



Luto perinatal nas mulheres e a construção partilhada de significados

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Dissertação de Mestrado em Psicologia da Saúde e Neuropsicologia

Orientação: Professor Doutor José Carlos Rocha

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Resumo

A perda perinatal é uma experiência dolorosa e potencialmente devastadora para os pais, podendo acarretar um conjunto de consequências psicológicas. Assim, estas perdas merecem especial atenção na investigação e prática clínica. Salienta-se assim a pertinência da investigação focada na temática de complicações obstétricas, assim como na construção de instrumentos de avaliação que posteriormente possibilitem uma intervenção clínica.

A dissertação é constituída por três manuscritos. O primeiro manuscrito intitula-se por *A new brief measure for perinatal grief: PGS-6* e visa a construção de uma versão reduzida da Escala de Luto Perinatal e a construção de pontos de corte para esta, tendo como amostra 258 participantes. O segundo manuscrito, cujo título *Construction and validation of the Shared Meaning Making Scale (SMMS)*, é um trabalho de colaboração com a colega Fátima Gonçalves, que visa a construção de uma escala de avaliação focada na construção partilhada de significado para um evento, sendo usada uma amostra de 214 participantes. O terceiro manuscrito intitula-se *Shared meaning making and couples relationship after perinatal loss* e visa avaliar o efeito da construção partilhada de significados na relação conjugal e desenvolvimento de psicopatologia após perda perinatal em mulheres, tendo como amostra 93 participantes. Todos os manuscritos contaram com a colaboração Hospital Padre Américo, CHTS.

Os resultados permitiram a obtenção de instrumentos com boas características psicométricas, mas também um maior conhecimento acerca de adaptação diádica após um evento adverso como a perda perinatal.

Palavras chave: Perda Perinatal; Luto perinatal; Luto complicado; Depressão; Stress pós-traumático; Relação conjugal; Significado; Construção partilhada de significados

Abstract

Perinatal loss is a painful and potentially devastating experience for parents, and can have a number of psychological consequences. Thus, these losses deserve special attention in terms of research and clinical practice. The relevance of the research focused on the theme of obstetric complications is emphasized, as well as on the construction of assessment instruments to later enable a clinical intervention.

The dissertation consists of three manuscripts. The first manuscript is entitled A new brief measure for perinatal grief: PGS-6, aiming building a reduced version of the Perinatal Grief Scale and establish cutoff points for it, with a sample of 258 participants. The second manuscript, titled *Construction and validation for the Portuguese population of the Shared Meaning Making Scale (SMMS)*, is a collaborative work with colleague Fatima Gonçalves in the construction of an evaluation scale focused on the shared meaning making about an event. This sample consisted of 214 participants, divided into two groups: one related to perinatal losses and another to traumatic births. The third manuscript is entitled *Shared meaning making and couples' relationship after perinatal loss* and aims to evaluate the effect of shared meaning making in the couple relationship and development of psychopathology after perinatal loss in women, with 93 participants as a sample. All manuscripts had the collaboration of *Hospital Padre Américo, CHTS*.

The results allowed the obtaining of instruments with good psychometric characteristics, but also a greater knowledge about dyadic adjustment after an adverse event such as perinatal loss.

Key words: Perinatal loss; Perinatal grief; Complicated grief; Depression; Posttraumatic stress; Couple relationship; Meaning; Shared meaning making

Part I

A new brief measure for perinatal grief: PGS-6

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Abstract

Objective and Method: The aim is to develop a brief version of the PGS, as well as the establishment of cut-off points for the risk of the presence of depression, PTSD and complicated grief. A sample of 258 participants was used to perform it, divided into two groups of 165 and 93 women. The used instruments are: Inventory Complicated Grief, Perinatal Grief Scale, Impact of Event Scale-6, Patient Health Questionnaire-9.

Results: Stepwise multiple regression is applied to abbreviate the PGS. The abbreviation procedure result in a subset of six items (the PGS-6), which correlate highly with PGS-33 ($r = .981$). The reliability of PGS-6 is high to very high ($\alpha = .89$). Regarding convergent external validity, there are positive correlations with depression, traumatic stress and complicated grief symptoms. In regard to the cut-off points, we verify for PGS-33 a score ≥ 88 and for PGS-6 ≥ 18 indicates difficulties on the grief process, with areas under the curve $>.80$.

Conclusion: The PGS-6 appears to be a robust brief measure of perinatal grief. It may be useful for research in certain studies, and it may also be useful as a screening instrument in clinical practice.

Key words: Perinatal loss; Perinatal grief; Complicated grief; Depression; Posttraumatic stress; Clinical evaluation scales

Introduction

Perinatal loss is defined as the loss of the fetus or baby before, during or shortly after birth (DeBackere et al., 2008), including deaths from miscarriage (most frequent gestational loss), stillbirth and neonatal death (Kersting & Wagner, 2012; Feizollahi et al., 2018).

After perinatal loss, parents initiate a grief process that may not differ significantly from other loss scenarios (Kersting & Wagner, 2012) or lead to a unique and specific grief (Johnson & Langford, 2015; Ratislavová, et al., 2015). Perinatal loss has several consequences on women's lives, evoking a set of persistent negative emotional states and intense distress (Bonanno et al., 2002). Many of these negative psychosocial consequences may be due to the impact that the death of a child has on a woman's identity and sense of self (Leon, 1992). Examples of immediate and long-term consequences of perinatal loss are: anxiety (Armstrong, 2002; Armstrong et al., 2009; Hutti et al., 2011), depression (Gaudet et al., 2010; Gausia et al., 2011), loneliness, emptiness (Dyer et al., 2019), anger (Hall et al., 1987), helplessness, low self-esteem (Côté-Arsenault & Mahlangu, 1999), insomnia, nightmares (Cacciatore et al., 2008), stress after birth, anxiety in the next pregnancies, posttraumatic stress disorder (Engelhard, et al., 2001; O'Leary, 2005; Armstrong, et al., 2009; Bennett et al., 2012), intense grief, hyper vigilant attitude during next pregnancies (Côté-Arsenault, 2007; Hutti et al., 2015) and changes in marital relationships (Gold et al, 2010; Hutti et al., 2015). Furthermore, after perinatal loss, it is also usual the development of complicated grief (Kersting & Wagner, 2012).

Complicated grief is characterized by prolonged grief, with extreme discomfort in separation, intrusive thoughts about the deceased, feelings of meaninglessness and emptiness, difficulties in accepting the loss and in continuing life without the deceased, anger at death, recurring negative emotions and intense desire for the deceased (Shear et al., 2005; Holland et al., 2009), after 12 months of the loss (American Psychiatric Association, 2013).

Because it can be a traumatic loss (Nazaré et al., 2010), in perinatal loss there is a greater possibility of developing complicated grief (Kersting & Wagner, 2012). Complicated grief reactions after perinatal loss usually can be specified within the existing diagnostic criteria, but they could differ from grief after other significant losses in some aspects (Kersting & Wagner, 2012). Frequently, after perinatal loss, mothers have ruminative thoughts about the loss of the baby and what they could have done to prevent the event (Black & Wright, 2012), which can lead to self-blame (Wright, 2010). Rumination and intrusive thoughts about the deceased and guilt related to circumstances of the death are common features of complicated grief (Shear, 2015). Furthermore, avoidance of situations that serves as a reminder of the loss are common in complicated grief (Shear, 2015), but also in perinatal grief. Mothers often avoid events that serve as reminder of the loss, such as, pregnant women, babies or the hospital where the loss occurred, which may lead to social isolation (Kersting & Wagner, 2012). However, these reactions from perinatally bereaved mothers could be considered to be part of the normal course of perinatal grief (Wright, 2010). In addition, aspects such as low self-esteem and a sense of failure are both associated with complicated grief (Koch et al., 2012; Hussin & Azman, 2016) and perinatal grief (Kersting & Wagner, 2012).

Regarding the time, most studies refer that grief after a perinatal loss usually declines two years after the loss (Janssen et al., 1997; Scheidt et al., 2012). However, for some parents, the grief after perinatal loss can last, sometimes, for decades (Cacciatore, 2013). Thus, the continuing nature of perinatal grief, in and of itself, may not presents as a complicated grief reaction. Attention should be paid when parents show a very intense and consuming grief that affects their ability to carry out their daily activities (Black et al., 2015).

There is often a need for psychological counselling with parents after perinatal losses. However, due to the impossibility of accurately identifying the need for psychological

intervention only through their behaviour (Hutti et al., 2013), it is essential to carry out a more accurate assessment (Bennett et al., 2012). There are several instruments to evaluate perinatal grief. The Perinatal Grief Scale is considered to be one of the most used and most accurate instruments to evaluate grief after perinatal loss (González et al., 2011). However, it is highlighted the scarcity of abbreviated scales that perform the function of screening the presence of complicated perinatal grief, so that it is possible to carry out a rapid and effective assessment, often necessary in certain situations. Thus, the goal of this study is to develop a Portuguese abbreviated version of the Perinatal Grief Scale, as well as the establishment of cut-off points (for both PGS-33 and brief version) that allow the identification of the risk of the presence of complicated grief, depression and posttraumatic stress.

Method

Study design

This study is a cross-sectional study, aiming to construction of a brief version of the Perinatal Grief Scale, as well as the establishment of cut-off points for the presence of complicated grief, depression and posttraumatic stress disorder (PTSD) after perinatal loss.

Participants

There are two different sampling approaches both with inclusion criteria of women who experienced at least one pregnancy loss and consented to participate: a) *Online* consisted of 93 women, with ages between 18 and 63 years old ($M = 30.98$; $SD = 8.37$), using Questionnaire of Socio-demographic data, Perinatal Grief Scale (PGS), the Inventory Complicated Grief (ICG), the Impact of Event Scale-6 (IES-6), Patient Health Questionnaire-9 (PHQ-9). In this sample, the majority of the women have an intimate relationship (37.6% are married and 23.7% is cohabiting), with the majority childless

(58.1%). The gestational age at which pregnancy losses occurred varies between 4 weeks and 35 weeks, with the most frequent ones being 10 weeks (4.3%) and 15 weeks (4.3%); *b) face-to-face*, with 165 women, with ages between 18 and 44 years old ($M = 31.80$; $SD = 5.93$), using the Questionnaire of Socio-demographic data and the Perinatal Grief Scale. The majority of the sample is married (84.5%) and childless (55.8%). The gestational age at which pregnancy losses occurred varies between 5 weeks and 38 weeks, with the most frequent ones being at 19 weeks (8.5%) and 22 (8.5%) (Table 1).

The sample obtained *online* is used for all the purposes of this study (abbreviation of the PGS-33 and establishment of the cut-off points) and the sample obtained face-to-face is used particularly for the purpose of the abbreviation of the PGS-33.

Instruments

Questionnaire of Socio-demographic data: was built with the goal of collecting demographic information, such as, age, marital status, qualifications, but also the data relating to the perinatal lost, such as number of perinatal losses.

Perinatal Grief Scale (PGS) (Potvin et al., 1989): has as objective the evaluation of current perinatal grief symptomatology (Potvin et al., 1989). The short version is constituted by 33 items arranged in a 5-point Likert scale (1= “strongly agree”; 2= “agree”; 3= “neither agree nor disagree”; 4= “disagree”; 5= “strongly disagree”) (Potvin et al., 1989). The scale is constituted by three subscales, composed of 11 items each: Active Grief (i.e. crying and missing the baby); Coping Difficulty (i.e. isolation and depression) and Despair (i.e. feeling of despair and uselessness) (Toedter et al., 2001). The sum of the score can vary between 33 and 165 points, where a score above 91 can be considered to reflect a high degree of grief (Toedter et al., 2001). However, it should be noted that this score is established for normative purposes, and it is not accurate that an individual with a score below 91 has less intense

levels of grief. For the Portuguese population, the instrument shows good psychometric characteristics at the level of validity and reliability (Cronbach's Alpha=.96). The Cronbach's Alpha values were .91 for Active Grief subscale, .90 for the Coping Difficulty subscale and .89 for the Despair subscale (Rocha, 2004).

Impact of Events Scale-Revised -6 (IES-6) (Thoresen et al., 2010): has as objective the screening of posttraumatic stress reactions in clinical and non-clinical populations (Thoresen et al, 2010). The instrument is constituted by 6 items, arranged in a 5-point Likert scale (1= "not at all"; 2= "a little bit"; 3= "moderately"; 4= "quite a bit"; 5= "extremely"). The cut-off point for the Portuguese population is 12.5. The IES-6 showed a Cronbach's alpha value of .84 for the total scale (Lopes & Rocha, 2013).

Patient Health Questionnaire-9 (PHQ-9) (Kroenke et al., 2001): aims to evaluate the depressive symptomatology and its severity (Torres et al., 2013). It is a brief scale, consisting of 9 items arranged of 4-point Likert scale (1= "never"; 2= "several days"; 3= "more than half the days"; 4= "nearly every day"). The sum of the score can vary between 0 and 27 points where a score between: 0 and 5 points means no symptoms; 6 to 9 points means slight symptomatology; 10 to 14 means moderate symptomatology; from 15 to 19 means moderate to severe symptomatology; and greater than 20 severe symptoms (Kroenke et al., 2001). For the Portuguese population, the instrument shows good reliability levels, namely Cronbach's alpha of .86 (Torres et al., 2013).

