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The relationship between healthcare satisfaction after miscarriage and perinatal grief symptoms: A cross-sectional study on Portugal residents

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ABSTRACT

Objective: 15–20% of identified pregnancies result in miscarriage, which may lead to persistent symptoms of psychological morbidities in some women. Healthcare satisfaction is among the factors believed to influence such negative psychological responses. Here, we present the results of a study conducted in Portugal that analyzes the relationship between healthcare satisfaction, information and support provision and perinatal grief symptoms.
Methods: In a cross-sectional study, symptoms of perinatal grief, degree of satisfaction with healthcare received, and information and support provision data were collected through an online survey aimed at women in Portugal who suffered a miscarriage. 873 were considered eligible. Correlations were performed between perinatal grief scores and healthcare satisfaction rates. Finally, the proportions of information and support received were compared after distributing the sample in groups according to their perinatal grief levels.
Results: Healthcare satisfaction correlated significantly with perinatal grief scores, the latter increasing as satisfaction levels decreased. 61.1% of our sample received information about the physical consequences of miscarriage and showed a significantly lower rate of above-threshold perinatal grief symptoms in this group. 18.2% received information about its mental health consequences, with no significant differences in above-threshold symptom rates. 11.7% were offered or recommended mental health support, but no significant differences in above-threshold symptom rates were found.
Conclusion: Healthcare satisfaction and information on after-miscarriage physical changes correlated significantly with reduced perinatal grief rates after miscarriage. However, any effects of mental health information and psychological support provision need further studies. Training for healthcare providers dealing with pregnancy loss, implementing national guidelines that include follow-up on the parents' physical and psychological health, and including a specialized area in medical structures are advised.

1. Introduction

Miscarriage is an occurrence whose actual scale and effects are not widely known by society (Quenby et al., 2021). The gestational age to consider a fetal demise as a miscarriage varies depending on the country and/or region, ranging from up to 20–28 weeks (Morin, 2020; Quenby et al., 2021). Here, we consider miscarriage as the in-utero death of a fetus at or before 20 weeks of gestation (Morin, 2020). It is challenging to determine how many pregnancies end up in miscarriage since they commonly go unreported (Quenby et al., 2021). However, estimates indicate they comprise 15–20% of identified pregnancies (Mutiso et al., 2019; Quenby et al., 2021). Although most women cope well with their loss, mental health decline has been reported in 25–50% (Farren et al., 2018; Kulathilaka, 2016).

After a miscarriage, parents can experience perinatal grief, characterized by intense pain, yearning, sadness, and thoughts about the lost future with the child (Gozuyesil et al., 2021). However, society does not actively acknowledge or support their grief (Quinn, 2020). Some studies have shown that perinatal grief can be intense within the first 48 h after the loss but tends to decrease by the sixth-month mark (Gozuyesil et al., 2021). Others have suggested that its symptoms can persist for two years or longer (deMontigny et al., 2020). High levels of perinatal grief have also been associated with post-traumatic stress disorder, anxiety, and depression symptoms (Krosch and Shakespeare-Finch, 2016; Mendes

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et al., 2023).

Despite the reported prevalence of poor mental health months or years after a miscarriage in some women, few receive or are offered psychological support (Kersting and Wagner, 2022). Although not all parents need such support, screening and offering psychotherapy have been considered essential (Bellhouse et al., 2018; Robinson, 2014). Additionally, women's reports of dissatisfaction with post-loss healthcare may also contribute to maladaptive grief responses (deMontigny et al., 2017 ;2020). Since most parents' first points of contact after the event are their healthcare providers, they are crucial in supporting and helping them navigate their loss (Hiefner and Villareal, 2021). Research has shown that women satisfied with their primary care physicians, together with having children, showed higher mental health scores and a decrease in perinatal grief, depression, and anxiety symptoms over time (deMontigny et al., 2017; 2020).

Moreover, miscarriage management is of particular importance to parents. Some have shown dissatisfaction and increased distress from being cared for in maternity wards surrounded by pregnant women, new mothers, and living children (Bellhouse et al., 2018; Camarneiro et al., 2015; Emond et al., 2019), valuing a private space dedicated to pregnancy loss with specialized staff centered on emotional health (Emond et al., 2019; Meaney et al., 2017). Research also shows that parents should be informed about miscarriage, its possible physical and emotional effects, and the grief process (Emond et al., 2019; Meaney et al., 2017). Different studies state that women have poor knowledge about miscarriage (both before and after discharge from health services) and that information is sometimes difficult to assimilate for being issued too early (Kukulskienė and Zemaitienė, 2022). It is also essential that their loss is acknowledged and validated, avoiding dismissive statements such as "these things happen" or "you can still have other children" (Meaney et al., 2017). These negative experiences have been widely reported, translating into increased distress (Bellhouse et al., 2018; Hiefner and Villareal, 2021). Empathy and emotional support are also vital to facilitate healing and diminish emotional pain, especially when healthcare providers break the news of the loss (Camarneiro et al., 2015; Catlin, 2017; Quinn, 2020).

