinical data (number of previous pregnancies; type of diagnosis; gestational age at TOPFA; time since TOPFA; decision-sharing by the couple) were collected.

### **Data analysis**

All data analysis was carried out on the Statistical Package for the Social Sciences, version 17.0. The Preacher and Hayes' (2008) SPSS macro was used for mediation analyses. Missing data on the IES-R and the PGS were handled by case mean substitution (Fox-Wasylyshyn & El-Masri, 2005) as they were random and low level (< 5%).

Gender comparison analyses on continuous variables (i.e. trauma symptomatology, guilt) were performed using the couple as a unit. The database was restructured in order to consider each couple as the subject of the analysis and each partner score as a different variable. Gender comparisons in the intensity of trauma symptomatology were explored with a repeated-measures MANOVA (effect sizes are presented - small:  $\eta^2 \geq .01$ , medium:  $\eta^2 \geq .06$ , large:  $\eta^2 \geq .14$ ; Volker, 2006). Post hoc power calculations made for this analysis performed with a significance level of .05 and power  $\geq .80$  indicated that only medium to large effects could be detected (Faul, Erdfelder, Lang, & Buchner, 2007). Gender differences in the prevalence of clinically

relevant trauma symptomatology and in guilt categories (never having felt guilt vs. having felt guilt at least once) were explored with chi-squared tests (effect sizes are presented - small:  $\phi \geq .10$ , medium:  $\phi \geq .30$ , large:  $\phi \geq .50$ ; Volker, 2006). Congruence was defined as both members of the couple presenting the same category of trauma symptomatology (i.e. clinically relevant or not clinically relevant). A paired samples Student's *t* test was used to compare women and men regarding guilt frequency (effect sizes are presented - small:  $r \geq .10$ , medium:  $r \geq .30$ , large:  $r \geq .50$ ; Volker, 2006).

Pearson correlations between trauma symptomatology and grief symptomatology were calculated. We aimed to assess: the influence of guilt on trauma symptomatology (path *a*); the influence of trauma symptomatology on grief symptomatology, controlling for guilt (path *b*); the total effect of guilt on grief symptomatology (path *c*); and the influence of guilt on grief symptomatology controlling for trauma symptomatology (path *c'*; see Figure 1). Due to the non-independence of the two members of the couple (Kenny, Kashy, & Cook, 2006), separate analyses were run for women and men. In order to demonstrate a mediation effect, two conditions should be met: a) there must be an effect to be mediated (i.e.  $c \neq 0$ ); and b) the indirect effect must be statistically significant (Preacher & Hayes, 2004). The variables were standardized and a bootstrap mediation analysis was used ( $N = 5000$  samples), with bias corrected and accelerated confidence intervals (CI). This non-parametric approach is suited to small samples ( $> 25$ ), as no assumptions are made regarding the shape of the distribution of the variables. The indirect effect (path *a* x path *b*, that is, the difference between the total effect and the direct effect) is estimated in each of the 5000 data sets, resulting in a sampling distribution which will be the base to construct CI for the indirect effect. An indirect effect is found when zero is not included in the bootstrapped 95% CI of the point estimate (Preacher & Hayes, 2004, 2008). Gestational age at TOPFA, time since TOPFA, and parity were controlled for.

## Results

(Table 1 about here)

No main effect of gender on the intensity of trauma symptomatology was found (Pillai's Trace = .05,  $F_{3,38} = 0.62$ ,  $p = .608$ ,  $\eta^2 = .05$ ; see descriptives in Table 1). There were also no gender differences (women:  $n = 14$ , 34.15% vs. men:  $n = 12$ , 29.27%;  $\chi^2 = 0.23$ ,  $p = .635$ ,  $\phi = .05$ ) regarding the prevalence of clinically relevant trauma symptomatology. Congruence regarding trauma symptomatology was found for most couples ( $n = 25$ , 60.98%). Among those, 20 (48.78% of the total sample) had non-clinical levels of trauma symptomatology, whereas in five (12.20% of the total sample) both members presented clinically relevant trauma symptomatology. In the remaining 16, only men had clinically relevant trauma symptomatology in seven (17.07% of the total sample) couples, while nine (21.95% of the total sample) women presented clinically relevant trauma symptomatology whereas their partners did not. Although most women ( $n = 22$ , 56.40%) had felt guilt at least once, the percentage of men ( $n = 13$ , 32.50%) ever experiencing guilt was significantly lower ( $\chi^2 = 4.56$ ,  $p = .032$ ,  $\phi = .24$ ). Furthermore, women displayed guilt with a significantly higher frequency ( $t_{37} = 2.96$ ,  $p = .005$ ,  $r = .44$ ) than men (see Table 1).