Inventory of Complicated Grief (ICG) (Prigerson et al., 1995): evaluates the symptoms of grief often associated with the complicated grief process (Prigerson et al., 1995). This instrument is constituted by 19 items arranged in a 5-point Likert scale (1= "never"; 2 = "rarely"; 3 = "sometimes"; 4 = "frequently"; 5 = "always"). The ICG was translated and validated to the Portuguese population by Frade et al. (2009). In the Portuguese version, the instrument has 5 factors: traumatic difficulties, with Cronbach's

alpha of .83; difficulties of separation, with Cronbach's alpha of .87; denial and revolt, with Cronbach's alpha of .88; psychotic scale, with Cronbach's alpha of .63; and depressive scale, with Cronbach's alpha of .56. The Cronbach's alpha of the total scale is .91 (Pacheco, 2010). Although not yet fully stipulated, normally, it is considered that scores higher than 25 are pondered to be associated with significantly worse functioning (Prigerson et. al., 1995).

Procedures

For data collection we asked for institutional authorizations, namely at the Hospital Padre Américo, CHTS. However, due the Covid-19 pandemic, data collection was exclusively *online*, through the *LimeSurvey* program. In order to guarantee ethical questions, all participants had guaranteed confidentiality, anonymity and volunteer status. After informed consent, it was asked to participants to complete the instruments. The inclusion criteria were: to be a woman; to have suffered at least one perinatal loss; to be of legal age.

Statistical Analysis

Reliability Analysis

To test the PGS-33 and PGS-6 reliability, we resort to the analysis of its internal consistency, through the calculation of the Cronbach's alpha for PGS-33 and for PGS-6.

Abreviation of PGS-33

Multiple regression analysis was used to identify which combination of items that explains the maximum proportion of variance of the full-scale sum score. This regression procedure with the PGS-33 sum score as the dependent variable, entering the 33 single items as independent variables, using the forward stepwise command. It should be noted that the

existence of inverted items from PGS-33 was taken into account. The explained variance ($R^2_{adjusted}$) of the PGS-33 by these six items (PGS-6) was calculated.

Through exploratory factor analysis, using the “varimax” rotation model, was decided *a priori* that our subset of items should consist of two items from each subscales of the PGS-33.

Correlations between PGS-6 and PGS-33

The PGS-6 sum score was correlated with the PGS-33 sum score. We also calculated the correlation between each of the six items of the PGS-6 with PGS-33 sum score as well as the correlation between each item of the PGS-6.

Descriptive analysis of the PGS-6

The analysis of the general characteristics of the scale was performed by calculating the average of the PGS-6 and its respective factors.

Network Analysis

Network Analysis was performed in order to verify the existence of connectivity between the items of the scale (PGS-6), as well as to verify the centrality of the items.

Calculation of the cut-off point of the PGS-33 and of the PGS-6

We calculated several cut-off points for PGS-6 and for PGS-33, such as: the cut-off for the complicated grief, using ICG; the cut-off for the depression, using PHQ-9; and the cut-off for the posttraumatic stress disorder, using IES-6. For the establishment of the cut-

off points we considered the cut-off points of the respective instruments, namely, ≥ 12.5 points of IES-6, ≥ 10 points of PHQ-9 and > 25 of ICG.

For the calculation of the cut-off was performed a ROC curve and it was calculated the area under the curve (AUC) for the PGS-33 and the PGS-6. ROC curve is being shown to be beneficial in determining the best cut-off for clinical use (Streiner & Cairney, 2007). Thus, the cut-off point for PGS-33 was made with the PGS-33 sum score as the dependent variable and the results of the respective instruments (ICG, PHQ-9 and IES-6) as independent variables. Regarding the PGS-6, the cut-off points was made with the PGS-6 sum score as the dependent variable and the results of the respective instruments (ICG, PHQ-9 and IES-6) as independent variables.

Convergent external validity of PGS-6

To calculate the convergent external validity of the PGS-6, correlations were made between the PGS-6, the Inventory of Complicated Grief (ICG), the Impact of Events Scale-Revised-6 (IES-6) and the Patient Health Questionnaire-9 (PHQ-9). We also realized a correlation between the factors of PGS-6 with other instruments, namely, with the ICG, IES-6 and PHQ-9.

All statistical analysis was conducted using SPSS for Windows, version 26.0., with the exception of Network Analysis that was performed with the program JASP 0.12.2.0.

Results

Multiple regression analysis

Through the results we can identify which combination of items explains the maximum proportion of variance of the full-scale sum score. Thus, the six items identified

for constituted the PGS-6 are: item 3 (“I feel empty inside”); item 4 (“I can’t keep up with my normal activities”); item 10 (“I miss my baby very much”); item 16 (“I feel physically ill when I think about the baby”); item 23 (“I blame myself for the baby’s death”) and item 28 (“I feel somewhat apart and remote, even among friends”). These six items achieved an explained variance ($R^2_{adjusted}$) of the PGS-33 sum score of .97.

We also verify that these six items consisting of two items from the PGS-33 subscale “Active Grief” (items 3 and 10), two items from the PGS-33 subscale “Coping Difficulties” (items 4 and 28) and two items from the subscale of the PGS-33 “Despair” (items 16 e 23) (Table 2).

Correlations between PGS-33 and PGS-6

The PGS-6 sum score was correlated with the PGS-33 sum score ($r = .98$; $p = .000$), showing a high level of association between them.

We also calculated the correlations between each pair of items from PGS-6 belonging to the same subscale of the PGS-33, namely between item 3 and item 10 (subscale “Active Grief”) ($r(258) = .62$, $p < .001$), between item 16 and item 23 (subscale “Despair”) ($r(258) = .78$, $p < .001$) and between item 4 and item 28 (subscale “Coping Difficulties”) ($r(258) = .86$, $p < .001$).

Finally, we calculated the correlation between the items of PGS-6 and PGS-33 sum score, namely, correlations between: item 3 and PGS-33 ($r(258) = .63$, $p < .001$); item 4 and PGS-33 ($r(258) = .90$, $p < .001$); item 10 and PGS-33 ($r(258) = .49$, $p < .001$); item 16 and PGS-33 ($r(258) = .87$, $p < .001$); item 23 and PGS-33 ($r(258) = .86$, $p < .001$) and item 28 and PGS-33 ($r(258) = .92$, $p < .001$). All correlations are positive, significant and high, except the correlation between the PGS-33 sum score and item 10, which is a moderate correlation (Table 3).

Factor Analysis

After taking into concern the existent correlation between the items, we proceeded to the Barlett test ($p < .001$) and the Kaiser-Meyer-Olkin test, which showed a value of .85. Both tests demonstrate the suitability of the sample for factor analysis.

The results show that the six items constituting the PGS-6 are divided into two factors, in which the corresponding items of the Coping Difficulties and Despair scales were grouped into the same factor. The two items belonging to the Despair scale (items 16 and 23) and the two items belonging to the Coping Difficulty scale (items 4 and 28) are highly associated with the first factor, which explains 65.02% of the scale variance. The two items belonging to the Active Grief scale (items 3 and 10) are highly associated with the second factor, which explains 19.34% of the scale variance. Together, the two factors explain 84.36% of the scale variance (Table 4).

Descriptive analysis of the PGS-6

The PGS-6 is a scale composed by six items, with 5-point Likert scale. The sum of the score can vary between 6 and 30 points. The average sum score of PGS-6 is 19.59 ($SD = 7.19$). Regarding to the average of the factors from PGS-6, we verify that the average of factor 1 is 13.27 ($SD = 5.74$) and the average from factor 2 is 6.31 ($SD = 2.51$).

Reliability Analysis

We calculated the Cronbach's alpha for the PGS-33, for the PGS-6 and for its factors. The Cronbach's alpha value for the PGS-33 is of .96. The Cronbach's alpha value for the PGS-6 is of .89. As for the factors of PGS-6, the value of Cronbach's alpha for factor 1 of PGS-6 is .94 and for the factor 2 of PGS-6 is .76 (Table 5).

Network Analysis

The network analysis is, essentially, a set of elements (nodes) that are connected through a set of relations and exert potentially causal effects upon each other (Borsboom & Cramer, 2013). Centrality is the measure of node interconnectedness (Ross et al., 2018), where central symptoms are possibly more influential than the others and once activated, these central symptoms will spread the activation throughout the network (Borsboom & Cramer, 2013).

Regarding the PGS-6, it appears that the items establish 12 connections of the 13 possible. The item showing the highest centrality was the item 16 (“I feel physically ill when I think about the baby”). It is also possible to verify that it seems that the items are arranged as if in two groups. That is, items 3 and 10 (factor 2) are closer together, showing stronger connections among themselves. While items 4, 16, 23 and 28 (factor 1) also seem to be closer together, showing stronger connections between themselves (Figure 1).

Cut-off point calculation for the PGS-33 and the PGS-6

In order to be able to evaluate the diagnostic capacity of PGS-33 and PGS-6 to evaluate the presence of complicated grief, depression and PTSD, it was made the analyses of the ROC curve (AUC). Through the ROC curve analysis, it is possible to identify the sensitivity (ratio of true positives) and specificity (ratio of true negatives) of a diagnostic instrument (Hintze, 2007). In general, an AUC of .5 suggests no discrimination, .7 to .8 is considered acceptable, .8 to .9 is considered excellent, and more than .9 is considered outstanding (Hosmer & Lemeshow, 2000).

Cut-off points for complicated grief

Regarding PGS-33, the analysis result of the ROC curve demonstrated that the total area of the curve is of .87 ($SD = .05$; $p < .001$; 95% CI: .77- .97) (Figure 2). The cut-off point of PGS-33 for determining the presence of complicated grief is ≥ 88 , with 77.1% of true positives and 92.3% of true negatives (Table 6).

In regards PGS-6, the analysis result of the ROC curve demonstrate that the total area of the curve is of .90 ($SD = .04$; $p < .001$; 95% CI: 0.82-.97) (Figure 2). The cut-off point of PGS-6 for determining the presence of complicated grief is ≥ 18 , with 77.1% of true positives and 84.6 % of true negatives (Table 6).

Cut-off points for posttraumatic stress disorder

Regarding PGS-33, the analysis result of the ROC curve demonstrated that the total area of the curve is of .84 ($SD = .06$; $p < .001$; 95% CI: .73-.95) (Figure 2). The cut-off point of PGS-33 for determining the presence of posttraumatic stress is ≥ 118 , with 61.5% of true positives and 91.3% of true negatives (Table 6).

In regards PGS-6, the analysis result of the ROC curve demonstrate that the total area of the curve is of .87 ($SD = .05$; $p < .001$; 95% CI: .77-.97) (Figure 2). The cut-off point of PGS-6 for determining the presence of posttraumatic stress is ≥ 21 , with 77% of true positives and 78.3 % of true negatives (Table 6).

Cut-off points for depression

Regarding PGS-33, the analysis result of the ROC curve demonstrated that the total area of the curve is of .95 ($SD = .03$; $p < .001$; 95% CI: .89-1) (Figure 2). The cut-off point of PGS-33 for determining the presence of depression is ≥ 112 , with 100% of true positives and 77.1% of true negatives (Table 6).

Regarding PGS-6, the analysis result of the ROC curve demonstrated that the total area of the curve is of .91 ($SD = .04$; $p < .001$; 95% CI: .83-.99) (Figure 2). The cut-off point of PGS-6 for determining the presence of depression is ≥ 22 , with 100% of true positives and 75% of true negatives (Table 6).

Convergent external validity of PGS-6

The evidence of convergent validity is observed through positive correlations that exist between PGS-6 and Inventory of Complicated Grief ($r(258) = .83$, $p < .001$), between PGS-6 and Patient Health Questionnaire-9 ($r(258) = .70$, $p < .001$) and, finally, between PGS-6 and Impact of Events Scale-Revised -6 ($r(258) = .80$, $p < .001$).

We also made correlations between the factors from PGS-6 and the depressive symptomatology (Patient Health Questionnaire-9), the posttraumatic stress symptomatology (Impact of Events Scale-Revised -6) and the complicated grief symptomatology (Inventory of Complicated Grief). Regarding to factor 1, we verify the existence of significant positive correlations between factor 1 and complicated grief symptomatology ($r(258) = .81$, $p = .000$), between factor 1 and posttraumatic stress symptomatology ($r(258) = .66$, $p = .000$) and between factor 1 and depressive symptomatology ($r(258) = .80$, $p = .000$). In regard to factor 2, we verify the existence of significant positive correlations between factor 2 and complicated grief symptomatology ($r(258) = .68$, $p = .000$), between factor 2 and posttraumatic stress symptomatology ($r(258) = .64$, $p = .000$) and between factor 2 and depressive symptomatology ($r(258) = .62$, $p = .000$) (Table 7).

Discussion

The main goal of this research was to develop a brief version of the Perinatal Grief Scale, but also to calculate several cut-off points for the respective scales.