Guidelines for care after a pregnancy loss have been created in other countries, such as the UK's *Regional Bereavement Guidance on Evidence-Based, Holistic Care of Parents and their Families after the Experience of Miscarriage, Stillbirth, or Neonatal Death* (Regional Bereavement Guidance on evidence-based, holistic care of parents and their families after the experience of miscarriage, stillbirth or neonatal death, 2015). It aims to provide a regional standard of care. Among the aspects of care considered are the importance of information and counseling provision, both for the woman and the family, immediately after the loss, and good practices for a sensitive approach to care that helps professionals and individuals. Regardless, no information on guidelines for bereavement care after pregnancy loss enforced by the Portuguese National Healthcare System has been found, with nurses in the country reporting a lack of interest in their feelings and not receiving any training on how to manage pregnancy losses (Cruz, 2022).

A report by the World Health Organization published in 2018 described the Portuguese health system as seriously challenged and needing to strengthen the public health system and modernize its workforce and working conditions (World Health Organization, 2018). It also identified mental health services as needing improvement, with shortcomings in monitoring, evaluating, and integrating E-health into care (World Health Organization, 2018). However, efforts have been made by associations in Portugal, such as the Portuguese Fertility Association (APF) (Associação Portuguesa de Fertilidade, n.d.) and the Artémis Project Association (A-PA) (Mãe-Me-Quer, 2014), to tackle a perceived geographic inequality of treatment centers and lack of infertility and pregnancy loss-related legislation. These associations are aimed to raise awareness of the physical, psychological, and socio-economic impact of pregnancy loss, the importance of providing physical and psychological support to women and their partners, and the improvements needed for healthcare providers to give the best care possible to parents.

Some studies in Portugal have studied psychological protocols and interventions to provide appropriate evidence-based support to women after pregnancy loss (e.g., Rios et al., 2016). The need for such interventions seems to be evident from a relatively recent online survey for women who underwent a miscarriage conducted in Portugal. It was aimed at understanding the effect of time since miscarriage on symptoms of perinatal grief, depression, anxiety, and post-traumatic stress disorder (Mendes et al., 2023). Results showed that rates of above-threshold symptoms of perinatal grief and post-traumatic stress disorder significantly decreased the more time had passed since miscarriage, but this did not happen with depression or anxiety symptoms (Mendes et al., 2023). However, to our knowledge, an analysis of the relationship between healthcare satisfaction, information and support provision, and perinatal grief symptoms is yet to be conducted in Portugal. Therefore, this study aims to examine relationships between satisfaction with healthcare, information, and support provision and symptoms of perinatal grief in the already studied sample of Portuguese residents.

2. Materials and methods

2.1. Sample

The self-selection sample consisted of women who had suffered a miscarriage and met the following inclusion criteria: 1) unintentional pregnancy loss within the first 20 weeks; 2) $\geq$ 18 years old; and 3) Portugal residents. Participants were not eligible if they: 1) performed a voluntary abortion or 2) terminated the pregnancy for medical issues. Out of 1015 participants, 142 were ineligible due to having undergone a medical interruption of pregnancy (n = 110), the pregnancy loss occurring when over 20 weeks of gestation (n = 14), having performed a voluntary interruption of pregnancy (n = 4), not being a Portugal resident (n = 8), or not providing critical information or giving incoherent data (n = 6). A total of 873 participants were eligible for analysis.

2.2. Procedure

This study is part of more extensive research aimed at characterizing the psychological impact of miscarriage in Portugal. It used an online survey in Google Forms with questions based on previous works in the field (e.g. (Bellhouse et al., 2018),) and clinically validated questionnaires to measure symptoms of perinatal grief, anxiety, depression, and PTSD. It was disseminated via social network ads, fertility and pregnancy loss support associations, and posters on Portugal's main Gynecology and Obstetrics units. In the survey, participants received information on its aim, their data protection was ensured, and they were reminded of their right to leave anytime. Given its online nature, the participant's consent was obtained by ticking a checkbox. Data were collected between February 23rd and July 4th, 2022. This study was approved by the Data Protection Committee (February 9th, 2022) and the Ethics Committee of the University of Madeira (February 17th, 2022-Number P27/CEUMA/2022). The effect of time since miscarriage on perinatal grief and the comorbidities above (e.g., PTSD, depression) has been analyzed in a previous publication (Mendes et al., 2023). For this paper, data from the following sections of the survey were used.

2.2.1. Socio-demographic and clinical data

It included socio-demographic questions, such as age and place of residence, and questions about their clinical history (e.g., infertility diagnosis) or any related previous or recurrent psychological treatment. This data will be used for sample description only.

2.2.2. Information regarding the loss

It contains questions about the lost pregnancy (e.g., planned, aided

by Medically Assisted Techniques) and the characteristics of their miscarriage (e.g., how long ago, causes). This data will be used for sample description only.