(Figure 1 about here)

For both women and men, guilt was found to predict trauma symptomatology, that is, the higher the frequency with which individuals experienced guilt, the more intense their trauma symptomatology was (see Figure 1). Moreover, trauma symptomatology positively predicted grief symptomatology for both genders (see Figure 1). Although guilt was found to have a direct effect on grief symptomatology for both women and men (see Figure 1), indirect effects emerged for women only. Specifically, guilt was found to influence women's grief symptomatology through trauma symptomatology (point estimate = 0.36, CI = 0.13/0.62). The influence of gestational age on grief symptomatology was marginally significant ( $B = 0.91$ ,  $SE = 0.52$ ,  $\beta = .17$ ,  $t = 1.74$ ,  $p = .091$ ). The model was significant ( $R^2 = .74$ ,  $F_{5,33} = 18.60$ ,  $p < .001$ ). Regarding men, no indirect effects were found (point estimate = 0.11, CI = -0.02/0.44). None of the covariates was found to significantly influence men's grief symptomatology. The model was significant ( $R^2 = .34$ ,  $F_{5,34} = 3.54$ ,  $p = .011$ ).

## Discussion

The present study has several strengths which make it an important contribution to the current state of the art. First, our sample included men, who have been seldom considered in studies on TOPFA, in spite of both members simultaneously experiencing this potentially traumatic event (i.e. dual trauma couples, Balcom, 1996). Furthermore, we explored several effects which, to our knowledge, have not been assessed before in the context of TOPFA – namely, the influence of guilt on trauma symptomatology, the influence of trauma symptomatology on grief symptomatology, and the direct and indirect (via trauma symptomatology) influences of guilt on grief symptomatology.

Our study showed that about a third of the women presented clinically relevant trauma symptomatology. Although this proportion underscores the pervasiveness of the traumatic impact of TOPFA, other studies reported higher prevalences (67.00% and 50.00%, Davies et al., 2005; 63.90%, Kersting et al., 2009; 45.80%, Korenromp et al., 2009). We believe these disparities to be due to different assessment times (two weeks and six months after TOPFA, Davies et al., 2005; two weeks after TOPFA, Kersting et al., 2009; four months after TOPFA, Korenromp et al., 2009) and different criteria when defining clinically relevant responses (total IES scores > 18, Davies et al., 2005, or  $\geq 26$ , Korenromp et al., 2009; IES subscale scores > 19, Kersting et al., 2009). This may also explain the prevalence of clinically relevant trauma symptomatology in men (29.27%), which was higher than that of the only study we found including both members of the couple (19.10%, four months after TOPFA; Korenromp, 2006).

The elevated prevalence of clinically relevant trauma symptomatology following TOPFA in both genders may underscore the fact that this event often conflicts with nuclear individual assumptions which need to be revised in order for the event to be processed (Janoff-Bulman, 1992). Consistently, several studies have shown that pregnancy-related expectations which are incongruent with TOPFA tend to be endorsed by the majority of the couples (Lalor et al., 2009; McCoyd, 2007; Sommerseth & Sundby, 2010). Furthermore, individuals are exposed to a

sudden, irreversible, and atypical event resulting in the death of their child. An event with such characteristics is particularly likely to induce trauma symptomatology (Tedeschi & Calhoun, 1995).

To our knowledge, only one study (Korenromp, 2006) considered couple congruence regarding the prevalence of clinically relevant trauma symptomatology after TOPFA. Data provided by this investigation (16.90%, four months after TOPFA) is similar to ours (12.20%). Furthermore, almost half of the couples in our sample congruently presented non-clinical levels of trauma symptomatology. The fact that most couples presented congruent reactions (either clinically relevant or not) is in accordance with the fact that no gender differences were found regarding the prevalence and intensity of trauma symptomatology. However, these results are inconsistent with those of the only previous study that, to our knowledge, explored such gender differences, which showed the prevalence of clinically relevant trauma symptomatology to be higher among women (Korenromp, 2006).

Although only medium to large effects could be found in our study, and so the possibility remains that there were gender differences which we were not able to detect, there are several commonalities between the two members of the couple (Kenny et al., 2006) which may explain their similar levels of trauma symptomatology. First, both of them are concomitantly exposed to the same event (Balcom, 1996). Second, couples may be particularly likely to share expectations and assumptions, as similar worldviews tend to foster attraction among individuals (Regan, 2011). As one's appraisal of an event is the main determinant of one's reactions to it (Tedeschi & Calhoun, 1995), it is understandable that more similar interpretations would lead to more similar responses. Third, there is a process of mutual influence between the members of the couple, such that one's reactions influence the other. The fact that the decision was shared by all the couples in our sample may indicate that they are particularly likely to express their thoughts and feelings to each other, thus promoting the non-independence of their reactions (Kenny et al., 2006).