To that end, an abbreviated form of PGS was developed, that is, PGS-6. PGS-6 has the main goal of screening for the presence of complicated perinatal grief after perinatal loss, but also of depression and PTSD. Despite the reduction in the number of items, PGS-6 has the ability to explain most of the total variance of PGS-33 (97%). We also found that the sum score of PGS-6 had a significant positive high correlation with the sum score of PGS-33 ($r(258) = .98, p < .001$) (Pestana & Gageiro, 2005), showing a high association with each other. Also, the correlations between the six items of PGS-6 and the sum score of PGS-33 were also shown to be positive and significant.

Cronbach's alpha was also calculated for PGS-33 and PGS-6. Cronbach's alpha allows to assess the reliability of the instrument, which that the closer to "one" this value is, more reliable the instrument is (Maroco, 2006). Thus, the Cronbach's alpha obtained in this study was .96 for the PGS-33, which does not differ from that obtained in the study for Portuguese validation (Rocha, 2004). The Cronbach's alpha value for PGS-6 was .89, demonstrating high to very high reliability (Pestana & Gageiro, 2005).

The study also found that PGS-6, as a brief scale, had a different factorial distribution than PGS-33. While the PGS-33 presents the items subdivided into three subscales (Active Grief, Despair and Coping Difficulties) the PGS-6 only presents the items subdivided into two components. The two-factors structure of PGS-6 may be related to the fact that in the study by Potvin et al. (1989) the two scales, Coping Difficulties and Despair, present a high correlation with each other demonstrating to be highly associated. Thus, the PGS-6 has a dual factorial structure, in which the first factor consists of four items from the Despair and Coping Difficulties scales (items 4, 16, 23, 28) and the second factor consists of two items

from the Active Grief scale (items 3 and 10). Thus, factor 1 seems to be related to feelings of despair and coping difficulties and factor 2 to symptoms of active grief. In this way, and taking into account the ICD-11 definition of prolonged grief, it can be considered that factor 1 corresponds to the component of PGS-6 related to issues of emotional pain, whereas factor 2 corresponds to the component of PGS- 6 related to longing (World Health Organization, 2018). Thus, factor 1 of PGS-6 can be called "Despair and Coping Difficulties" and factor 2 of PGS-6 can be called "Active Grief".

Network Analysis revealed that all items were connected to each other, verifying the centrality of item 16 in PGS-6, referring to the somatization process, seeming that this item have a greater possibility of influence from the other items (Borsboom & Cramer, 2013).

Through the ROC curve analysis, we calculated several optimal cut-off points for PGS-33 and for PGS-6. All of the AUC obtained values higher than .80, which suggested an excellent capacity of discrimination (Hosmer & Lemeshow, 2000). In a study developed by Toedter et al., (2001), the author reported that for normative purposes it is considered that scores equal or higher to 91 points in PGS could mean clinically significant suffering after perinatal loss. In our study we verify that for the PGS-33, in general, scores equal or higher than 88 points, seem to indicate a greater possibility of developing complications in the grieving process. Thus, the results obtained in our study regarding the cut-off that indicate clinically significant suffering do not differ considerably from the cut-off reported by Toedter et al. (2001). In regards to PGS-6, we verify that scores equal or higher than 18 points indicate a greater possibility of developing complications in the grieving process.

Finally, regarding convergent validity of PGS-6, there are positive correlations with posttraumatic stress, depressive and complicated grief symptoms using different instruments.

Conclusion

This study had as its main goal to develop an abbreviated form of PGS-33 (PGS-6). The high correlations between PGS-33 and PGS-6, the value of Cronbach's alpha of PGS-6, indicating a high to very high reliability, the establishment of several cut-off points, the existence of positive correlations between the PGS-6 and other instruments, are some of the strengths of our study.

Short scales have the advantages of reducing costs and the burden on individuals and being of easier application in daily clinical use, especially in sensitive cases, such as perinatal losses. The PGS-6 will probably be proven useful in research when questionnaire space restrictions do not allow for longer scales, for example, in large epidemiological studies and it may also have an important role as a screening instrument in clinical practice.

This study has some limitations. The fact that the sample is only composed by Portuguese women, which could influence the diversified of the sample at the cultural level. The fact that the study presents two samples, in which data were collected in different time periods and in different ways, namely presential and *online*, could present as itself as a limitation. Finally, the exclusive use of other self-report instruments to establish the cut-off points instead of using structured interviews can lead to an overestimation of the sensitivity and specificity for PGS-33 and PGS-6. Caution should be taken when generalizing this result. In future studies, it would be necessary to use a larger sample, but it is also necessary a comparative study with other populations, in order to discriminate the influence of cultural factors and the use of structured interviews for the establishment of the cut-off points.

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Tables and Figures

Table 1

Sociodemographic and Clinical characteristics

	Online				Face-to-face			
	n	%	<i>M</i>	<i>SD</i>	n	%	<i>M</i>	<i>SD</i>
Sociodemographic data								
Number of women	93	100	-	-	165	100		
Age	-	-	30.98	8.37			31.80	5.93
Marital Status	-	-	-	-	-	-	-	-
Single	32	34.4	-	-	14	8.5	-	-
Married	35	37.6	-	-	139	84.8	-	-
Cohabiting	22	23.7	-	-	9	4.8	-	-
Divorced	4	4.3	-	-	3	1.8	-	-
Education level	-	-	-	-	-	-	-	-
4 th grade	2	2.2	-	-	27	16.3	-	-
6 th grade	-	-	-	-	34	20.6	-	-
9 th grade	11	12.9	-	-	15	9.1	-	-
12 th grade	28	30.1	-	-	40	24.2	-	-
Higher education	52	55.9	-	-	49	29.7	-	-
Professional situation	-	-	-	-	-	-	-	-
Employed	69	74	-	-	157	95.4	-	-
Unemployed	24	26	-	-	8	4.6	-	-
Number of children	-	-	-	-	-	-	-	-
Childless	54	58.1	-	-	92	55.8	-	-
1 child	23	24.7	-	-	58	34.5	-	-
2 or more children	16	17.2	-	-	15	9.1	-	-
Clinical data								
Type of pregnancy loss	34	47.1	-	-	-	-	-	-
Miscarriage	26	28	-	-	110	66.67	-	-
TOP*	2	2.2	-	-	24	14.55	-	-
Voluntary TOP**	2	2.2	-	-	5	2.98	-	-
Late pregnancy loss	4	4.3	-	-	26	15.8	-	-
Number of pregnancy loss	34	47.1	-	-			-	-
1 pregnancy loss	13	14	-	-	97	58.79	-	-
2 pregnancy losses	15	16.1	-	-	45	27.27	-	-
3 or more pregnancy losses	6	17.6	-	-	23	13.94	-	-

Note: * termination of pregnancy; ** voluntary termination of pregnancy

Table 2*Summary of regression analysis for the PGS-33 abbreviation*

	Coefficients		Standardized Coefficients	
	<i>B</i>	<i>SD</i>	β	<i>t</i>
I feel empty inside. (Item 3)	3.59	.42	.15	8.51***
I can't keep up with my normal activities. (Item 4)	5.53	.60	.26	9.26***
I very much miss my baby. (Item 10)	3.29	.39	.13	8.55***
I feel physically ill when I think about the baby. (Item 16)	4.32	.52	.20	8.24***
I blame myself for the baby's death. (Item 23)	4.22	.51	.19	8.30***
I feel somewhat apart and remote, even among friends. (Item 28)	5.94	.66	.27	9.01***

$R^2_{adjusted} = 0.97$; *** $p < .001$

Table 3*Correlation between PGS-33 score and PGS-6 items*

	PGS-33	Item 3	Item 4	Item 10	Item 16	Item 23	Item 28
PGS-33	-	-	-	-	-	-	-
Item 3	.63***	-	-	-	-	-	-
Item 4	.90***	.42***	-	-	-	-	-
Item 10	.49***	.62***	.27***	-	-	-	-
Item 16	.87***	.43***	.81***	.28***	-	-	-
Item 23	.86***	.43***	.77***	.28***	.78***	-	-
Item 28	.92***	.46***	.86***	.30***	.81***	.81***	-

*** $p < .001$

Table 4*Exploratory factor analysis for PGS-6*

	Subscale of PGS-33 to which the items belonged	F1 from PGS-6	F2 from PGS-6	Communalities
I can't keep up with my normal activities. (Item 4)	Coping Difficulty	.92		.87
I feel physically ill when I think about the baby. (Item 16)	Despair	.90		.84
I blame myself for the baby's death. (Item 23)	Despair	.88		.82
I feel somewhat apart and remote, even among friends. (Item 28)	Coping Difficulty	.92		.89
I feel empty inside. (Item 3)	Active Grief		.79	.79
I very much miss my baby. (Item 10)	Active Grief		.85	.85

Table 5

Cronbach's Alpha of the PGS-6 and of the factors from PGS-6

	Cronbach's Alpha values
PGS-33	.96
PGS-6	.89
F1 Despair and Coping Difficulties from PGG-6	.94
F2 Active Grief from PGS-6	.76

Figure 1

Network representation of PGS-6 (six items)

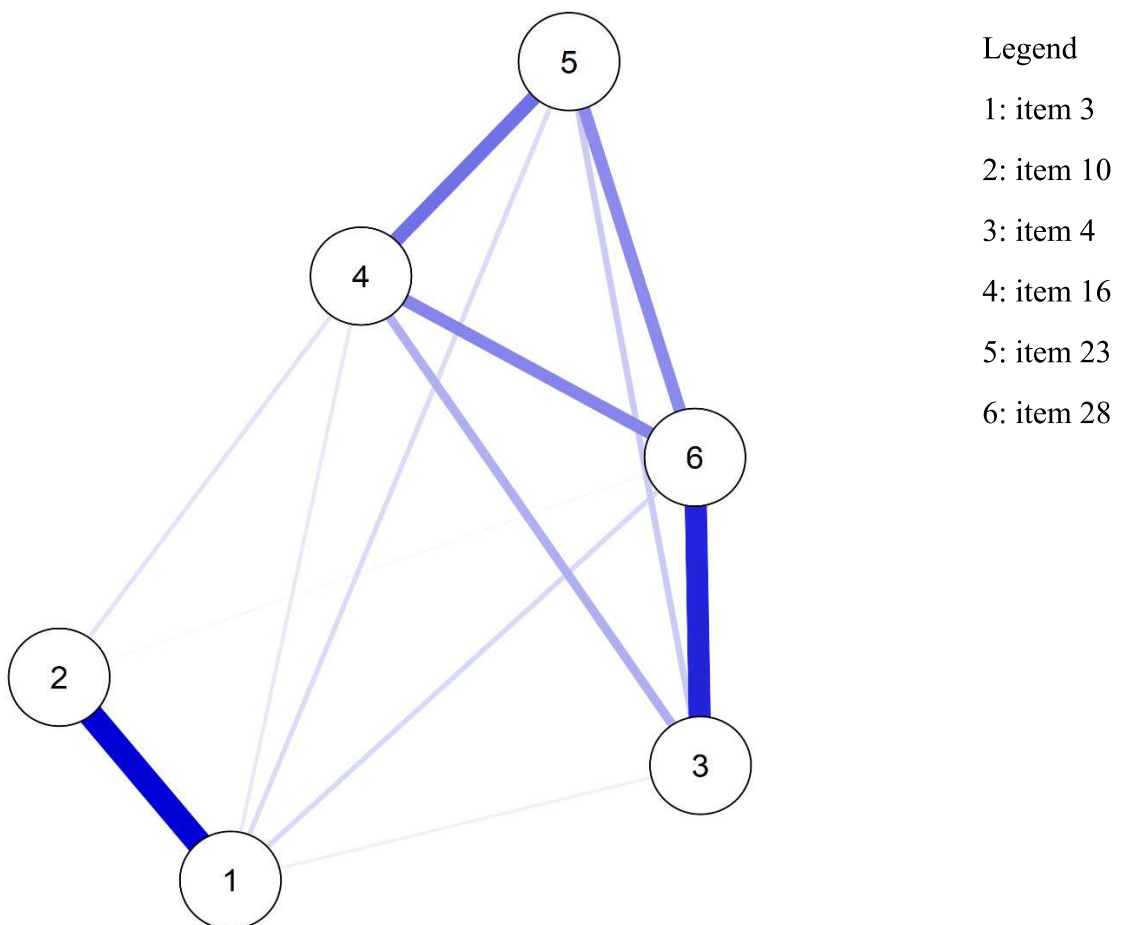


Figure 2

Graphs of the ROC curve of PGS-33 and PGS-6 for cut-off points for complicated grief, PTSD and depression