2.2.3. Mental health responses in the context of the loss

It contains questions about the medical context of the loss (e.g., public or private services), information on the participant's satisfaction with the hospital environment and management, health practitioners' responses, and information provision. To understand how satisfied our participants were with their post-loss care, we will work with three types of data:

Satisfaction with Health Infrastructure, Management, and Healthcare Providers' Responses: Composed by questions using a 5-point Likert scale (0 = Totally Disagree – 4 = Totally Agree), being these "I am satisfied with the conditions of the maternity/hospital/clinic (ex. Privacy)"; "I am satisfied with the way the post-loss medical processes were managed"; "I think the health professional's behavior when communicating the loss was adequate and sensitive"; "I think the health professionals understood the consequences of the loss on my emotional wellbeing."

Information and Support Provision: It included Yes/No questions, such as "After the loss, were you given information regarding the expected physical consequences, even without asking?"; "After the loss, were you given information about the expected mental health consequences, even without asking?"; "After the loss, were you offered or recommended any psychological consultation service?".

Commonly Reported Situations and Recommendations: Multiple-selection questions that include "Thinking of the medical supervision of the loss, indicate if any of these situations apply to your experience" and "Below, you will find some aspects that some women have previously mentioned as aspects that could be improved in the healthcare service provided after a miscarriage. Mark those that you think would apply as well, considering your situation". These questions also included an option for 'Others,' where participants could freely write about experiences or advice not included in the multiple-selection options. Data from these questions will only be used for descriptive purposes.

2.2.4. The Perinatal Grief Scale - Reduced Version (PGS - Reduced Version)

Created by Potvin et al. (1989) and adapted into European Portuguese by Rocha and Lasker (2004), it measures to what extent perinatal grief has been resolved after fetal death, ectopic pregnancy, or neonatal death. Its 33 items are measured on a Likert scale of 5 points, and its final score can go from 33 to 165 after summing all the elements. A threshold of 91 points is used, with any score higher than this representing possible psychiatric levels of perinatal grief (Toedter et al., 2001). Worldwide validations for different pregnancy losses have shown the original instrument to have high internal consistency (Toedter et al., 2001), and its Portuguese version has also demonstrated good reliability (Rocha and Lasker, 2004).

2.3. Statistical analysis

This study was descriptive and cross-sectional, with data collected at a single point. Quantitative data will be presented through mean ± standard deviation, median (interquartile range), and categorical data as frequencies and percentages. Because of the ordinal nature of our data, Spearman's correlation was used to identify significant correlations between the items on the participant's degree of satisfaction with their post-loss healthcare (Satisfaction with Medical Facilities, Satisfaction with Post-Loss Medical Management, Healthcare Providers' Adequate and Sensitive Approach, and Healthcare Providers' Understanding of the Emotional Effects of the Loss) and the PGS scores. Further, after determining that the data met the necessary assumptions, a two-stepped hierarchical multiple linear regression was carried out to assess how much variance in the PGS scores can be predicted and explained from several factors. In the first step, our model included only our control variables (Time Since the Miscarriage and Number of Living Children). In our second step, we added the healthcare satisfaction-related variables (Satisfaction with Medical Facilities, Satisfaction with Post-Loss Medical Management, Healthcare Providers' Adequate and Sensitive Approach, and Healthcare Providers' Understanding of the Emotional Effects of the Loss). Finally, after grouping our sample in groups showing below-threshold and above-threshold perinatal grief symptoms, a Pearson's Chi-square ($\chi 2$) test compared their frequency between those who received or did not receive information or mental health support. The statistical analyses were performed using SPSS version 28.0.0.0 (IBM Corp, 2021), with a significance threshold of $\alpha = 0.05$ (5%).

3. Results

3.1. Sample description

3.1.1. Socio-demographics

Our participants represented all districts and autonomous regions in Portugal, and their ages ranged from 21 to 57 years (M = 36.04, SD = 4.9), and their number of living children ranged from 0 to 4 (M = 0.93, SD = 0.88). Most were white of European origin (99%, n = 864), of Portuguese nationality (99%, n = 864) and non-migrants (98.6%, n = 861). Most were married or in a domestic partnership (88.9%, n = 776), had living children (61.7%, n = 539), had higher education (80.2%, n = 700), were employed (93.2%, n = 814) and earned more than the minimum wage (96.6%, n = 843). More detailed information can be found in Table 1.

3.1.2. Clinical history

Regarding their basic clinical history, most reported not being pregnant at the moment of the survey (81.2%, n = 709), never been diagnosed with infertility issues (84.4%, n = 737), nor ever gone through Medically Assisted Reproduction (MAR) (86.5%, n = 755). As for their self-reported mental health history, most of our participants had not been diagnosed with any mental health issue (e.g., depression or anxiety) (71.4%, n = 623), and they had received no mental health treatment (62.4%, n = 545). More detailed information can be found in Table 2.

3.1.3. Last miscarriage: details on their pregnancy

Most participants stated that their pregnancy had been planned (81.4%, n = 711), spontaneous (91.1%, n = 795), and of only one embryo/fetus (95.6%, n = 835). More detailed information can be found in Table 3.