On the other hand, gender differences emerged regarding the experience of guilt. Consistently with our results, 68% of women and 22% of men were found to experience guilt at least once following the loss, in a study assessing the frequency of guilt in the first 24 months after TOPFA (White-Van et al., 1992). Despite such feelings also being expressed by men (Desrochers, 2011), women's proneness to feel guilt more frequently than their partners is consistent across studies (Geerinck-Vercammen & Kanhai, 2003; Korenromp et al., 1992; White-Van et al., 1992). Although such feelings may arise due to having chosen the death of the baby (Korenromp et al., 1992; McCoyd, 2007; White-Van Mourik et al., 1992), they were found to be present even when the fetal abnormality is incompatible with life (Costa, Hardy, Osis, & Faúndes, 2005). Moreover, couples were shown to display guilt even when believing that the right decision was made (White-Van et al., 1992), blaming themselves for not being the type of person who would choose to parent a child with an abnormality (McCoyd, 2008). There is a social expectation that parents should protect and take care of their children (Worden, 2008), a role which, traditionally, has been more central to women's than men's identity (Jaffe & Diamond, 2011). Considering this, it is understandable that women may feel more guilt than men.

Previous studies focusing on different types of potentially traumatic events have found guilt to be positively associated with trauma symptomatology (Kubany et al., 1996; Kubany & Ralston, 2006). Our data were consistent with such investigations, as guilt following TOPFA was found to predict trauma symptomatology for both women and men. As couples have an active role in determining the end of the pregnancy, they may be particularly prone to perceive themselves as responsible for the loss of the baby, which may result in negative affect (Kubany & Watson, 2002). Given that the loss is irreparable, it is not possible to undertake corrective action (Kubany & Watson, 2003). Therefore, individuals may engage in intense rumination regarding alternative actions which could have been taken, leading to an increase in intrusive memories (Paunovic, 1998). By thinking that something could have been done to prevent the event, individuals may be unable to accept its occurrence (Monson & Fredman, 2012). On the

other hand, they may avoid trauma reminders, in order to escape distress (Kubany & Ralston, 2006). As such, both of these mechanisms result in more intense trauma symptomatology.

Trauma symptomatology, in turn, was found to influence grief symptomatology in both genders. Although these two types of symptomatology share several behavioral features (Worden, 2008), they are seen as different reactions to specific stressors - while trauma symptomatology is associated with the characteristics of the loss (e.g. unexpected, shocking), grief symptomatology is linked with the relationship that was lost (Raphael, Martinek, & Wooding, 2004; Stroebe, Schut, & Finkenauer, 2001). Consistently with those differences, the IES-R, which was used in our study to assess trauma symptomatology, does not focus on the pathognomonic phenomena of grief (i.e. yearning, longing, and pining; Raphael et al., 2004). The specificities of TOPFA make it an event likely to result in both trauma symptomatology and grief symptomatology, given that a death occurs in “highly impactful circumstances, those that are not a universal, inevitable part of normal life” (Stroebe et al., 2001, p. 189). Therefore, the two measures were expected to be somewhat correlated. Nevertheless, our results are consistent with several theories of grief adaptation which postulate that, in order to be able to accept the loss, people have to find meaning in the event, so that it is congruent with their assumptions (Rando, 1993; Worden, 2008). The existence of traumatic symptoms signals that the processing of the event has not been completed yet (Horowitz as cited in Rando, 1993; Janoff-Bulman, 1992). As such, for these individuals, the loss may be particularly difficult to deal with, resulting in more grief symptomatology (Park, 2008).

Finally, guilt was found to influence grief symptomatology. It has been noted that guilt-related beliefs may not allow individuals to work through their grief (Kubany & Manke, 1995), as several necessary processes (e.g. experiencing and accepting the pain of loss, revising the assumptive world, and reinvesting in other relationships and activities) may be impeded (Rando, 1993). For women, part of the influence of guilt on grief symptomatology appears to be explained by trauma symptomatology. Although it is possible that the power of our study did not allow us to identify such effect for men, this result may also show that trauma

symptomatology has different sources for women and men. Considering that there were no differences in the intensity of their trauma symptomatology, while differences were found in guilt frequency, it is possible that, for men, trauma symptomatology results from the incongruence between the event and schemas regarding the world (e.g., “The world is just” Janoff-Bulman, 1992), while, for women, the incongruence between one’s role in the event and schemas about the self (e.g., “I’m a good person”, Janoff-Bulman, 1992) may be particularly relevant. It is also possible that men’s trauma symptomatology results from retraumatization, that is, from the influence of their partners’ symptomatology (Balcom, 1996). Further studies are needed to explore these hypotheses.