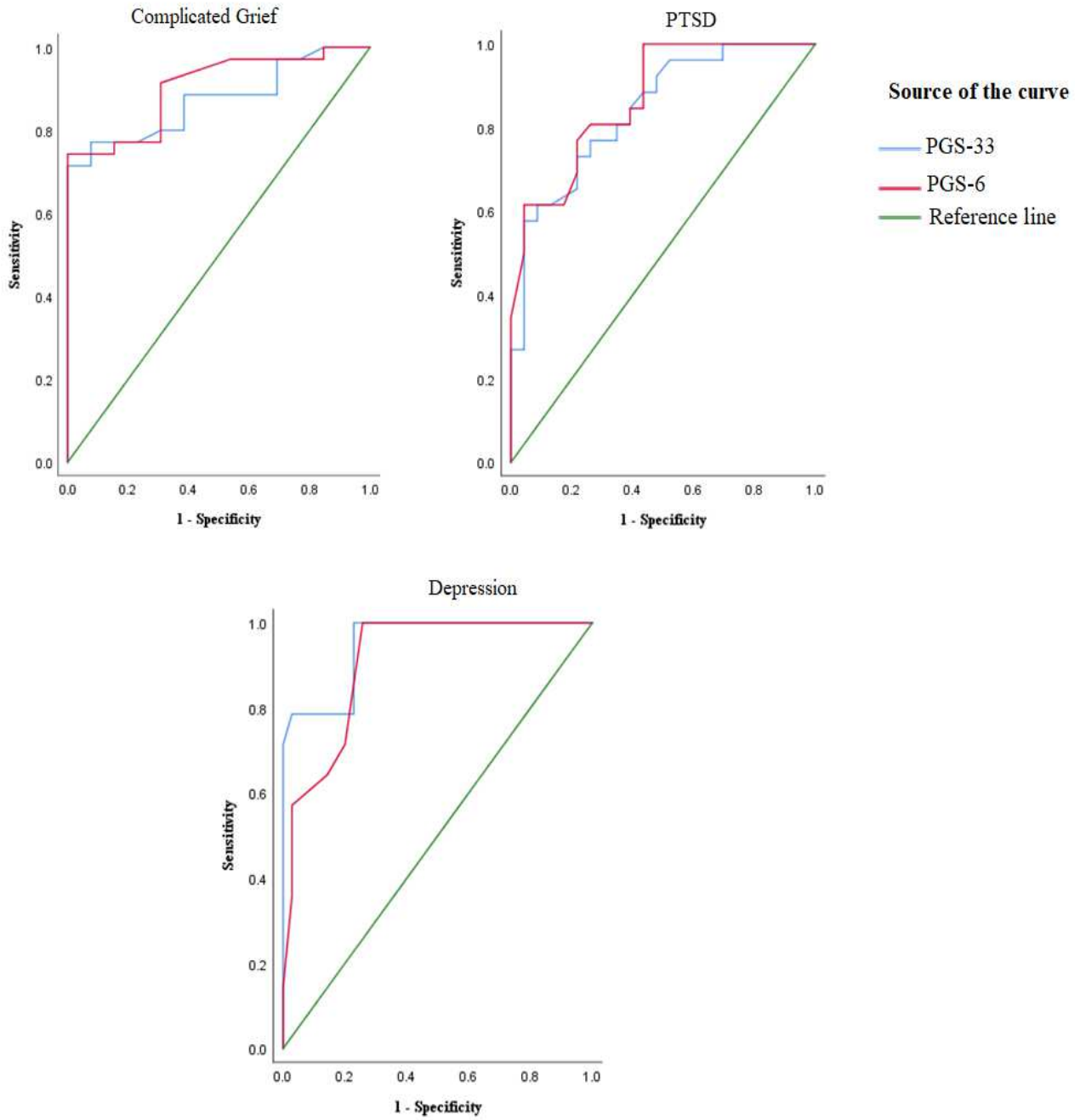


Table 6*Possible cut-off points for PGS-6 and PGS-33 for complicated grief, PTSD and depression*

	Complicated grief		PTSD		Depression		
	Cut-off	Sensitivity	Specificity	Sensitivity	Specificity	Sensitivity	Specificity
PGS-33	≥ 79	80	76.9	-	-	-	-
	≥ 82	77.1	84.6	-	-	-	-
	≥ 88	77.1	92.3	-	-	-	-
	≥ 93	74.3	92.3	-	-	-	-
	≥ 95	71.4	92.3	-	-	-	-
	≥ 112	-	-	65.4	78.3	-	-
	≥ 116	-	-	61.5	87	-	-
	≥ 118	-	-	61.5	91.3	-	-
	≥ 120	-	-	57.7	91.3	-	-
	≥ 121	-	-	57.7	95.7	-	-
	≥ 105	-	-	-	-	100	71.4
	≥ 108	-	-	-	-	100	74.3
	≥ 112	-	-	-	-	100	77.1
	≥ 116	-	-	-	-	78.6	77.1
	≥ 118	-	-	-	-	78.6	80
PGS-6	≥ 16	77.1	69.2	-	-	-	-
	≥ 17	77.1	76.9	-	-	-	-
	≥ 18	77.1	84.6	-	-	-	-
	≥ 19	74.3	84.6	-	-	-	-
	≥ 20	74.3	90	-	-	-	-
	≥ 19	-	-	80.8	65.2	-	-
	≥ 20	-	-	80.8	73.9	-	-
	≥ 21	-	-	77	78.3	-	-
	≥ 22	-	-	69.2	78.3	-	-
	≥ 23	-	-	61.5	82.6	-	-
	≥ 20	-	-	-	-	100	62.9
	≥ 21	-	-	-	-	100	68.6
	≥ 22	-	-	-	-	100	75
	≥ 23	-	-	-	-	85.7	80
	≥ 24	-	-	-	-	71.4	85.7

Table 7

Correlations between PGS-6, factors (factor 1 and 2) from PGS-6 and Inventory of Complicated Grief (ICG), Patient Health Questionnaire-9 (PHQ-9) and Impact of Events Scale-Revised -6 (IES-6)

	PGS-6	F1 from PGS-6	F2 from PGS-6	ICG	IES-6	PHQ-9
PGS-6	-	-	-	-	-	-
F1 from PGS-6	.95***	-	-	-	-	-
F2 from PGS-6	.69***	.44***	-	-	-	-
ICG	.83***	.81***	.68***	-	-	-
IES-6	.70***	.66***	.64***	.55***	-	-
PHQ-9	.80***	.80***	.62***	.73***	.72***	-

*** $p < .001$

Part II

Construction and validation of the Shared Meaning Making Scale (SMMS)

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Abstract

Objective and Methods: the aim of this study is the construction and validation of a scale that evaluates the concept of shared meaning making. The design is transversal, with 234 a sample of women who lived at least a traumatic obstetric experience. The instruments used were: the Shared Meaning Making Scale; the Perinatal Grief Scale; the City- Birth Trauma Scale; the Relationship Assessment Scale; the Impact of Event Scale-6; the Patient Health Questionnaire-9.

Results: It was possible to obtain a unifactorial scale with a high reliability ($\alpha=.93$). Regarding external validity, there was a significant positive correlation with the Relational Assessment Scale. Through network analysis, it was verified that the items with greater centrality were the items 4, 9 and 11.

Conclusion: Shared Meaning Making Scale seemed to be demonstrated as a scale with good psychometric characteristics to evaluate the process of shared meaning making for an event. This scale can prove useful in clinical practice, especially in interventions directed to couples therapy.

Key Words: meaning; remarkable events; perinatal loss; traumatic birth; shared meaning making

Introduction

Meaning is essential to a purposeful and goal-oriented life (Reker & Wong, 1988). However, this process can be interrupted by a negative and stressful event (Lazarus & Folkman, 1984), which can lead to the need to try to find the reason for the event in order to regain the sense of control and to reaffirm or readjust the meaning of life (Skaggs & Barron, 2006). In fact, finding meaning for negative life events is important to maintain mental health (Park, 2007), and individuals who are unable to do it may experience emotional distress and problems with adaptation (Skaggs & Barron, 2006). The attribution of meaning is a process that consists of a description and attribution of causality for an event of our life integrating it into a system of global meaning (O'Connor, 2003).

The creation of meaning can contribute to a new understanding of the world and a new vision of the event that becomes more congruent with the global meaning. Thus, this construction can contribute to a better psychological adjustment after traumatic events if this construction is positive. On the other hand, when this construction of meaning is negative, the psychological adjustment and management of the event can also be negative (Neimeyer, 2001; Neimeyer et al, 2006; Currier et al., 2009).

However, in the experience of the same event, two people can construct an equal or different meaning to each other. When the assigned meanings are quite different and are based on different aspects, if there is no mutual understanding, it may lead to existence of conflicts and greater distancing from conceptions (Gilbert, 1989; Avelin et al., 2013). However, the opposite can happen to, that is, in the presence of close relationships, such as in couples' relationships, it is possible to have a mutual influence in the construction of meaning (Samios & Baran, 2018). This event can occur through the process designed dyadic coping (Bodenmann, 2005). In this process, the elements of the couple are involved in a

construction of meaning for the event among themselves, trying to reduce the discrepancy between the meanings attributed individually, in order to maintain a positive relationship with each other and reduce the individual suffering of each member (Samios & Khatri, 2019). Although this process is very present in couple relationships (Samios & Baran, 2018) it is possible to create a shared meaning with other people, usually with someone with whom a close relationship is maintained, such as the family.

The shared meaning making essentially involves the acceptance and understanding of the different values, beliefs and emotions on which the attribution of meaning is based. Thus, for this process, the two people do not need to have the same opinion or agree with each other's opinion, but rather sharing their perspective and what is meaningful to themselves, always with mutual respect, in order to build a future joint meaning. Therefore, an empathic attitude is necessary (Broome, 1991). This shared meaning can be an aid to dealing with negative events. According to Patterson (2005) families dealing with stressful events, such as trauma or loss, tend to build a common understanding of the causes, effects and implications of the event, and these attributions of meanings are important in adapting to the event. In fact, in addition to a better adaptation to the event, this sharing can also contribute to strengthening the relationship between the individuals involved (Samios & Baran, 2018).

In this sense, the inclusion of the concept of shared meaning making in psychological interventions directed to individuals who lived an adverse situation may prove relevant. In a study conducted by Rocha et al., (2018), with a population that had undergone a medical interruption of pregnancy, it was found that after performing a Narrative Cognitive Intervention focused on the construction of meanings for the event, individuals demonstrated improvements in the level of the psychopathology developed.

Therefore, there is a need for scales that allow the evaluation of the process of shared meaning making. Thus, our study aims to constructing a scale (Shared Meaning Making Scale (SMMS)) that aims to evaluate the ability to construct shared meanings about a landmark event with someone significant and validate the SMMS for a Portuguese sample.

Methods

Participants

The sample is subdivided into two subgroups, both consisting of women who experienced at least one obstetric complication (traumatic childbirth and/or pregnancy loss).

Sample 1, consisted by 93 women, aged between 18 years and 63 years ($M = 30.98$; $SD = 8.37$). Of the sample, 37.6 % are married, 34.4% are single, 23.7% cohabiting and 4.3% are divorced. The majority of the women are childless (58.1%) and have higher education (55.9%).

Sample 2, consisted by 121 women, aged between 22 years and 42 years ($M = 35.43$; $SD = 4.20$). In the sample, 69.4% are married, 26.7% cohabiting, 2.5% are single and 1.7% are divorced. The majority of the women have two children (57.7%). Regarding to the level of education, 35.5% have higher education, 43.8% have 12th grade, 18.2% have 9th grade and 2.5% have 6th grade.

The total of the sample is constituted by 214 Portuguese women, with ages between 18 years and 63 years ($M = 34.44$; $SD = 7.49$). Regarding the support perceived after the occurrence of adverse event, 75.6% of the participants reported feeling supported by someone significant and the main sources of support for the husband/partner and family (Table 1).

Instruments

Questionnaire of Socio-demographic data: was built with the goal of collecting demographic information, such as, age, marital status, qualifications.

The Relationship Assessment Scale (RAS) (Hendrick et. al., 1998) aims to assess the level of satisfaction with the loving relationship that the individual maintains with the partner. It consists of 7 items and has a Likert response format ranging from 1 to 5 (1 = “low” and 5 = “high”). The highest scores indicate a higher relational satisfaction, namely scores equal to or higher than four. The Portuguese version translated by Santos et al. (2000) and reviewed by Lind (2008) presents a good internal reliability, namely a Cronbach's alpha of .93.

Shared Meaning Making Scale (SMMS) aims to evaluate the ability to construct shared meanings about a landmark event with someone significant. This scale was developed by Rocha et al. (2020). The SMMS is a self-report instrument consisting of 11 items with each item being answered according to a Likert scale that varies between 0 and 3 (0= "never"; 1= "rarely"; 2= "often"; 3= "very often"). The total score ranges from 0 to 33 in which higher values are associated with a greater sharing of meaning for a remarkable event.

Impact of Events Scale-Revised-6 (IES-6) (Thoresen et al., 2010) is a screening instrument that the evaluate the symptoms and difficulties related to posttraumatic stress in both clinical and non-clinical populations (Thoresen et al, 2010). It consists of 6 items and has a Likert response format ranging from 1 to 5 (1= "never"; 2= "a little"; 3= "moderately"; 4= "many times"; 5= "extremely"). The cut-off for the Portuguese population is 12.5, having a Cronbach's alpha of .84 for the total scale (Lopes & Rocha, 2013).

Patient Health Questionnaire-9 (PHQ-9) (Kroenke et al., 2001) aims to evaluate the symptoms of depression and their severity (Torres et al., 2013). It consists of a subset of 9

items, with a 4-point Likert type answer (0 = “never”; 1 = “several days”; 2 = “more than half the number of days”; 3 = “almost every day”). The Portuguese version of this instrument showed good psychometric characteristics, namely a .86 Cronbach's alpha (Torres et al., 2013).