3.1.4. Last miscarriage: details on their loss

Most of our participants reported having suffered their last miscarriage within 6 months before participating in the study (41%, n = 355), being attended in the public healthcare system (70.3%, n = 614), and receiving post-miscarriage instructions from their obstetrician (85.3%, n = 745). Regarding the clinical cause of their loss, most reported it to be unknown (77.5%, n = 677. More detailed information can be found in Table 4.

3.2. Healthcare satisfaction

When asked to what extent they were satisfied with the condition of the medical facilities (e.g., privacy), how medical processes were managed after the loss, and whether their healthcare providers delivered the news adequately and sensitively, the median was 3 out of 4 (2). However, when asked whether they felt their healthcare providers understood the effects of the loss on their emotional well-being, the median point was 2 (2).

Satisfaction with Medical Facilities showed a weak but significant correlation with PGS scores, as did their Satisfaction with Post-Loss

Table 1
Frequencies (percentages) on the participants' socio-demographic details.

Socio-Demographic Data		Frequency (%)
Nationality	**Portuguese**	**864 (99%)**
	Brazilian	5 (0.6%)
	French	1 (0.1%)
	São Toméan	1 (0.1%)
Ethnicity	**White/Portuguese White/of European Origin**	**864 (99%)**
	Black/Portuguese Black/African Descendent/or African Origin	7 (0.8%)
	Mixed White and Indian	1 (0.1%)
	Mixed of African Origin/Portuguese White	1 (0.1%)
Migration Status	**Non-immigrant**	**861 (98.6%)**
	Immigrant	12 (1.4%)
Marital Status	**Married/Cohabitation**	**776 (88.9%)**
	Single	77 (8.8%)
	Divorced	17 (1.9%)
	Widow	3 (0.3%)
Schooling	**Higher Education**	**723 (82.8%)**
	Upper-Secondary Education	91 (10.2%)
	Vocational Education	48 (5.5%)
	Lower Secondary Education (Year 9)	10 (1.1%)
	Other	1 (0.1%)
Employment Status	**Employed**	**814 (93.2%)**
	Unemployed	59 (6.8%)
Monthly Wage	**About 1410–2115**	**309 (35.4%)**
	About 705–1410	293 (33.6%)
	Over 2115	241 (27.6%)
	Less than 705	30 (0.4%)
Residence	**Lisbon**	**216 (24.7%)**
	Porto	146 (16.7%)
	Setúbal	79 (9.0%)
	Braga	52 (6.0%)
	Leiria	50 (5.7%)
	Coimbra	49 (5.6%)
	Aveiro	46 (5.3%)
	Santarém	42 (4.8%)
	Açores	34 (3.9%)
	Faro	31 (3.6%)
	Madeira	29 (3.3%)
	Castelo Branco	16 (1.8%)
	Viseu	13 (1.5%)
	Evora	13 (1.5%)
	Vila Real	12 (1.4%)
	Braganca	11 (1.3%)
	Beja	10 (1.1%)
	Viana do Castelo	9 (1.0%)
	Portalegre	8 (0.9%)
	Guarda	7 (0.8%)
Community	**Urban**	**658 (75.4%)**
	Rural	215 (24.6%)

Table 2
Frequencies (percentages) on the participants' self-reported clinical history.

Clinical History Data		Frequency (%)
Currently Pregnant?	**No**	**709 (81.2%)**
	Yes	164 (18.8%)
Previous infertility diagnosis?	**No**	**737 (84.4%)**
	Yes	136 (15.6%)
Previous Medically Assisted Reproduction?	**No**	**755 (86.5%)**
	Yes	118 (13.5%)
Previous Diagnosis of Mental Health Morbidities (e.g., depression or anxiety?	**No**	**623 (71.4%)**
	Yes	250 (28.6%)
Received/Receiving Mental Health Treatment?	**No**	**545 (62.4%)**
	Received in the past, but not anymore	193 (22.1%)
	Received in the past and continue in the present	135 (15.5%)

Table 3
Frequencies (percentages) on the main characteristics of their pregnancy before their last miscarriage.

Last Pregnancy Ending in Miscarriage Data		Frequency (%)
First Pregnancy?	**No**	**496 (56.8%)**
	Yes	377 (43.2%)
Planned Pregnancy?	**Yes**	**711 (81.4%)**
	No	162 (18.6%)
Pregnancy was …	**Spontaneous**	**795 (91.1%)**
	Medically Assisted	78 (8.9%)
Type of pregnancy	**One embryo/Fetus**	**835 (95.6%)**
	Twins	38 (4.4%)

Medical Management (Table 5). Furthermore, higher or lower scores in the variable Healthcare Providers' Adequate and Sensitive Approach were weak but significantly correlated with PGS scores. As for the rates of perceived Healthcare Providers' Understanding of the Emotional Effects of the Loss, a significant correlation with PGS scores was found (Table 5). Moderate-to-high ($r_s = 0.489$ to $r_s = 0.803$) significant correlations ($p < 0.001$) were also observed between all healthcare satisfaction-related variables.