Several clinical implications derive from our results. Regarding assessment, the short-term traumatic impact of TOPFA should be measured in both members of the couple, for various reasons. First, TOPFA is associated with a rather high prevalence of clinically relevant trauma symptomatology in both genders. Whether or not couples display congruent reactions, specific clinical approaches may be necessary. On the one hand, when one or both members display clinically relevant trauma symptomatology, interpersonal problems may emerge, such as difficulties in communication, problem solving, or conflict resolution (Balcom, 1996; Monson & Fredman, 2012). On the other hand, trauma responses may be transmissible, so that there is potential for retraumatization when one partner displays trauma symptomatology and the other does not (Balcom, 1996). Second, it has been shown that, although trauma symptomatology tends to decrease with time (Kersting et al., 2007; Korenromp et al., 2009), the presence of short-term symptomatology is the best predictor of medium-term symptomatology (for instance, 32.8% of women presenting clinically relevant symptoms four months after the loss still presented it eight and 16 months after TOPFA; Korenromp et al., 2009). This may be due to the fact that people who have difficulty finding meaning for the loss in the first few weeks after the event are more likely to continue unable to find meaning even after several months (Davis, Wortman, Lehman, & Silver, 2000). As couples may refrain from sharing their decision to terminate the pregnancy with their social network, out of fear of being criticized (Desrochers,

2011; McCoyd, 2007), they may not have the opportunity to consider alternative perspectives regarding TOPFA or receive social support, which may hinder the processing of the event.

Regarding intervention, it should be noted that, although these couples are dealing with the death of their baby, clinical interventions may benefit from focusing on guilt and trauma symptomatology before addressing grief symptomatology. As the persistence of trauma-related distress may be explained by guilt-associated beliefs, Kubany and Manke (1995) developed an intervention program focusing on guilt, which was found to lead to a decrease in post-traumatic stress disorder symptomatology (Kubany & Ralston, 2006). As previously mentioned, guilt may also be an obstacle to the grieving process (Kubany & Manke, 1995; Rando, 1993). Therefore, addressing guilt may be necessary before focusing on grief symptomatology. Regarding TOPFA, decreasing guilt may be a particularly challenging aim, as not only the couple has an active role in the decision-making leading to the baby's death (Rando, 1993), but also the loss is irreparable (Kubany & Watson, 2003). Considering this, clinical interventions should foster acceptance and forgiveness (Gray & Lassance, 2003; Monson & Fredman, 2012). The co-occurrence of trauma and grief symptomatology is considered a burden leading to complications in the grieving process (Raphael et al., 2004; Stroebe et al., 2001). As it is necessary for grieving people to adopt beliefs and assumptions that allow the incorporation of the loss, it may be necessary to address trauma symptomatology before focusing on grief symptomatology (Rando, 1993; Worden 2008). As previously mentioned, a couple-based approach, such as the conjoint therapy protocol developed by Monson and Fredman (2012) for couples dealing with potentially traumatic events, may be particularly effective. This intervention program has already been used with couples dealing with stillbirth (Brown-Bowers, Fredman, Wanklyn, & Monson, 2012).

Some limitations of our study should be acknowledged. First, given our small sample, effects concerning the relationships between the study variables may exist, which we were not able to detect. Second, the cross-sectional design of our study may be insufficient in order to fully capture the influence of guilt on trauma symptomatology and grief symptomatology. Future studies should replicate these findings using a longitudinal design. Third, some women

refused to participate in the study stating that it was too difficult for them to share feelings or thoughts regarding the event. As such, individuals with difficulty dealing with TOPFA may be underrepresented in our sample, which limits the generalization of our findings. However, it should be noted that women's (67.12%) and men's (56.16%) participation rates in our study were similar to previous studies with individuals coping with TOPFA (women: 72.30%, Korenromp et al., 2009; men: 56.30%; Korenromp et al., 2007). Fourth, the criterion we adopted to identify clinically relevant trauma symptomatology, although having been used before (Creamer et al., 2003), is far from consensual. As previously mentioned, several different cut-off points have been defined in previous studies (based on the previous 15-item version of the IES, Davies et al., 2005; Korenromp et al., 2009; or on the scoring of the subscales, instead of the total scale, Kersting et al., 2009), which may impact the results. At last, guilt was assessed with a visual analogical scale. However, although this measure has not been validated, its face validity, along with the positive correlations with the subscale Self-Blame of the Brief COPE, indicate that it is adequate.