City – Trauma Birth Scale (CTBS) (Ayers et al., 2018) aims to assess the existence of Posttraumatic Stress Disorder after birth. It is a scale of self-report and is divided into three subscales: the subscale of intrusions, the subscale of cognitions and negative mood, the subscale of hyperactivation. The Portuguese version presents a good reliability, namely a Cronbach's alpha of .97 for the total scale (Gonçalves & Rocha, 2020).

Perinatal Grief Scale (PGS) (Potvin et al., 1989): aims to evaluate the symptomatology of current perinatal grief (Potvin et al., 1989). The scale is divided into three subscales: Active Grief, Despair and Coping Difficulties. Composed by 33 items, it presents a 5-point Likert response format (1= “strongly agree”; 2= “agree”; 3= “neither agree nor disagree”; 4= “disagree”; 5= “strongly disagree”) (Potvin et al., 1989). The score can range from 22 to 165 points, where a score higher than 91 may reflect a clinically more significant level of suffering (Toedter et al., 2001). In the Portuguese version, the scale has a Cronbach's alpha of .96 for the total scale (Rocha, 2004).

Procedure

This study was approved by the Ethics Committee of the Tâmega e Sousa Hospital Center, CHTS, after being the subject of analysis by the same. However, due the Covid-19 pandemic, presential data collection was suspended. Thus, data collection was exclusively *online*, by *LimeSurvey* program.

The inclusion criteria in this study were: to be women; having experienced at least one traumatic childbirth and / or perinatal loss; having at least 18 years. For all the participants informed consent was applied, which contained information about the nature and objectives of the study, as well as certification of volunteer status and the confidentiality of the personal data.

Statistical analysis

Reliability analysis

To perform the analysis of the instrument's reliability, the Cronbach's alpha was calculated. We also calculated the correlation between each of the eleven items of the SMMS.

Convergent external validity

To determine the analysis of the external validity of the SMMS, *Pearson* correlations were performed between the SMMS and the following instruments: Relational Assessment Scale, Scale of Impacts of Events-6, Questionnaire on Patient Health -9, City-Birth Trauma Scale and Perinatal Grief Scale.

Factorial Analysis

In order to determine which factors explain the covariance between the components of the instrument, exploratory factor analysis was used.

Network Analysis

Network Analysis was performed in order to verify the existence of connectivity between the items of the instrument (SMMS) and to verify the centrality of the respective items.

Results

General Characteristics of the scale

The SMMS is an instrument composed by 11 items, which evaluate the process of shared meaning making. As we perform the analysis of the general characteristics of the scale, we found that the average result 19.25 ($SD = 7.45$).

Reliability analysis

The reliability of the Shared Meaning Making Scale was accomplished through Cronbach's alpha. Cronbach's alpha calculated for the scale was .93, demonstrating a very good reliability index (Pestana & Gageiro, 2008).

Correlations between items of SMMS

Through the correlations between the items, it was found that most of the items had moderate positive correlations with each other. However, it was possible to verify the existence of weak positive correlations between items 5 and 6 ($r(214) = .29, p < .001$) and between items 10 and 5 ($r(214) = .30, p < .001$). There are also high positive correlations between items 4 and 3 ($r(214) = .76, p < .001$), between items 8 and 3 ($r(214) = .78, p <$

.001), between items 8 and 4 ($r(214) = .73, p < .001$) and between items 8 and 7 ($r(214) = .73, p < .001$) (Table 2).

Convergent external validity

The evidence of external validity is observed through the existence of positive and negative correlations between the SMMS and other instruments. Thus, it was verified that SMMS presents high significant positive correlations with RAS ($r(214) = .72, p < .001$).

On the other hand, there are moderate significant negative correlations with IES-6 ($r(214) = -.59, p < .001$), with PHQ-9 ($r(214) = -.63, p < .001$), with ETN ($r(214) = -.64, p < .001$) and PGS ($r(214) = -.63, p < .001$) (Table 3).

Factorial Analysis

Before we carry out the exploratory factor analysis, we proceeded to the Barlett test ($p < .001$) and the Kaiser-Meyer-Olkin test, which showed the value of .94. Both tests demonstrated the suitability of the sample for factor analysis. The obtained results in factor analysis show that the factor loadings of each item present values higher than .40 for a single component, that is, for a single factor. Thus, we verified that the constituent items of the scale are presented in a unifactorial structure (Table 4).

Network Analysis

Network analysis allows the analysis the set of connections between a set of elements (nodes), in which the central elements, as a rule, are more influential than the others (Borsboom & Cramer, 2013).

We concluded that the 11 items establish 40 connections of the 55 possible connections. The three items that demonstrate greater centrality are item 4 (“Including the partner's point of view enriches my perspective”), item 9 (“I don't feel alone when sharing what happened”) and item 11 (“When sharing what happened, new perspectives emerge”) (Figure 1).

Discussion

Our study had the main goal to perform the construction and validation of the Shared Meaning Making Scale, which aims to evaluate the process of the construction of shared meanings for an adverse event.

The results indicate that the instrument has very high reliability index, namely, a Cronbach's alpha of .93 (Pestana & Gageiro, 2008). In addition, it was found that most of the correlations between the items of the scale were positive moderate correlations, which is a good indicator of internal consistency (Carvalho et al., 2011). Thus, it appears that the scale shows good internal consistency.

Regarding to the factor analysis, the results show that the instrument is unifactorial, which indicate that the items of the scale have the same underlying construct (Brown, 2006).

In relation of external validity, it verifies that the SMMS has positive correlations with The Relationship Assessment Scale and negative correlations with Perinatal Grief Scale, Impact of Event Scale-6, Patient Health Questionnaire-9 and City- Birth Trauma Scale.

The Network analysis revealed that the most central items of the SMMS are related with mutual sharing and the including the others perspectives, and these items seem to have a greater possibility of influence from the other items (Borsboom & Cramer, 2013).

Conclusion

This study has the main goal of developing the Shared Meaning Making Scale and validate it for a Portuguese sample. Shared Meaning Making is a behaviour between two or more individuals which consists of sharing the values, beliefs and opinions on which individuals based to assign meaning to an adverse event, always on the basis of respect, understanding and acceptance of the other.

The value of Cronbach's alpha of SMMS, indicating good reliability, the existence of moderate correlations between the items of the scale, the unifactorial structure of the scale present itself as strengths of the instrument. Because it presents a brief scale, and by the good psychometric characteristics presented, it presents itself as a good scale for application in clinical practice. Thus, this instrument presents itself as an asset in therapeutic interventions, especially in psychotherapies involving families and / or couples who have experienced some traumatic event.

The main limitations of this study are: the small sample size; the fact that it contains only individuals belonging exclusively to a clinical population, namely, women who suffer obstetric complications and the fact that data collection was performed online. All this can limit the generalization of results.

For a future investigation it is necessary more male participants, in order to compare both genders, but it is also necessary a comparative study with non-clinic populations, in order to include a greater variability of population.

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Tables and Figures

Table 1

Clinical and Sociodemographic Characteristics

	<i>Sample 1</i>				<i>Sample 2</i>			
	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Sociodemographic data								
Age	-	-	30.98	8.37	-	-	35.43	4.20
Marital Status	-	-	-	-	-	-	-	-
Single	32	34.4	-	-	46	17.8	-	-
Married	35	37.6	-	-	175	67.8	-	-
Cohabiting	22	23.7	-	-	30	11.6	-	-
Divorce	4	4.3	-	-	7	2.7	-	-
Level of Education	-	-	-	-	-	-	-	-
4 th grade	2	2.2	-	-	-	-	-	-
6 th grade	-	-	-	-	3	2.5	-	-
9 th grade	11	12.9	-	-	22	18.2	-	-
12 th grade	28	30.1	-	-	53	43.8	-	-
Higher Education	52	55.9	-	-	43	35.5	-	-
Professional Situation	-	-	-	-	-	-	-	-
Employed	69	74	-	-	254	98.4	-	-
Unemployed	24	26	-	-	4	1.6	-	-
Number of children	-	-	-	-	-	-	-	-
Childless	54	58.1	-	-	2	1.7	-	-
1 child	23	24.7	-	-	45	37.2	-	-
2 or more children	16	17.2	-	-	74	61.2	-	-
Clinical Data								
Type of perinatal losses	34	47.1	-	-	34	13.2	-	-
Miscarriage	26	28	-	-	26	10.1	-	-
TOP*	2	2.2	-	-	2	.8	-	-
VLP**	2	2.2	-	-	2	.8	-	-
Loss of late pregnancy	4	4.3	-	-	4	1.6	-	-
Number of pregnancy losses	34	47.1	-	-	-	-	-	-
1 pregnancy loss	13	14	-	-	-	-	-	-
2 pregnancy losses	15	16.1	-	-	-	-	-	-
3 or more pregnancy losses	6	17.6	-	-	-	-	-	-
Complications in childbirth	-	-	-	-	-	-	-	-
Long term	-	-	-	-	43	35.5	-	-

Severe bleeding	-	-	-	-	6	5.0	-	-
Severe lacerations	-	-	-	-	25	20.7	-	-

* *termination of pregnancy*; ** *voluntary loss of pregnancy*

Table 2

Pearson's correlation between SMMS's items

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Q1	-	-	-	-	-	-	-	-	-	-	-
Q2	.42***	-	-	-	-	-	-	-	-	-	-
Q3	.60***	.54***	-	-	-	-	-	-	-	-	-
Q4	.52***	.49***	.76***	-	-	-	-	-	-	-	-
Q5	.52***	.40***	.49***	.44***	-	-	-	-	-	-	-
Q6	.45***	.41***	.56***	.54***	.29***	-	-	-	-	-	-
Q7	.46***	.45***	.63***	.63***	.39***	.60***	-	-	-	-	-
Q8	.62***	.53***	.78***	.73***	.44***	.64***	.73***	-	-	-	-
Q9	.58***	.52***	.68***	.69***	.43***	.53***	.57***	.72***	-	-	-
Q10	.31***	.53***	.48***	.49***	.30***	.40***	.42***	.55***	.51***	-	-
Q11	.49***	.57***	.61***	.64***	.46***	.50***	.56***	.66***	.64***	.58***	-

*** $p < .001$

Table 3*Pearson's correlations between SMMS, RAS, IES-6, PHQ-9, ETN and PGS*

	SMMS	RAS	IES-6	PHQ-9	ETN	PGS
SMSS	-	-	-	-	-	-
RAS	.72***	-	-	-	-	-
IES-6	-.59***	-.41***	-	-	-	-
PHQ-9	-.63***	-.54***	.73***	-	-	-
ETN	-.64***	-.44***	.83***	.87***	-	-
PGS	-.63***	-.61***	.67***	.86***	.47***	-

*** $p < .001$

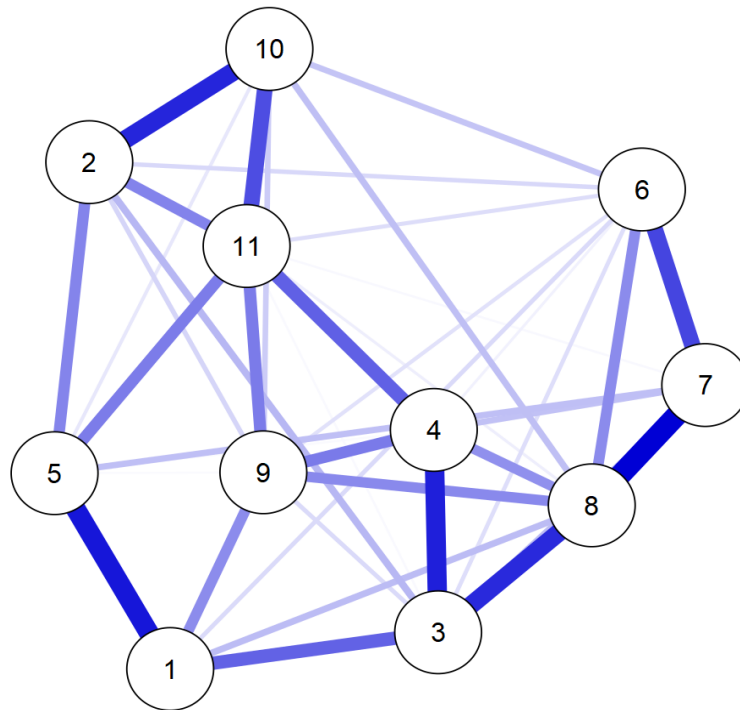
Table 4

Individual item statistics, alpha if item is deleted and factorial analysis (factor loadings and communalities) for Shared Meaning Making Scale

	<i>M(SD)</i>	Cronbach alpha if item is deleted	F 1	Communalities
I can share details that make me understand better what happened. (item 1)	1.74(.84)	.92	.67	.55
I like to know what the other thinks about what happened. (item 2)	1.95(.84)	.92	.65	.58
When I talk to a partner, I easily feel that I have become more clarified. (item 3)	1.76(.90)	.92	.85	.27
Including the partner's point of view enriches my perspective. (item 4)	1.94(.88)	.92	.82	.32
It is possible to be creative when I talk about what happened. (item 5)	1.20(.94)	.93	.55	.70
When I share the meaning for what happened, it has an impact with the other involved. (item 6)	1.64(.83)	.92	.67	.55
Although we think differently, we managed to value the other person's point. (item 7)	1.98(.81)	.92	.75	.44
When I talk to the partner about what happened I feel that everything makes more sense. (item 8)	1.88(.97)	.91	.90	.20
I don't feel alone when sharing what happened. (item 9)	2.01(1.01)	.92	.81	.35
I feel that the partner's perspective gets different when I share mine. (item 10)	1.54(.89)	.93	.61	.63
When we shar what happened, new perspectives emerge. (item 11)	1.61(.86)	.92	.78	.40

Figure 1

Network Analysis representation of SMMS



Legend

- 1: item 1
- 2: item 2
- 3: item 3
- 4: item 4
- 5: item 5
- 6: item 6
- 7: item 7
- 8: item 8
- 9: item 9
- 10: item 10
- 11: item 11

Part III

Shared meaning making and couples relationship after perinatal loss

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Abstract

Objective and Method: We sought to understand the effect of shared meaning making on the quality of the couples relationship and on the development of psychopathology after perinatal loss in women. The study design is transversal, correlational, with a sample constituted of 93 women. The used instruments were: the Inventory Complicated Grief; the Perinatal Grief Scale; the Impact of Event Scale-6; the Patient Health Questionnaire-9; the Shared Meaning Making Scale and the Relationship Assessment Scale. The data collection was exclusively *online*.