Additionally, our results showed weak but statistically significant correlations between time since miscarriage, the number of living children, and the PGS scores (Table 5). Correlations between time since the loss and the participants' number of children were moderate and significant ($r_s = 0.486$, $p < 0.001$). Hierarchical multiple regression analysis showed that the control variables, Time Since the Miscarriage and the Number of Living Children, account for 3.8% of the variance in perinatal grief scores, $R^2 = 0.038$, $p < 0.001$, with the Number of Living Children as the most significant predictor among the controls, $\beta = -0.164$, $p < 0.001$. Time Since the Miscarriage did not predict perinatal grief symptoms significantly, $\beta = -0.057$, $p = 0.120$. Our model including both control (Time Since the Miscarriage and Number of Living Children) and healthcare satisfaction-related variables (Satisfaction with Medical Facilities, Satisfaction with Post-Loss Medical Management, Healthcare Providers' Adequate and Sensitive Approach, and Healthcare Providers' Understanding of the Emotional Effects of the Loss) was the best, accounting for 8.6% of the variance, $R^2 = 0.086$, $p < 0.001$. When all of the variables were accounted for, the Number of Living Children was the best predictor of perinatal grief symptoms ($\beta = -0.156$, $p < 0.001$), followed by the Healthcare Providers' Understanding of the Emotional Effects of the Loss ($\beta = -0.135$, $p = 0.018$), Satisfaction with Medical Facilities ($\beta = -0.106$, $p = 0.012$), and Satisfaction with Post-Loss Medical Management ($\beta = -0.093$, $p = 0.036$). Time Since the Miscarriage ($\beta = -0.068$, $p = 0.058$) and Healthcare Providers' Adequate and Sensitive Approach ($\beta = 0.096$, $p = 0.082$) were not significant predictors in this model.

3.3. Information and support provision

Most of the sample responded positively when asked whether they had been informed about the physical consequences of the loss (61.1%, $n = 533$). However, when asked if they had been informed about the mental health consequences of the loss, a vast majority answered negatively (81.8%, $n = 714$). Furthermore, most of the sample (88.3%, $n = 771$) reported not being offered or recommended psychological services.

Table 4
Frequencies (percentages) on the characteristics of their last miscarriage.

Last Instance of Miscarriage Data		Frequency (%)
Healthcare system	**Public**	**614 (70.3%)**
	Private	259 (29.7%)
Months since the miscarriage	**0–6**	**355 (41%)**
	7–12	107 (12%)
	13–24	135 (16%)
	25–36	65 (7%)
	37+	211 (24%)
Clinical reason for the loss	**Unknown**	**677 (77.5%)**
	Other	56 (6.4%)
	Chromosomal and Congenital Anomalies	47 (5.4%)
	Ectopic pregnancy	44 (5.0%)
	Blighted ovum	37 (4.2%)
	Maternal Health Issues (e.g.. Diabetes, hypertension)	9 (1.0%)
	Complications during pregnancy (e.g., severe injuries)	2 (0.2%)
Accompanied when informed about the miscarriage (e.g., partner, friend)?	**No**	**525 (60.1%)**
	Yes	348 (39.9%)
Were you involved in the decision-making process?	**Yes**	**617 (70.7%)**
	No	256 (29.3%)
Healthcare providers who gave post-miscarriage instructions	**Nurse**	218 (25%)
	Psychologist	37 (4.2%)
	Obstetrician	**745 (85.3%)**
	Family doctor	157 (18%)
	Other	27 (3.1%)
	No one	15 (1.7%)
Shared the loss with (a) member (s) of your social circles	**Yes**	**789 (90.4%)**
	No	84 (9.6%)
The most important source of support in their social circles	**Partner**	**672 (77%)**
	Friends	73 (8.4%)
	Other	47 (5.4%)
	Parents	45 (5.2%)
	Siblings	28 (3.2%)
	Coworkers	8 (0.9%)
Actively sought mental health support after miscarriage?	**No**	**664 (76.1%)**
	Yes	209 (23.9%)
Took part in bereavement rituals	**No**	**755 (86.5%)**
	Yes	118 (13.5%)

3.3.1. Information on the physical consequences of the loss

62.6% (213/340) of the sample who recalled not receiving this information reported sub-threshold scores of perinatal grief and 37.4% (127/340) above-threshold scores. On the other hand, among the participants who remembered receiving it, 71.3% (380/533) had sub-threshold scores of perinatal grief, and 28.7% (153/533) had above-threshold scores. A chi-square ($\chi 2$) analysis revealed significant differences concerning perinatal grief rates across groups, with a large effect size (Table 6).

3.3.2. Information on the mental health consequences of the loss

Comparing the frequency of above-threshold scores revealed that 68.2% (487/714) of those who did not remember receiving any information provision on mental health consequences showed below-threshold scores and 31.8% (227/714) above-threshold. However, 66.7% (106/159) of those who recalled receiving this information had sub-threshold scores, and 33.3% (53/159) above threshold. No significant differences were found between groups, and the effect size was small (Table 6).

Table 5
Spearman's Correlation Coefficients (r_s) and p-Values Across All Healthcare-Satisfaction-Related Variables, Time Since the Loss, and Number of Living Children.