In short, our work underlines the need to assess both members of the couple following TOPFA, considering the prevalence of guilt and trauma symptomatology in both women and men which, in turn, may be an obstacle to an adaptive grief process.

## References

- Balcom, D. (1996). The interpersonal dynamics and treatment of dual trauma couples. *Journal of Marital and Family Therapy*, 22, 431-442. doi:10.1111/j.1752-0606.1996.tb00218.x
- Brown-Bowers, A., Fredman, S. J., Wanklyn, S. G., & Monson, C. M. (2012). Cognitive-behavioral conjoint therapy for posttraumatic stress disorder: Application to a couple's shared traumatic experience. *Journal of Clinical Psychology: In Session*, 68, 536-547. doi:10.1002/jclp.21850
- Callister, L. C. (2006). Perinatal loss: A family perspective. *Journal of Perinatal and Neonatal Nursing*, 20, 227-234.

- Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, 4, 92-100. doi:10.1207/s15327558ijbm0401\_6
- Castanheira, C., Vieira, V., Frade, B., Pacheco, D., Fonseca, E., & Rocha, J. C. (2012, March). *Materializando o trauma: Validação portuguesa da Escala de Impacto de Eventos Revista (IES-R)* [Operationalizing trauma: Portuguese validation of the Impact of Event Scale – Revised, IES-R]. Paper presented at “O luto em Portugal”, Aveiro, Portugal.
- Costa, L. L. F., Hardy, E., Osis, M. J. D., & Faúndes, A. (2005). Termination of pregnancy for fetal abnormality incompatible with life: Women’s experiences in Brazil. *Reproductive Health Matters*, 13(26), 139-146. doi:10.1016/S0968-8080(05)26198-0
- Creamer, M., Bell, R., & Failla, S. (2003). Psychometric properties of the Impact of Event Scale – Revised. *Behaviour Research and Therapy*, 41, 1489-1496. doi:10.1016/j.brat.2003.07.010
- Davies, V., Gledhill, J., McFayden, A., Whitlow, B., & Economides, D. (2005). Psychological outcome in women undergoing termination of pregnancy for ultrasound-detected fetal anomaly in the first and second trimesters: A pilot study. *Ultrasound in Obstetrics & Gynecology*, 25, 389-392. doi:10.1002/uog.1854
- Davis, C. G., Wortman, C. B., Lehman, D. R., & Silver, R. C. (2000). Searching for meaning in loss: Are clinical assumptions correct? *Death Studies*, 24, 497-540. doi:10.1080/07481180050121471
- Desrochers, J. N. (2011). *The psychosocial impact of termination of pregnancy for fetal anomaly on the male partner* (Unpublished master’s thesis). Brandeis University, Waltham, MA, USA.
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175-191.
- Fox-Wasylyshyn, S. M., & El-Masri, M. M. (2005). Handling missing data in self-report measures. *Research in Nursing & Health*, 28, 488-495. doi:10.1002/nur.20100

- Geerinck-Vercammen, C. R., & Kanhai, H. H. H. (2003). Coping with termination of pregnancy for fetal abnormality in a supportive environment. *Prenatal Diagnosis, 23*, 543-548. doi:10.1002/pd.636
- Gillies, J., & Neimeyer, R. A. (2006). Loss, grief, and the search for significance: Toward a model of meaning reconstruction in bereavement. *Journal of Constructivist Psychology, 19*, 31-65. doi:10.1080/10720530500311182
- Gray, K., & Lassance, A. (2003). *Grieving reproductive loss: The healing process*. New York: Baywood Publishing Company.
- Jaffe, J., & Diamond, M. O. (2011). *Reproductive trauma: Psychotherapy with infertility and pregnancy loss clients*. Washington, DC: American Psychological Association.
- Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. New York: Free Press.
- Keesee, N. J., Currier, J. M., & Neimeyer, R. A. (2008). Predictors of grief following the death of one's child: The contribution of finding meaning. *Journal of Clinical Psychology, 64*, 1145-1163. doi:10.1002/jclp.20502
- Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. New York: The Guilford Press.
- Kersting, A., Dorsch, M., Kreulich, C., Reutemann, M., Ohrmann, P., Baez, E., & Arolt, V. (2005). Trauma and grief 2-7 years after termination of pregnancy because of fetal anomalies: A pilot study. *Journal of Psychosomatic Obstetrics & Gynecology, 26*, 9-14. doi:10.1080/01443610400022967
- Kersting, A., Kroker, K., Steinhard, J., Hoernig-Franz, I., Wesselmann, U., Luedorff, K., ... Suslow, T. (2009). Psychological impact on women after second and third trimester termination of pregnancy due to fetal anomalies versus women after preterm birth: A 14-month follow up study. *Archives of Women's Mental Health, 12*, 193-201. doi:10.1007/s00737-009-0063-8