Results: There was an influence of certain sociodemographic variables on the disturbance variables. Significant positive correlations were observed between the disturbance variables and significant negative correlations between the shared meaning making and the disturbance variables. The shared meaning making contributes to the explanation of the total variance of all disturbance variables.

Conclusion: The shared meaning making has evidence to be a central aspect in interventions that aimed preventing / reducing the symptomatology after perinatal loss. The development of programs focused on this dimension is reinforced, despite the lack of analysis of the effects on the partners.

Key words: shared meaning making; couple relationship; perinatal grief; complicated grief; depression; posttraumatic stress

Introduction

Perinatal loss includes fetal loss (early or late), loss of the baby during birth or loss of the baby after birth (DeBackere et al., 2008), namely until 28 days of living (Armstrong et al., 2009). This event can be conceptualised as a traumatic event for parents and can have serious consequences on their mental health, which may impact upcoming pregnancies (Heller & Zeanah, 1999; Swanson, 1999; Armstrong, 2001, 2007) i.e. by increasing the risk of developing post-natal depression (Armstrong 2007; Blackmore et al., 2011). In addition, perinatal loss is often seen by mothers as something which challenges a sense of safety, control and trust in procreative ability (Engelhard, 2004).

Perinatal grief has unique characteristics, since, frequently the loss is sudden and unexpected, with shortage of memories, of experiences to remember and a body to say goodbye (Gaudet et al., 2010; Kersting & Wagner, 2012). Thus, it is common that perinatal grief leads to the development of: depression (Armstrong, 2002; Armstrong et al., 2009; Gausia et al., 2011; Hutti et al., 2011), anxiety (Armstrong, 2002; Armstrong et al., 2009; Gaudet et al., 2010; Hutti et al., 2011), posttraumatic stress (Engelhard, et al., 2001; Jind, 2003; Armstrong, et al., 2009; Bennett et al., 2012), stress after birth, less bonding (Armstrong & Hutti, 1998; Gaudet et al., 2010) and anxiety in next pregnancies, changes in couple relationships (Gold et al, 2010; Hutti et al., 2015). In addition, after perinatal loss, women commonly develop complicated grief (Kersting & Wagner, 2012).

Both elements of the couple go through an experience of grief after perinatal loss, and may experience high levels of psychological distress (Swanson, 1999; Armstrong, 2001). However, women often experience grief more intensely (Callister, 2006). Because parents face their grief simultaneously, they can be deprived of their individual resources and, consequently, might be too distressed to support each other or handle their partner's

intense grief (Rosenblatt, 2000). This lack of support from the partner can influence the perception of support from the other and, consequently, the dyadic adjustment (Albuquerque, et al., 2018). In addition, men and women often experience different grieving reactions after perinatal loss (Menke & McClead, 1980), such as emotional expressiveness (Callister, 2006) and the search/dismiss of social support (Evans et al., 1997). These coping differences may lead to communication problems, couple's conflicts and even couple's separation (Murphy et. al., 2003; Leon, 2008). However, the opposite can happen to, that is, the marital relationship can influence how the couple adapts to the loss (Vances et al., 2002). In turn, couples who communicate and share, show less severe grief reactions and greater marital satisfaction (Büchi et al., 2009). Couples with these behaviours, after an adverse event, can unite in the construction of a meaning among themselves for this event, being this process designed dyadic coping (Bodenmann, 2005). In this process, the couples members are involved in building meaning for the event, trying to reduce the discrepancy between individual perspectives, in order to maintain a positive relationship and reduce the individual suffering of each member (Samios & Khatri, 2019).

Losing a loved one is a significant life event that drives many individuals to initiate in the meaning-making process (Park et al., 2001). In fact, many people who experience a loss of someone significant construct a new meaning of life during the resolution phase of grief, suggesting that meaning is a key component of coping with loss (Michl et al., 2013). In perinatal loss, the searching and the attribution of meaning has been described as an important aid for better adaptation (Tunaley et al., 1993; Gilbert, 1997) and for maintaining physical and mental health after its occurrence (Vinje et al., 2017). In fact, in a study by Rocha et. al. (2018), with 91 people who had experienced a termination of pregnancy, the authors found that an intervention by Cognitive Narrative Therapy focused on the construction of meanings for the loss proved positive results for a better adaptation to the

loss, decreasing the associated psychopathology. In addition, according to Patterson (2005) families that deal with an adverse event and that build a common understanding of the causes and effects of this event seems to have a better adaptation.

In this sense, in our study we conceptualize the concept of shared meaning making, in this case focused on perinatal losses. This process consists of a behaviour in which, at least two individuals share the different values, beliefs and emotions on which the meaning assignments are based, always on the basis of mutual acceptance and understanding. In this process, individuals do not need to have an equal opinion or agree with the opinion of the other, but rather to share their perspective and what is meaningful to them with respect for the other, in order to build a future shared meaning.

Thus, the central goal of this study is to evaluate the effect of the shared meaning making (in the couple) on the quality of the couple's relationship and on the symptoms of complicated grief, perinatal grief, depression and posttraumatic stress after perinatal loss, in women. We also evaluate the influence of some sociodemographic and clinical variables on the development of symptoms of grief, depression and posttraumatic stress.

Method

Study design

This study is a transversal, correlational study that aims to evaluate the effect of shared meaning making (in the couple) on the quality of the couples relationship and on the development of psychopathology (complicated grief, depression and posttraumatic stress) after perinatal loss, in women.

Participants

This sample consisted of 93 Portuguese women, with ages between 18 and 63 years old ($M = 30.98$; $SD = 8.37$). The majority of the sample have completed higher education (55.9%) and are employed (74%). Regarding to the marital status, 37.6% of the participants are married, 34.4% are single, 23.7% are cohabiting and 4.3% are divorced, with all the participants being heterosexual. The majority of the women are childless (58.1%). All women had already experienced at least one perinatal loss (17.6% experienced 3 or more perinatal loss). Mostly of the women admitted to feel supported after the perinatal loss (70%), being the family and the husband/partner the most mentioned sources of support (Table 1).

Instruments

Questionnaire of Socio-demographic data: was built with the goal of collecting sociodemographic information, such as nationality, age, marital status, qualifications, but also the data relating to the perinatal lost, such as number of perinatal losses.

The Relationship Assessment Scale (RAS) (Hendrick et al., 1998): evaluates the level of satisfaction with the love relation. The scale is unifactorial consisting of 7 items arranged in a 5-point Likert scale, variate between 1 (“low”) and 5 (“high”). The highest scores, namely scores equal or higher than four points, indicate greater relational satisfaction. The Portuguese version was developed by Santos et al. (2000) and later reviewed by Lind (2008) and show a Cronbach's alpha of .93 for women.

Shared Meaning Making Scale (SMSS) (Rocha et al., 2020): has as objective the evaluation of the process of shared meaning making with a significant other. The instrument was developed by Rocha, et al., (2020), consisting of 11 items arranged in a 4-point Likert

scale, (0= “never”; 1= “rarely”; 2= “often”; 3= “very often”). The sum of the score can vary between 0 and 33 points, which a higher punctuation means greater shared meaning about a remarkable event. In the sample for its construction and validation it demonstrated a Cronbach's alpha of .93 for women.

Perinatal Grief Scale (PGS) (Potvin et al., 1989): evaluates the current perinatal grief symptomatology (Potvin et al., 1989). The short version is constituted by 33 items arranged in a 5-point Likert scale (1= “strongly agree”; 2= “agree”; 3= “neither agree nor disagree”; 4= “disagree”; 5= “strongly disagree”) (Potvin et al., 1989). The scale is constituted by three subscales: Active Grief; Coping Difficulty and Despair (Toedter et al., 2001). The sum of the score can vary between 33 and 165 points, where a score above 91 points can be considered to reflect a high degree of grief (Toedter et al., 2001). For the Portuguese population, the instrument shows good psychometric characteristics at the reliability level (Cronbach's Alpha=.96). The internal consistency (Cronbach's Alpha) values were .91 for Active Grief subscale, .90 for the Coping Difficulty subscale and .89 for the Despair subscale (Rocha, 2004).

Impact of Event Scale-6 (IES-6) (Thoresen et al., 2010): has as objective the screening of posttraumatic stress reactions in clinical and non-clinical populations (Thoresen et al, 2010). The instrument is constituted by 6 items arranged in a 5-point Likert scale (1= “not at all”; 2= “a little bit”; 3= “moderately”; 4= “quite a bit”; 5= “extremely”). The cut-off point for the Portuguese population is 12.5. The IES-6 showed a Cronbach's alpha value of .84 for the total scale (Lopes & Rocha, 2013).

Patient Health Questionnaire-9 (PHQ-9) (Kroenke et al., 2001): has as objective evaluate the depressive symptomatology and the severity of the symptomatology (Torres et al., 2013). It is a brief scale, consisting of 9 items arranged of 4-point Likert scale (1=

“never”; 2= “several days”; 3= “more than half the days”; 4= “nearly every day”). The sum of the score can vary between 0 and 27 points where a score between: 0 and 5 points means no symptoms; 6 to 9 points means slight symptomatology; 10 to 14 means moderate symptomatology; from 15 to 19 means moderate to severe symptomatology; and greater than 20 severe symptoms (Kroenke et al., 2001). For the Portuguese population, the instrument shows good psychometric characteristics at the reliability level (Cronbach’s Alpha=.86) (Torres et al., 2013).

Inventory of Complicated Grief (ICG) (Prigerson et al., 1995): evaluates the symptoms of grief often associated with the complicated grief process (Prigerson et al., 1995). The instrument is constituted by 19 items arranged in a 5-point Likert scale (1= “never”; 2 = “rarely”; 3 = “sometimes”; 4 = “frequently”; 5 = “always”). The ICG was translated and validated to the Portuguese population by Frade et al. (2009). In the Portuguese version, the instrument has 5 factors: traumatic difficulties, with Cronbach's alpha of .83; difficulties of separation, with Cronbach's alpha of .87; denial and revolt, with Cronbach's alpha of .88; psychotic scale, with Cronbach's alpha of .63; and depressive scale, with Cronbach's alpha of .56. The Cronbach's alpha of the total scale is .914 (Pacheco, 2010).

Procedure

For data collection we asked for institutional authorization at the Hospital Padre Américo, CHTS. However, due the Covid-19 pandemic, data collection was exclusively *online*, through the *LimeSurvey* program. The study was released through social media and contacts with groups associated with the theme of perinatal loss. Because of ethical questions, it was used an informed consent aiming inform the participants about the study goal, ensuring the anonymity, confidentiality and volunteer status. After the consent from

the participant, the protocol was presented, namely the sociodemographic data form and evaluate instruments. The inclusion criteria were: to be a woman; to have suffered at least one perinatal loss; to be of legal age.

Statistical Analysis

To analyse the characteristics of the sample, measures of frequency, central tendency and deviation were used.

To understand the influence of sociodemographic variables (education level, marital status, number of children) and clinical variable (number of pregnancy losses) on the disturbance variables (complicated grief, perinatal grief, depression and posttraumatic stress), it was performed the independent sample T test.

To study the association between dyadic variables (quality of the couples relationship and shared meaning making) and disturbance variables, it was performed Pearson's correlations. To analyse the contribution of the shared meaning making to explain the quality of the couples relationship it was performed Linear regression analysis, using the enter command. Next, to analyse the contribution of the dyadic variables to explain the disturbance variables it was used hierarchical multiple regression analysis, using the enter command. The independent variables were introduced according to the following sequence: Model 1: quality of the couple's relationship; Model 2: shared meaning making. We also pursuit analyse the contribution of the shared meaning making in the disturbance variables, performing Linear regression analysis, using the enter command.