	SMF	SMM	HP-ASA	HP-UEE	TSM	#LC
PGS	$r_s = -0.206$, $p < 00.001$	$r_s = -0.196$, $p < 00.001$	$r_s = -0.119$, $p < 00.001$	$r_s = -0.162$, $p < 00.001$	$r_s = -0.200$, $p < 0.001$	$r_s = -0.213$, $p < 0.001$

PGS: The Perinatal Grief Scale – Reduced Version score.
SMF: Satisfaction with Medical Facilities score.
SMM: Satisfaction with Post-Loss Medical Management score.
HP-ASA: Healthcare Providers' Adequate and Sensitive Approach score.
HP-UEE: Healthcare Providers' Understanding of the Emotional Effects of the Loss score.
TSM: Time Since Miscarriage.
#LC: Number of Living Children.

Table 6
Chi-Square Tests and p-Values Across All Support and Information Provision Variables.

	Pearson Chi-Square	Effect Size (Phi)
Information Provision on Physical Consequences of the Loss	$\chi 2\ (1) = 7.125$, $p = 0.008$	$\varphi = 0.90$
Information Provision on the Mental Health Consequences of the Loss	$\chi 2\ (1) = 0.142$, $p = 0.707$	$\varphi = 0.01$
Offered/Recommended Psychological Support	$\chi 2\ (1) = 3.50$, $p = 0.061$	$\varphi = 0.06$

3.3.3. Offered/recommended psychological support

Among the participants who had no memory of receiving this support, 69.0% (532/771) had sub-threshold scores of perinatal grief and 31.0% (239/771) above threshold. 59.8% (61/102) of those who recalled being offered such support showed sub-threshold scores, while 40.2% (41/102) showed above-threshold. There were no significant differences between groups, with a small effect size (Table 2).

3.4. Experiences of miscarriage and recommendations for better healthcare

Half of our sample (69.2%, $n = 604$) provided feedback to a list of typical negative situations found in the literature by selecting any that applied to their own experience of miscarriage management. Overall, 58–59% remembered that healthcare providers focused on highlighting that they could try again and diminished their loss. Further, 20–27% recalled insensitive comments about them or their baby and that their partners were ignored (Fig. 1). 7% ($n = 61$) of participants described other experiences. These included both negative (e.g., being sent home without further instructions or support focusing on their physical health rather than their mental well-being) and positive remarks (e.g., being given hope and being provided psychological and emotional support).

All participants also provided feedback on what they could have benefitted from by checking a list of aspects previously mentioned in the literature as needing improvement in the healthcare process after a pregnancy loss. 72–81% agreed that special areas in the hospital should be available, that follow-up on their physical and psychological health must be provided 3–4 months after the loss, and that psychological support should be offered immediately after. 23% advised a private space in the hospital for grieving (Fig. 2). 3.4% (n = 30) of these respondents shared further advice, which included more sensibilization and training for healthcare providers to manage miscarriage and

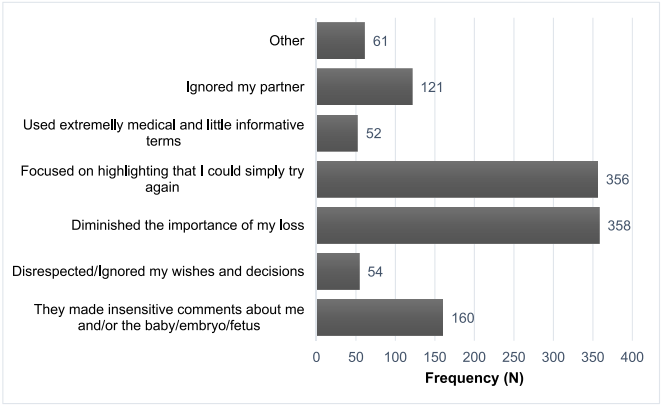

Fig. 1. Frequency (out of 604 respondents) of participants who answered the question "Thinking of the medical supervision of the loss, indicate if any of these situations apply to your experience."

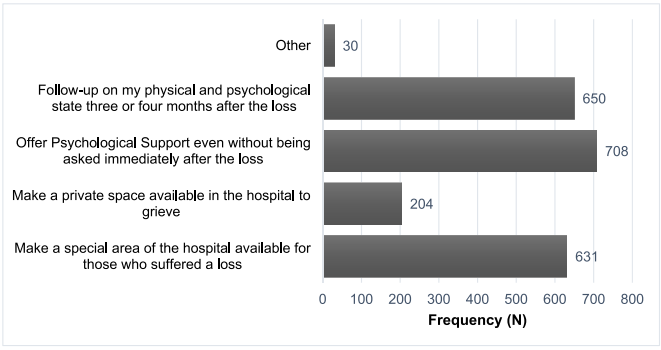

Fig. 2. Frequency (out of 873 respondents) of participants who answered the question: "Below, you will find some aspects that have been previously mentioned by some women as aspects that could be improved in the healthcare service provided after a miscarriage. Mark those that you think would apply as well, considering your situation."

psychological support for their partner.