- Kersting, A., Kroker, K., Steinhard, J., Lüdorff, K., Wesselmann, U., Ohrmann, P., ... Suslow, T. (2007). Complicated grief after traumatic loss: A 14-month follow up study. *European Archives of Psychiatry and Clinical Neuroscience*, *257*, 437-443. doi:10.1007/s00406-007-0743-1
- Korenromp, M. J. (2006). *Parental adaptation to termination of pregnancy for fetal anomalies* (Unpublished doctoral dissertation). University Utrecht, Utrecht, The Netherlands.
- Korenromp, M. J., Iedema-Kuiper, H. R., van Spijker, H. G., Christiaens, G. C. M. L., & Bergsma, J. (1992). Termination of pregnancy on genetic grounds: Coping with grieving. *Journal of Psychosomatic Obstetrics and Gynecology*, *13*, 93-105.
- Korenromp, M. J., Page-Christiaens, G. C. M. L., van den Bout, J., Mulder, E. J. H., Hunfeld, J. A. M., Potters, C. M. A. A., ... Visser, G. H. A. (2007). A prospective study on parental coping 4 months after termination of pregnancy for fetal anomalies. *Prenatal Diagnosis*, *27*, 709-716. doi:10.1002/pd.1763
- Korenromp, M. J., Page-Christiaens, G. C. M. L., van den Bout, J., Mulder, E. J. H., & Visser, G. H. A. (2009). Adjustment to termination of pregnancy for fetal anomaly: A longitudinal study in women at 4, 8, and 16 months. *American Journal of Obstetrics & Gynecology*, *201*, 160.e1-160.e7. doi:10.1016/j.ajog.2009.04.007
- Kubany, E. S., Haynes, S. N., Abueg, F. R., Manke, F. P., Brennan, J. M., & Stahura, C. (1996). Development and validation of the Trauma-Related Guilt Inventory (TRGI). *Psychological Assessment*, *8*, 428-444. doi:10.1037/1040-3590.8.4.428
- Kubany, E. S., & Manke, F., P. (1995). Cognitive therapy for trauma-related guilt: Conceptual bases and treatment outlines. *Cognitive and Behavioral Practice*, *2*, 27-61. doi:10.1016/S1077-7229(05)80004-5
- Kubany, E. S., & Ralston, T. C. (2006). Cognitive therapy for trauma-related guilt. In V. M. Follette, & J. I. Ruzek (Eds.), *Cognitive-behavioral therapies for trauma* (2<sup>nd</sup> ed., pp. 258-288). New York: The Guilford Press.

- Kubany, E. S., & Watson, S. B. (2002). Cognitive trauma therapy for formerly battered women with PTSD: Conceptual bases and treatment outlines. *Cognitive and Behavioral Practice, 9*, 111-127. doi:10.1016/S1077-7229(02)80005-0
- Kubany, E. S., & Watson, S. B. (2003). Guilt: Elaboration of a multidimensional model. *The Psychological Record, 53*, 51-90.
- Lalor, J., Begley, C. M., & Galavan, E. (2009). Recasting hope: A process of adaptation following fetal anomaly diagnosis. *Social Science & Medicine, 68*, 462-472. doi:10.1016/j.socscimed.2008.09.069
- Larsson, A.-K., Svalenius, E. C., Lundqvist, A., & Dykes, A.-K. (2010). Parents' experiences of an abnormal ultrasound examination: Vacillating between emotional confusion and sense of reality. *Reproductive Health, 7*(10). doi:10.1186/1742-4755-7-10
- Lee, D. A., Scragg, P., & Turner, S. (2001). The role of shame and guilt in traumatic events: A clinical model of shame-based and guilt-based PTSD. *British Journal of Medical Psychology, 74*, 451-466. doi:10.1348/000711201161109
- McCoyd, J. L. M. (2007). Pregnancy interrupted: Loss of a desired pregnancy after diagnosis of fetal anomaly. *Journal of Psychosomatic Obstetrics and Gynecology, 28*, 37-48. doi:10.1080/01674820601096153
- McCoyd, J. L. M. (2008). "I'm not a saint": Burden assessment as an unrecognized factor in prenatal decision making. *Qualitative Health Research, 18*, 1489-1500. doi:10.1177/1049732308325642
- Monson, C. M., & Fredman, S. J. (2012). *Cognitive-behavioral conjoint therapy for PTSD: Harnessing the healing power of relationships*. New York: The Guilford Press.
- Pais Ribeiro, J. L., & Rodrigues, A. P. (2004). Questões acerca do coping: A propósito do estudo de adaptação do Brief Cope [Issues regarding coping: The adaptation study of the Brief Cope]. *Psicologia, Saúde & Doenças, 5*, 3-15.
- Park, C. L. (2008). Testing the meaning making model of coping with loss. *Journal of Social and Clinical Psychology, 27*, 970-994. doi:10.1521/jscp.2008.27.9.970