Finally, to verify the centrality of the variable "shared meaning making" and the number of connections that this variable establishes with the others variables it was used a Network Analysis.

All data were analysed using IBM SPSS 26, with the exception of Network Analysis, which was performed using the JASP 0.12.2.0.

Results

Influence of sociodemographic and clinical variables on disturbance variables

Through the results obtained in the independent sample T test we verify that sociodemographic variables have an influence on disturbance variables. The results are presented in a summary table that resumes the obtained results. A comparison was made between each variable present in each subgroup of sociodemographic variables, that is, the different levels of education were compared with each other, the different marital status to were compared with each other, and the different number of children were compared with each other. A comparison was also made between the different numbers of pregnancy losses (clinical variables) (Table 2).

Highly educated women ($M = 8.75$, $SD = 7.63$) have significantly lower levels of depression compared to other levels of education, namely 4th grade ($M = 17$, $SD = 8.49$), 9th grade ($M = 14.88$, $SD = 10.39$), 12th grade ($M = 12.68$, $SD = 7.85$), $t(30) = 2.24$, $p < .05$.

Childless women have significantly higher levels of psychopathology compared to women with children. Thus, in regard to complicated grief, childless women ($M = 64$, $SD = 15.90$) have higher levels of complicated grief compared to women with one child ($M = 44.40$, $SD = 21.66$) and to women with two or more children ($M = 31.75$, $SD = 3.40$), $t(29) = -3.94$; $p < .001$. Regarding to perinatal grief, childless women ($M = 120.83$, $SD = 18.15$) have higher levels of perinatal grief compared to women with one child ($M = 97.40$, $SD = 41.55$) and to women with two or more children ($M = 69$, $SD = 8.76$), $t(9.91) = -3.07$, p

<.05. Regarding to depression, childless women ($M = 13.58$, $SD = 8.63$) have higher levels of perinatal grief compared to women with one child ($M = 10.29$, $SD = 8.88$) and to women with two or more children ($M = 6.90$, $SD = 4.53$), $t(53) = -2.13$, $p < .05$. In regard to posttraumatic stress, childless women ($M = 13.07$, $SD = 5.80$) have higher levels of posttraumatic stress compared to women with one child ($M = 8.86$, $SD = 7.12$) and to women with two or more children ($M = 7$; $SD = 5.22$), $t(51) = -2.94$, $p < .01$.

Women with children have significantly lower levels of psychopathology compared to childless women. Thus, in regard to complicated grief, women with two or more children ($M = 31.75$, $SD = 3.40$) have lower levels of complicated grief compared to childless women ($M = 64$, $SD = 15.90$) and to women with one child ($M = 44.40$, $SD = 21.66$), $t(26.90) = 7.30$, $p < .001$. Regarding to perinatal grief, women with two or more children ($M = 69$, $SD = 8.76$) have lower levels of perinatal grief compared to childless women ($M = 120.83$, $SD = 18.15$) and to women with one child ($M = 97.40$, $SD = 41.55$), $t(30) = 3.79$, $p < .01$. Regarding to depression, women with two or more children ($M = 6.90$, $SD = 4.53$) have lower levels of depression compared to childless women ($M = 13.58$, $SD = 8.63$) and to women with one child ($M = 10.29$, $SD = 8.88$), $t(26.36) = 2.92$, $p < .01$. In regard to posttraumatic stress, women with two or more children ($M = 7$, $SD = 5.22$) have lower levels of posttraumatic stress compared to childless women ($M = 13.07$, $SD = 5.80$) and to women with one child ($M = 8.86$, $SD = 7.12$), $t(51) = 2.05$, $p < .05$.

Regarding the remaining levels of education, there was no influence on the disturbance variables. The same happens with the variables referring to marital status (single, married and divorced) and the number of pregnancy losses (1 pregnancy loss, 2 pregnancy losses and 3 or more pregnancy losses).

Correlations between disturbance variables and dyadic variables

Pearson's correlations show significant positive correlations between each the disturbance variables and between each the dyadic variables. There are significant positive correlations between complicated grief and depression ($r(93) = .73, p < .001$), between complicated grief and posttraumatic stress ($r(93) = .55, p = .001$) and between complicated grief and perinatal grief ($r(93) = .87, p < .001$). There are also significant positive correlations between shared meaning making and quality of the couples relationship ($r(93) = .82, p < .001$).

It is also observed significant negative correlations between the disturbance variables and the dyadic variables. There are significant negative correlations between quality of the couples relationship and complicated grief ($r(93) = -.47, p < .01$), between quality of the couples relationship and depression ($r(93) = -.53, p < .001$), between quality of the couples relationship and posttraumatic stress ($r(93) = -.34, p < .05$) and between quality of the couples relationship and perinatal grief ($r(93) = -.54, p < .01$). There are also significant negative correlations between shared meaning making and complicated grief ($r(93) = -.66, p < .001$), between shared meaning making and depression ($r(93) = -.70, p < .001$), between shared meaning making and posttraumatic stress ($r(93) = -.46, p = .001$) and between shared meaning making and perinatal grief ($r(93) = -.71, p < .001$) (Table 3).

Contribution of the shared meaning making in the quality of the couples relationship

Linear regression analysis shows that shared meaning making contributes for quality of the couples relationship, explained 66% of total variance (Table 4).

Contribution of the dyadic variables in the disturbance variables

Hierarchical multiple regression, using enter command, shows that Model 1 (quality of the couple relationship) contributes for all the disturbance variables: in the complicated grief, explaining 19% of total variance; in the perinatal grief, explaining 26% of total variance; in the depression, explaining 26% of total variance; and in the posttraumatic stress, explaining 10% of total variance. Thus, women with higher couples relationship quality have lower levels of complicated grief, perinatal grief, depression and posttraumatic stress.

Regarding to model 2, linear regression analysis shows that Model 2 (quality of the couple relationship plus shared meaning making) presents a greater contribution to all disturbance variables: in the complicated grief, explaining 47% of total variance; in the perinatal grief, explaining 51% of total variance; in the depression, explaining 49 % of total variance; and in the posttraumatic stress, explaining 19% of total variance. Thus, women with a higher couple's relationship quality and a greater sharing meaning making have lower levels of complicated grief, perinatal grief, depression and posttraumatic stress (Table 5).

However, we also analyse the individual contribution of shared meaning making in the disturbance variables. The obtained results show that shared meaning making have a significant contribution for all disturbance variables, namely, in the complicated grief explaining 41% of the total variance, in the perinatal grief explaining 48% of the total variance, in the depression explaining 48% of the total variance and in the posttraumatic stress explaining 20% of the total variance (Table 6). Thus, women which have a greater construction of shared meanings with their partner have lower levels of complicated grief, perinatal grief, depression and posttraumatic stress. In fact, singly, shared meaning making gives a considerable contribution for the explanation of all the disturbance variables, being even equivalent to that demonstrated by the quality of the couples relationship together with the construction of shared meaning.

Network Analysis: Analysis of the connection between the variable “shared meaning making” and the disturbance variables and variable “quality of relationship”

The network analysis is, at its core, a set of variables (nodes) that interact through a set of relations and exert potentially causal effects upon each other (Borsboom & Cramer, 2013). Through the network analysis, we can verify that shared meaning making is connected with all the variables (except with variable “posttraumatic stress”), being the variable with greater number of interactions with the other variables. In the network analysis, central symptoms are likely to be more influential than others (Borsboom & Cramer, 2013). Shared meaning making is also the variable of greatest centrality (Figure 1).

Discussion

This study had the main goal to investigate the effect that shared meaning making (between the couple) has on couples relationship and on development of grief, depression and posttraumatic stress after perinatal loss, on women. Thus, this study stands out because, in addition to exploring the role of the quality of the couples relationship in perinatal grief, it is also focused on the concept of shared meaning making, which is quite relatively scarce in the literature related to the perinatal loss theme. Additionally, our study also investigates the influence of some sociodemographic and clinic variables on the development of psychosymptomatology after perinatal loss, in the women.

Consistent with previous research (Neugebauer et al., 1997; Adolfsson et al., 2006; Schwerdtfeger & Shreffler, 2009), our study found that women who don't have children when they suffer perinatal loss appear to have higher levels of complicated grief, perinatal grief, depression and posttraumatic stress after perinatal loss. However, the idea that the presence of children at the time of loss can help adaptation is still controversial (Beil, 1992;

Engler, 1999; Engler & Lasker, 2000; Bhat & Byatt, 2016). In this study, it was found that women who have two or more children appear to have lower levels of complicated grief, perinatal grief, depression and posttraumatic stress, which is consistent with previous studies (Beil, 1992; Neugebauer et al., 1997; Wijngaards-de Meij et al., 2005; Bhat & Byatt, 2016). On the other hand, having only one child has not shown to have a significant impact on the disturbance variables. These results may be related to the fact that motherhood often plays a central role in a woman's identity (Thoits, 1991; Rogers & White, 1998), but also because mothers may want to provide a companion for their child or wish to have a child of a specific gender and / or feel that is necessary more than one child to suppress their maternal needs (Callan, 1985). This study also found that the fact that women have a higher education level seem to have a negative influence the development of depressive symptoms after perinatal loss. Individuals with higher education levels may have lower levels of depression (Derogatis et al., 1971; Craig & Van Natta, 1979), since they are usually inserted in more cohesive social structures and have greater capacity for expressiveness (Kawachi et al., 1997) and emotional regulation (Vaz et al, 2008), which may function as protective factors in the experience of difficult situation, as perinatal loss.

In this study, it was also found that higher levels of complicated grief seem to be associated with higher levels of psychopathology, namely higher levels of depression and posttraumatic stress, which is consistent with previous studies (Armstrong et al., 2009; Sutan et al., 2010; Gausia et al., 2011; Heazell et al., 2016).

In our study, we also observed the importance of the quality of couples relationship in the adaptation to perinatal loss. Consistently with other studies (LaRoche et al., 1984; Mekosh-Rosenbaum & Lasker, 1995; Nicol et al., 1986; Kagami et al., 2012; Scheidt et al., 2012), we verify that the quality of couples relationship seems to be related with lower levels of depression, complicated grief, perinatal grief and posttraumatic stress after perinatal loss.

In fact, the quality of the couples relationship presented itself as a variable with considerable capacity in explaining the development of psychopathology after perinatal loss. Thus, it seems that women who have a higher quality couple relationship demonstrate having lower levels of symptoms. In a satisfactory couple relationship, certain behaviours are often present (Karpel, 1994) that are described as positive in adaptation to the loss of a child, such as, communication (Goldberg, 1973; LaRoche et al., 1984), sharing feelings and mutual support (Goldberg, 1973; Helmrath & Steinitz, 1978).

Furthermore, we also investigate the importance of constructing shared meanings after perinatal loss. It was found that this process was positively associated with the quality of the couple relationship, demonstrating an essential contribution to the quality of the couples relationship after perinatal loss. That is, it seems that women who perform a greater shared meaning making with their partner after perinatal loss, maintain a better relationship with their partner. These results may be related to the fact that shared meaning making implies a presence of behaviours that have been shown by literature as important factors so that the quality of the couple relationship is maintained after the loss of a child, such as sharing (Avelin et al., 2013), communication (Koocher, 1986; Kamm & Vandenberg, 2001), communication about the loss (Dyregrov & Dyregrov, 2015), emotional support (Gilbert, 1996; Avelin et al., 2013) and acceptance (Cacciatore et al., 2008a; 2008b; Avelin et al., 2013). Furthermore, as Samios and Baran (2018) said, after a negative familiar event, the families that share narratives about the event can strengthen the relationship between them.

Finally, the role of shared meaning making in the adaptation to perinatal loss in women was investigated. Finding a meaning after an adverse event, such as perinatal loss, is described as something positive for its adaptation (Gilbert, 1997), essentially when these are unexpected and traumatic (Davis et al., 2000). Our results showed that the combination of the quality of the couples relationship with the shared meaning making seems to present

itself as something important in the adaptation to perinatal loss, showed a considerable contribution on the explanation the development of psychopathology after perinatal loss. That is, women who have a good quality of relationship and who make shared meanings with their partner seemed to have better adaptation to loss.

However, our results highlight the shared meanings making when compared to the quality of the couples relationship. The results showed that this process, in isolation has an equivalent contribution for the explanation of psychopathology to that observed by the set of both factors (quality of the relationship and shared meaning making). In other words, the shared meaning making seems to have a greater influence on the prediction of psychopathological development after perinatal loss, being associated with lower levels of perinatal grief, complicated grief, depression and posttraumatic stress after the loss. In this sense, it seems that this process stands out for a better adaptation to perinatal loss, in which the woman's who perform a greater shared meaning making seem to have a better adaptation to the loss of their child. Previous research has already showed that individuals who realize greater meaning-making have not only lower levels of depression (Hayes et al., 2005) and of complicated grief (Currier et al., 2006), but also better psychological adjustment (Neimeyer, 2019). Furthermore, in the shared meaning making are present behaviours that have been described as essential for adaptation to perinatal loss, such as the encounter of a meaning (Davis et al., 2000), communication, mutual support (Goldberg, 1973; Helmrath & Steinitz, 1978; LaRoche et al., 1984), narrative of stories of the lost child (Nadeau, 2001), acceptance (Hutti, 2005), but also sharing narratives, sharing and mutual respect (Nadeau, 2001).