4. Conclusion

A miscarriage can be traumatic and lead to concerning levels of perinatal grief in many women (Krosch and Shakespeare-Finch, 2016; Mendes et al., 2023). It is essential to understand the extent to which healthcare satisfaction relates to symptoms of perinatal grief since the parents' first contact after a miscarriage can have short- and long-term effects. An online survey was distributed in Portugal to collect data on women's symptoms of perinatal grief and information on their opinions and experience with healthcare services during their last occurrence of miscarriage. Data collected from 873 women were analyzed and will be discussed in the following sections.

4.1. Satisfaction with healthcare infrastructure and management

Correlations measured between satisfaction with medical facilities and post-loss medical management showed that, as both aspects increased, the scores of perinatal grief decreased. Furthermore, they were also significantly correlated to each other. These results suggest that physical and administrative organization of medical facilities could influence these women's well-being. Previous studies have highlighted how stressful it can be for these women to be exposed to pregnant women and newborns (Camarneiro et al., 2015; Lemos and Cunha, 2015). In this study, many participants agreed that a private area in medical centers dedicated to confirmed or suspected miscarriage is needed. This could also facilitate contact with other women who might have suffered this loss, which has been shown to help parents reappraise the problem and lead to better physical and mental health outcomes (Camarneiro et al., 2015).

Within the descriptive data collected about our participants' experiences and recommendations, 60.1% recalled being alone when they were given the news and 13.9% that their partners had been ignored in the entire process. More in detail, 14 of them recalled not being permitted the company of their partner during consultations and throughout admission as a very negative experience. Therefore, allowing the father's or another loved one's presence and involvement in the entire process was mentioned as a necessary improvement. Previous studies have raised the issue of partners, whether men or non-birth mothers, being often ignored by their healthcare providers in ways that go from not allowing their presence in critical moments, seeing their feelings devalued, to not being given the grief support they need (Obst et al., 2020; Peel, 2010). It has been shown that insensitive treatment worsens men's feelings of grief and psychological distress and invokes feelings of anger and sadness that can be detrimental to the couple in the long run (Obst et al., 2020).

Allowing contact with the fetus/baby was also advised by 1 participant. Despite having no baby to hold or take pictures of, some parents want to have contact despite any possible harmful outcomes, as it allows them to treasure their infant's memory and grieve an actual rather than abstract loss (Robinson, 2014). These facts may call for re-evaluating national healthcare administration, management, protocols, and medical training.

4.2. Satisfaction with the healthcare providers

Correlations measured between healthcare providers' perceived sensitive and adequate approach and their understanding of the emotional effects of the loss showed that these were weak but significant. As the degree of satisfaction in both aspects increased, perinatal grief symptoms decreased. Although most of our sample agreed that their healthcare providers' approach was adequate and sensitive, they showed more reservations about their healthcare providers' awareness of the emotional effects of miscarriage. This might be related to the fact that, when asked to select situations describing their experience, about 41% of our sample recalled that their healthcare providers had diminished their loss, stating, for instance, that they could try again. Further, about 18% remembered receiving other insensitive comments from their healthcare providers. As a result, more sensitivity and empathy were among the recommendations provided by 4 individuals in our sample. Studies have highlighted how comments on the commonality of the event or that they should be grateful for being fertile, only add to the parents' distress and recommend being mindful of any comments that may be hurtful (Bellhouse et al., 2018; Hiefner and Villareal, 2021; Meaney et al., 2017).

When asked about their recommendations, 3 of our participants advised more training for healthcare providers dealing with miscarriage, especially for communicating and behaving in these situations. Several studies have found that, despite many healthcare providers' awareness of these women's trauma and their willingness and wishes to provide biopsychosocial-oriented care, they lack the resources to do so (Catlin, 2017; Hiefner and Villareal, 2021). Healthcare providers have reported feeling limited primarily due to a lack of training and clear or directive guidance, inadequate resources (e.g., staff shortage), compassion fatigue, and limited support and recognition in their professional environment (Catlin, 2017; Jensen et al., 2019). A study reported that less than a quarter of their third-year medical students had observed an experienced physician delivering news about miscarriage and that providing counseling tools improved their confidence and empathy compared to traditional training (Marko et al., 2015).

4.3. Information provision

Most of our sample remembered being informed about the physical consequences of miscarriage, which is quite positive. Literature has highlighted the importance of ensuring that afflicted parents were informed of any necessary physical interventions, what can occur to their bodies, and how to deal with these changes (Bellhouse et al., 2018). Most participants reached only sub-threshold scores of perinatal grief, which suggests that they successfully overcame and surpassed their grief, whether receiving information of this nature or not (Bellhouse et al., 2018; Morin, 2020). However, a significantly higher proportion of above-threshold symptoms were present in the group that was not given this information. This might suggest that, for some, not receiving this information could increase distress and complicate the grieving process.