- Paunovic, N. (1998). Cognitive factors in the maintenance of PTSD. *Scandinavian Journal of Behaviour Therapy*, 27, 167-178. doi:10.1080/02845719808408511
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers*, 36, 717-731. doi:10.3758/BF03206553
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879-891. doi:10.3758/BRM.40.3.879
- Rando, T. A. (1993). *The treatment of complicated mourning*. Champaign, IL: Research Press.
- Raphael, B., Martinek, N., & Wooding, S. (2004). Assessing traumatic bereavement. In J. P. Wilson, & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD* (2<sup>nd</sup> ed., pp. 492-510). New York: The Guilford Press.
- Regan, P. (2011). *Close relationships*. New York: Routledge.
- Rillstone, P., & Hutchinson, S. A. (2001). Managing the reemergence of anguish: Pregnancy after a loss due to anomalies. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, 30, 291-298. doi:10.1111/j.1552-6909.2001.tb01547.x
- Rocha, J. C. F. C. (2004). *Factores psicológicos da mulher face à interrupção médica da gravidez* [Women's psychological factors when dealing with a termination of pregnancy for fetal abnormality] (Unpublished doctoral dissertation). Instituto de Ciências Biomédicas Abel Salazar, Porto, Portugal.
- Sommerseth, E., & Sundby, J. (2010). Women's experiences when ultrasound examinations give unexpected findings in the second trimester. *Women and Birth*, 23, 111-116. doi:10.1016/j.wombi.2010.01.001
- Stroebe, M., Schut, H., & Finkenauer, C. (2001). The traumatization of grief? A conceptual framework for understanding the trauma-bereavement interface. *The Israel Journal of Psychiatry and Related Sciences*, 38, 185-201.

- Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma and transformation: Growing in the aftermath of suffering*. Thousand Oaks: Sage Publications.
- Toedter, L. J., Lasker, J. N., & Janssen, H. J. E. M. (2001). International comparison of studies using the Perinatal Grief Scale: A decade of research on pregnancy loss. *Death Studies, 25*, 205-228. doi:10.1080/07481180125971
- Volker, M. A. (2006). Reporting effect size estimates in school psychology research. *Psychology in the Schools, 43*(6), 653-672. doi:10.1002/pits.20176
- Weiss, D. S. (2004). The Impact of Event Scale - Revised. In J. P. Wilson, & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD* (2<sup>nd</sup> ed., pp. 168-189). New York: Guilford Press.
- Wheeler, I. (2001). Parental bereavement: The crisis of meaning. *Death Studies, 25*, 51-66. doi:10.1080/07481180126147
- White-Van Mourik, M. C. A., Connor, J. M., & Ferguson-Smith, M. A. (1992). The psychosocial sequelae of a second-trimester termination of pregnancy for fetal abnormality. *Prenatal Diagnosis, 12*, 189-204. doi:10.1002/pd.1970120308
- Worden, J. W. (2008). *Grief counselling and grief therapy: A handbook for the mental health practitioner* (4<sup>th</sup> ed.). Hove: Brunner-Routledge.