The emphasis on the shared meaning making in adaptation to perinatal loss may be related to the fact that satisfaction with the relationship does not necessarily imply the presence of union and cohesion between the couple. However, for the shared meaning

making happen after an adverse event there is a need of these feelings among the elements of the couple. Only in this way it is possible to constructively resolve different opinions with the simultaneous realization of mutual support, something already described as essential in adapting to loss (Carvalho & Meyer, 2007; Schuler et al., 2012).

Conclusion

The results of this study demonstrate that after perinatal loss there is an association between the intensity of the mother's grief levels and the development of psychopathologies. It was also possible to observe the relation between the realization of the shared meaning making and a higher quality of a couple relationship after perinatal loss. In turn, both aspects, especially the shared meaning making, are associated with less intense levels of psychopathology after perinatal loss. Based on the results of this study, we may consider the role of shared meaning making as a relevant aspect to be included in interventions aimed the reduce and/or prevent symptomatology after perinatal loss. However, interventions involving both elements of the couple are highlighted, namely programs focused on this dimension. Although, there is a need for an analysis of these effects on partners.

Thus, this study has some limitations, such as: lack of a male perspective regarding the quality of a couple relationship; sample size, which is quite limited; the fact that data collection was exclusively online, which required computer skills and access to the internet by the participants; and finally, the fact that there is no knowledge of the presence of psychopathology prior to perinatal loss. In future studies, the need for a larger sample is highlighted, with the inclusion of male participants, such as the including data collected in the presential way.

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Tables and Figures

Table 1

Sociodemographic and Clinical characteristics

	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Sociodemographic data				
Age	-	-	30.98	8.37
Marital Status	-	-	-	-
Single	32	34.4	-	-
Married	35	37.6	-	-
Cohabiting	22	23.7	-	-
Divorced	4	4.3	-	-
Education level	-	-	-	-
4 th grade	2	2.2	-	-
9 th grade	11	12.9	-	-
12 th grade	28	30.1	-	-
Higher Education	52	55.9	-	-
Professional Situation	-	-	-	-
Employed	69	74	-	-
Unemployed	24	26	-	-
Number of children	-	-	-	-
Childless	54	58.1	-	-
1 child	23	24.7	-	-
2 or more children	16	17.2	-	-
Clinical data				
Type of pregnancy loss	34	47.1	-	-
Miscarriage	26	28	-	-
TOP *	2	2.2	-	-
Voluntary TOP**	2	2.2	-	-
Late pregnancy loss	4	4.3	-	-
Number of pregnancy loss	34	47.1	-	-
1 pregnancy loss	13	14	-	-
2 pregnancy losses	15	16.1	-	-
3 or more pregnancy losses	6	17.6	-	-

*Note: * termination of pregnancy; ** voluntary termination of pregnancy*

Table 2*Summary table for independent sample T test*

Sociodemographic variables	Complicated grief			Perinatal Grief			Depression			Posttraumatic Stress		
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Education level												
4 th grade	51.50	31.82	.38	103	46.67	.39	17	8.49	-.94	12	7.07	-.22
9 th grade	58.25	20.42	-.17	121.50	40.02	-.82	14.88	10.38	-1.23	9.63	7.05	.57
12 th grade	61.19	17.04	-1.33	116.19	22.17	-1.12	12.68	7.85	-.83	11.82	5.97	-.84
Higher Education	49.11	22.69	1.39	99.10	29.46	1.69	8.75	7.63	2.24*	10.55	6.95	.36
Marital status												
Single	39.51	4.50	1.29	116.67	6.69	-.38	9.45	2.54	.91	12.20	2.59	-.69
Married	56.25	21.55	.12	114	7.52	-.66	13.04	9.04	-1.23	11	6.32	-.08
Divorced	77	8.49	-1.54	129	16.97	-.95	17.50	10.61	-.82	9	8.49	.33
Number of children												
No children	64	15.90	-3.94***	120.83	18.15	-3.07*	13.58	8.63	-2.13*	13.07	5.79	-2.94**
1 child	44.40	21.66	1.56	97.40	41.55	.82	10.29	8.88	.64	8.86	7.12	1.40
2 children	31.75	3.40	7.30***	69	8.76	3.79**	6.90	4.53	2.92**	7	5.22	2.05*
Clinic variables												
Number of perinatal losses												
1 pregnancy loss	60.09	18.55	1.42	107.73	26.92	.42	15.73	7.54	-.30	13.45	5.72	.04
2 pregnancy losses	59	18.36	-.63	106.40	29.29	.80	12.80	7.64	1.57	13.40	4.97	.11
3 pregnancy losses or more	62.83	20.42	-.85	126.83	26	-1.60	19.83	9.0	-1.63	13.83	3.87	-.18

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

Table 3*Correlations between disturbance variables and dyadic variables*

	1.	2.	3.	4.	5.	6.
1. Depression	-	-	-	-	-	-
2. Posttraumatic stress	.72***	-	-	-	-	-
3. Complicated Grief	.73***	.55**	-	-	-	-
4. Perinatal Grief	.87***	.67***	.87***	-	-	-
5. Quality of the Couple's Relationship	-.53***	-.34*	-.47**	-.54**	-	-
6. Shared Meaning Making	-.70***	-.46***	-.66***	-.71***	.82***	-

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

Table 4

*Linear Regression; dependent variables: quality of the couple's relationship;
independent variables: shared meaning making*

	Quality of the Couple's Relationship			
	R^2	$R^2_{adjusted}$	β	t
Shared Meaning Making	.66	.66	.82	10.82***

*** $p < .001$

Table 5

Hierarchical Linear Regression; dependent variables: disturbance variables (complicated grief; perinatal grief; depression; posttraumatic stress); independent variables: dyadic variables (quality of the couple's relationship; shared meaning making)

	Complicated Grief					Perinatal Grief					Depression					Posttraumatic Stress				
	R^2	$R^2_{adjusted}$	ΔR^2	β	t	R^2	$R^2_{adjusted}$	ΔR^2	β	t	R^2	$R^2_{adjusted}$	ΔR^2	β	t	R^2	$R^2_{adjusted}$	ΔR^2	β	t
Model 1	.22	.19	.22			.29	.26	.29			.28	.26	.28			.11	.10	.11		
Quality of the couple's relationship				-.47	-2.87***				-.54	-3.47**				-.54	-4.52***				-.33	-2.54*
Model 2	.51	.47	.28			.54	.51	.25			.51	.49	.23			.22	.19	.11		
Quality of the couple's relationship				.61	2.02				.45	1.63				.21	1.19				.18	.80
Shared meaning making				-1.20	-4.00***				-1.11	-3.99***				-.88	-4.88***				-.62	-2.66*

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

Table 6

Linear Regression; dependent variables: disturbance variables (complicated grief; perinatal grief; depression; posttraumatic stress);

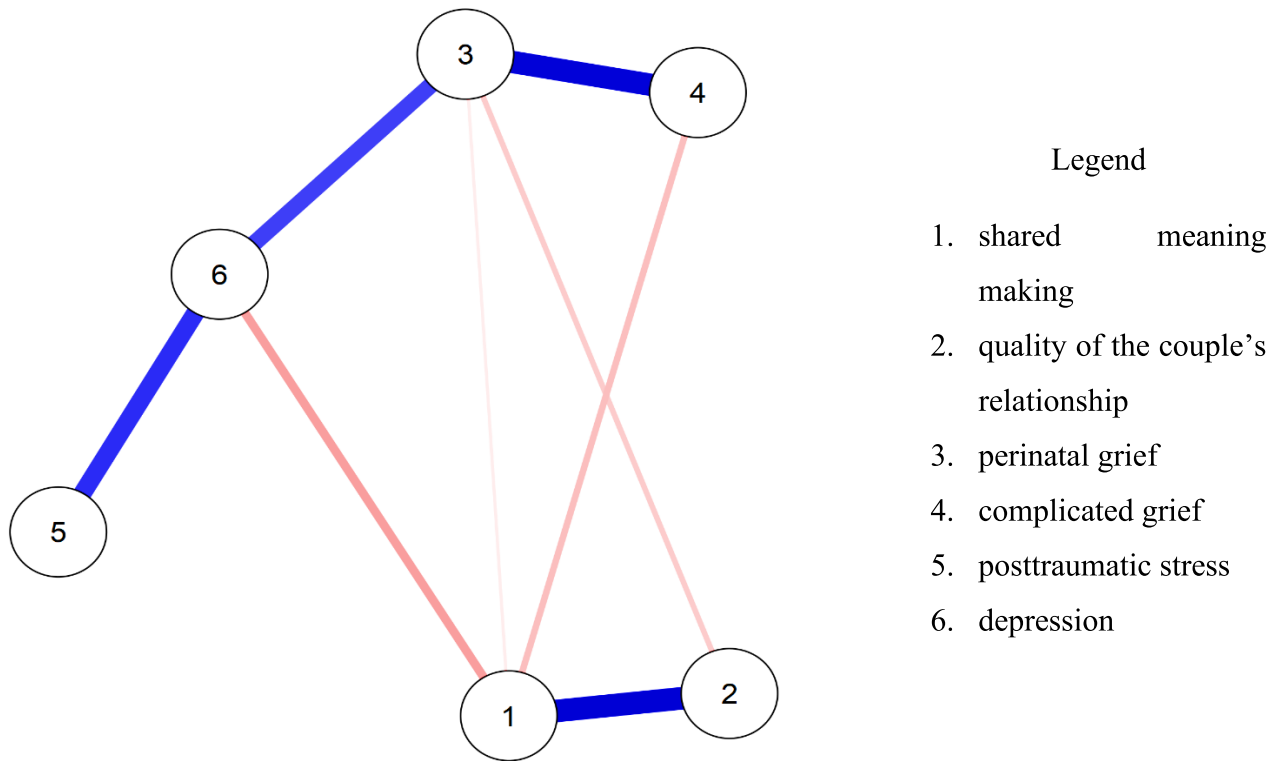
independent variables: shared meaning making

	Complicated Grief				Perinatal Grief				Depression				Posttraumatic Stress			
	R^2	$R^2_{adjusted}$	β	t	R^2	$R^2_{adjusted}$	β	t	R^2	$R^2_{adjusted}$	β	t	R^2	$R^2_{adjusted}$	β	t
Shared meaning making	.43	.41	-.66	-4.70***	.50	.48	-.71	-5.44***	.49	.48	-.70	-7.16***	.21	.20	-.46	-3.71**

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

Figure 1

Network Analysis: interactions between disorder variables and dyadic variables



Scientific Presentation

Oral Presentation, 2020, September 3, 4, 5, 10 and 11- III Simpósio de Saúde Mental

Perinatal e da Mulher da Marcé Society

Autores: Maria Ferreira, Maria Gonçalves, Olimpia Carmo & José Rocha

Abstract

Background: Após a perda perinatal os pais experienciam frequentemente um luto severo, podendo levar ao desenvolvimento de graves consequências a nível da saúde mental. O luto perinatal tem características únicas por ser repentino e inesperado, com escassez de memórias para recordar e um corpo para aceitar perda. Apesar de ambos os pais exibirem elevados níveis de sofrimento, por norma as mães vivenciam a perda de forma mais intensa. Por ser um evento que afeta o casal, o sofrimento entre os pais é compartilhado. Assim, as relações conjugais que tenham comunicação, partilha e apoio mútuo, frequentemente têm também uma maior capacidade de adaptação à perda.

Objetivo e Métodos: O objetivo é avaliar o efeito da construção partilhada de significados no casal, na qualidade da relação e no desenvolvimento de luto complicado e psicopatologia após perda perinatal em mulheres. O desenho é transversal, correlacional, com 93 mulheres que preencheram os instrumentos: Inventário do Luto Complicado; Escala de Luto Perinatal; Escala de Construção Partilhada de Significados; Escala de Avaliação Relacional; Questionário de Saúde do Doente-9 e Escala de Impacto de Eventos-6. A recolha de dados foi *online*.

Resultados: Há correlações positivas, significativas, entre as variáveis de perturbação, contudo, a construção partilhada de significados tem correlações negativas com o Luto Complicado ($r = -0,66$), com a Depressão ($r = -0,70$) e com o Stress Traumático ($r = -0,46$). Por outro lado,

existe uma relação muito positiva entre a construção partilhada de significados e a qualidade da relação de casal ($r = 0,82$).

Conclusão: O papel da construção partilhada de significados, como variável modificável, tem agora evidência para ser um aspeto central nas intervenções que visam a prevenção e/ou redução dos sintomas de perturbação após perda perinatal. Nesse sentido, o desenvolvimento de programas focados nesta dimensão sai aqui reforçado. Contudo, carece de análise destes efeitos sobre os/as companheiros/as.

Palavras Chave: construção partilhada de significados; relação conjugal; luto perinatal; luto complicado; depressão; *stress* pós-traumático