Knowledge about the possible emotional and mental health effects of the loss is equally important. However, the literature has shown that parents are not usually asked about their coping process, and healthcare providers' concerns are generally limited to physical care (Bellhouse et al., 2018; Emond et al., 2019; Hiefner and Villareal, 2021). Most of our sample did not remember having received any information of this nature, but there were no significant differences in above-threshold perinatal grief rates. When informed about these effects, one might have expected to see a significantly lower frequency of above-threshold symptoms. This suggests that being alerted of the risks to their mental health may not be enough in some cases. Despite awareness of a declining mental state, many women may not seek help due to fear of judgment or unfamiliarity with the services available. Moreover, healthcare providers may have provided this information only to women with a history of or visible symptoms of mental illness.

4.4. Psychological support and follow-up

Most participants did not recall being recommended or offered any psychological support. Regardless, significant differences were not found when comparing the above-threshold perinatal grief symptom rates. Although we did not collect specific data on any psychological intervention effectively received, this might have been offered only after symptoms of perinatal grief or other comorbidities were visible. Also, they might have been offered these services promptly but were unable or unwilling to use them. Furthermore, some might have received psychological treatment without the expected improvements. Despite this, many studies maintain that these services should always be offered in case parents need them (Bellhouse et al., 2018; Robinson, 2014).

Regarding common recommendations, about 81% agreed on the need for psychological support immediately after the loss, with 2 participants emphasizing that this should extend to their partners. Further, 74.5% of our sample agreed that follow-up on their physical and mental state some weeks after the event should be implemented. It has been established that follow-up allows the detection of any anomalous physical, emotional, and mental responses after a pregnancy loss (Emond et al., 2019; Lemos and Cunha, 2015). Moreover, this practice could improve the support provided to the family by connecting family members with services and resources, leading to better-perceived healthcare.

4.5. Limitations

Some limitations need to be acknowledged. Data was collected via an online survey. Despite this being ideal for collecting data from a geographically dispersed and large sample, it comes from different women at different times after their loss. A longitudinal study might have shown different trends in the results. Moreover, data was obtained using Likert and dichotomous items. Although these questions are easy to use and provide quick and straightforward feedback, they are both prone to be influenced by response bias, and the latter does not capture the full extent of the respondents' feelings. Even though multiple-choice questions were added to capture further details, their actual opinions might not have been collected. Respondents reported an event that happened less than a month or over three years before, implying that, in many cases, their answers might be more based on what they can recall from the events than the facts. Further, with a very homogeneous sample (e.g., white, employed), other social subtracts (e.g., ethnic minorities) are underrepresented. Finally, being a self-selected sample, it might comprise only women with interest in the topic: individuals whose loss had no relevant effect on their lives and those who do not wish to be reminded of a traumatic event might have self-excluded.

4.6. Final remarks

According to our findings, women's satisfaction with different aspects of healthcare received could be related to the increase or decrease of PG symptoms. Analysis of our control variables showed that the number of living children is among the factors that may contribute to women's mental well-being. More research in Portugal is needed to define to what extent factors like previous infertility or mental health diagnosis, marital satisfaction, social support strength, or even employment status may impact symptoms of perinatal grief and other comorbidities.

Moreover, our study showed apparent differences in the frequency of above-threshold perinatal grief symptoms between those who received information on the physical consequences of the loss and those who did not. Further studies are needed to determine the impact of providing information on mental health responses and psychological support to these women on symptoms of perinatal grief. Still, plenty of studies have shown that their provision can help these families feel cared for and better able to navigate their grief.

Improvements in healthcare provision could start by implementing clear national guidelines (Kukulskienė and Zemaitienė, 2022) that include providing both spoken and written information, and mandatory follow-up consultations at least up to six months after miscarriage with both parents (Bellhouse et al., 2018; Robinson, 2014). Further improvements include changing or adapting medical facilities to provide privacy for suspected or confirmed cases of miscarriage and promoting a management style that supports parents' decision-making and facilitates healthcare providers' provision of quality care. Finally, specialized training for healthcare providers on how to deal with parents who miscarried, regulate their own feelings, and monitor their own mental health should be provided (Emond et al., 2019; Jensen et al., 2019). Overall, healthcare satisfaction and its impact on parents after miscarriage is an underserved area in Portugal that needs attention.

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Ethics approval

The University of Madeira approved this study, specifically the Data Protection Committee (February 9th, 2022) and the Ethics Committee (February 17th, 2022- Number P27/CEUMA/2022). It was performed per the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Consent to participate

The participants provided their informed consent to participate in this study and for publication of the data collected.

Availability of data and materials

The data that support the findings of this will be available upon request to the first author.

Authors' contributions

The study was designed and defined by all authors. Data was collected and analyzed by DCGM, and all authors interpreted the results. The current version of the manuscript was revised and approved by all authors.

CRediT authorship contribution statement

Diana C.G. Mendes: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Ana Fonseca:** Writing – review & editing, Validation, Supervision, Methodology, Conceptualization. **Mónica S. Cameirão:** Writing – review & editing, Validation, Supervision, Methodology, Investigation, Funding acquisition, Data curation, Conceptualization.

Declaration of competing interest

All authors certify that they have no affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this manuscript.

Data availability

Data will be made available on request.

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