## 1 Table 1

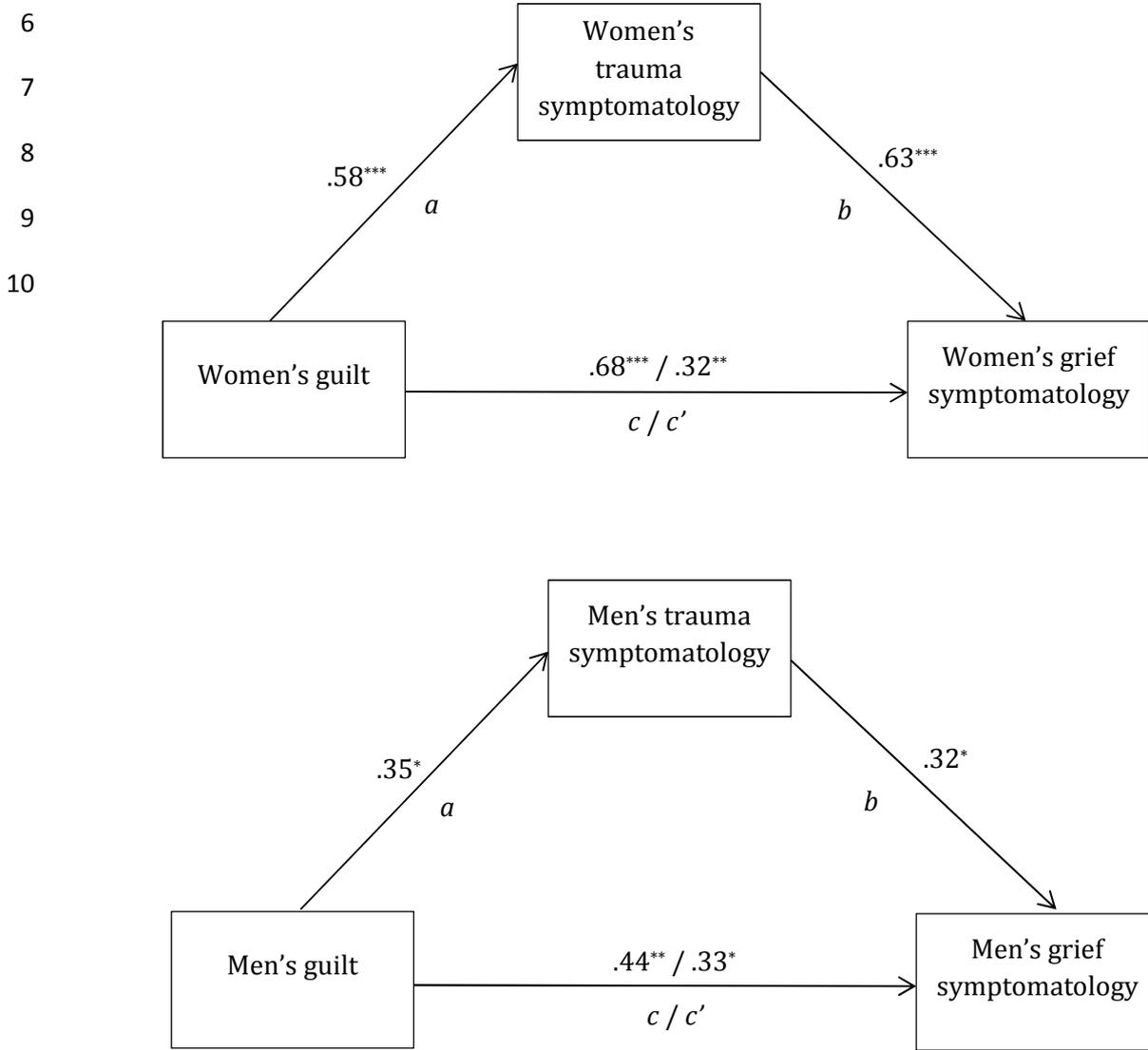
2 *Descriptive Statistics and Correlations for the Study Variables*

	<i>M (SD)</i>	01	02	03	04	05	06	07	08	09	10	11	12
01. Intrusion (Women)	1.42 (0.77)	1											
02. Intrusion (Men)	1.26 (0.79)	.43**	1										
03. Avoidance (Women)	1.26 (0.68)	.43**	.24	1									
04. Avoidance (Men)	1.18 (0.71)	.23	.57***	.32*	1								
05. Hyperarousal (Women)	0.94 (0.68)	.72***	.34*	.62***	.20	1							
06. Hyperarousal (Men)	0.87 (0.86)	.39*	.81***	.08	.53***	.33*	1						
07. IES-R – Total (Women)	1.21 (0.60)	.86***	.40**	.79***	.30+	.91***	.32*	1					
08. IES-R – Total (Men)	1.10 (0.69)	.41**	.92***	.23	.78***	.33*	.91***	.38*	1				
09. Guilt (Women)	32.46 (40.34)	.41**	.29+	.41**	.27	.43**	.18	.48**	.28+	1			
10. Guilt (Men)	14.82 (29.07)	.33*	.44**	.07	.20	.19	.30+	.24	.36*	.50**	1		
11. PGS – Total (Women)	82.61 (26.03)	.66***	.42**	.53***	.27+	.74***	.35*	.76***	.40**	.67***	.34*	1	
12. PGS – Total (Men)	66.37 (18.05)	.48***	.47**	.04	.26	.27+	.51***	.32*	.48**	.20	.43**	.50***	1

3 +  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

4 Figure 1

5 *Direct and Indirect (via Trauma Symptomatology) Effects of Guilt on Grief Symptomatology*



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