

Original Research

Validity and Reliability of the Perinatal Grief Intensity Scale in a Chinese Clinical Sample: A Prospective Cross-Sectional Study

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Abstract

Background: This study introduced the Perinatal Grief Intensity Scale (PGIS) and applied it to assess the reliability and validity of perinatal loss in Chinese mothers. **Methods:** To sinicize PGIS and cultural debugging of the scale, reliability validity was assessed in this prospective cross-sectional study. **Results:** The Chinese version of the PGIS contained 14 items in three dimensions: reality, confront others, and congruence. The content validity index (CVI) at the total scale level, mean scale level, and item level was 0.92, 0.909, and 0.860–1.000. Exploratory factors were identified as three metric factors with a cumulative variance contribution rate of 66.627%. The Chinese version of the Perinatal Grief Scale (PGS) was used as a calibration standard, and the correlation coefficient was 0.759. The total Cronbach's alpha coefficient for the Chinese version of the PGIS was 0.768, with a fold-half reliability of 0.749. The scale showed good reliability and validity. **Conclusions:** The Chinese version of the PGIS was used as a calibration standard by exploratory factor testing, and the correlation coefficient was good, and the scale had good reliability and validity for application in China.

Keywords: fetal loss; perinatal grief; scale; validity; reliability; Chinese version

1. Introduction

Perinatal loss [1] is defined as the involuntary termination of pregnancy or infant death that occurs from the time of conception to 28 days after delivery due to miscarriage, stillbirth, and neonatal death. Perinatal grief [1] is the physical, psychological, and behavioral response to experiencing the loss of someone or something meaningful to the person. Healthcare professionals who are in the closest contact with patients should identify early whether it is a normal grief response or an abnormal grief response. They also should identify high-risk symptoms to predict grief intensity using professional assessment tools [2,3] to reduce severe anxiety and depression after perinatal loss. The Perinatal Grief Intensity Scale (PGIS) was originally developed as a perinatal grief-specific assessment tool to assess people experiencing perinatal loss. PGIS has been used to predict the intensity of grief in women with miscarriages in the United States with good reliability [4]. The purpose of this study was to make the Chinese version and evaluate the PGIS to provide a reliable research tool for early identification of the level of anxiety and depression in women with perinatal loss in China.

2. Methodology

2.1 Introduction to the Perinatal Grief Intensity Scale

The PGIS was first developed in 1998 by Professor Huttu *et al.* [4] at the School of Nursing, University of Louisville, as a clinical assessment tool for perinatal grief intensity and then validated by them in 2018 with repeated applications to have high reliability and validity in identifying current grief intensity and predicting women at greatest risk for future intense grief, severe depression, anxiety, and also women who require follow-up after perinatal miscarriage [5,6]. Therefore, the Huttu Perinatal Grief Intensity Theoretical Framework and the current PGIS were developed in 2019 to help nurses assess the intensity of grief and provide efficient, relationship-oriented care [7]. The PGIS has 14 items in three dimensions (reality, confront others, and congruence). The reality dimension is scored on a four-point Likert scale (4 = completely disagree, 3 = disagree, 2 = agree, and 1 = completely agree), and the confront others and congruence dimensions are scored reversely (1 = completely disagree, 2 = disagree, 3 = agree, and 4 = completely agree). The total PGIS score is calculated as $3.08 + 0.41 \times \text{reality dimension score} - 0.2 \times \text{confront others dimension score} - 0.15 \times \text{congruence dimension score}$. The higher the total score, the more severe the grief reaction of the pregnant woman to the loss of the fetus, and a total scale score



of less than 3.535 was considered a normal grief reaction, with 3.535 as the best cut-off point to indicate severe grief. Cronbach's alpha coefficient of the original scale was 0.82, Cronbach's alpha coefficient of each dimension was 0.70–0.82, and the content validity index (CVI) was 0.924, with good reliability and validity [8]. The validity was supported by factor analysis, which accounted for 66.94% of the total variance, with a sensitivity of 61.3% and specificity of 84.4%.

2.2 Sinicization of the Scale

(1) Authorization: Using the e-mail address of the professor who developed the English version of the PGIS scale, the research team requested the original version and the author's permission to use the PGIS.

(2) Translation and cultural debugging: The Brislin translation model was used, and cross-cultural debugging guidelines were followed for scale translation, integration, back-translation, re-translation, cultural debugging, and pre-survey. Two clinical nursing experts and one psychology expert from the hospital were invited to conduct independent scale translation. A doctor from the hospital who was fluent in medical English was asked to discuss and revise it in collaboration with the subject group members to initially form the translated version A. Two bilingual translators (an English teacher and a psychology teacher from a university medical school) who had not been exposed to the English version of the scale were asked to independently back-translate the translated version to form the back-translated version B. The original scale, translated version A, and back-translated version B were sent to the mentioned experts to compare and discuss the original English scale and the back-translated version B in terms of the meaning of its words, concepts, and expressions, and revise and adjust the translated version A, and then translate it to form the version C. The scale was then evaluated and version D was developed.

(3) Pre-survey: Using the convenience sampling method, 30 subjects were selected for a pre-survey in August 2021 to evaluate the subjects' understanding of the scale content and record relevant recommendations. The inclusion criteria for this study were as follows: individuals aged 18 years or older, gestational week of at least 10 weeks, a history of at least one perinatal loss, conception occurring naturally, and fetal abnormalities that necessitated termination of pregnancy. Participants with cognitive impairment or unconsciousness were excluded from the study. The subjects provided informed consent and willingly participated in the research upon hospitalization. They completed the reality dimension of the PGIS immediately after receiving the diagnosis and deciding to terminate their pregnancy. Furthermore, they were informed about a follow-up visit via telephone, scheduled for two weeks after the fetal abortion, during which they would complete the face-to-face dimension and the consistency dimension of the PGIS.

Pre-survey feedback and suggestions from the expert group were combined to further adjust the language and content of version D, which finally formed the Chinese version of the scale (version E) for formal evaluation.

2.3 Psychometric Properties of the Scale

2.3.1 Survey Respondents

In this prospective cross-sectional study, questionnaire survey was conducted from September 2021 to March 2023 using a convenience sampling method among pregnant women with confirmed fetal abnormalities at Jiaying Maternal and Child Health Hospital, Zhejiang Province, China. The inclusion and exclusion criteria were the same as the pre-survey. The Chinese version of the PGIS had 14 items, and the sample size was ten times the number of items, taking into account the attrition rate of 20%; therefore, a minimum sample size of 170 was estimated "a priori". A total of 300 questionnaires were ultimately distributed because of the sufficient sample sources. All eligible pregnant women who were invited to take part in the study agreed to participate. The study was approved by the Ethics Committee (Medical ethics approval number: 2021-98), and all subjects participated voluntarily and signed an informed consent form.

A total of 315 participants were invited to take part in the study. Among them, 16 declined participation and 9 provided incomplete data.

2.3.2 Survey Instruments

The official Chinese version of the PGIS (version E) is mainly used to identify the perinatal grief intensity early and indicate the need for early intervention and follow-up for possible high-intensity grief three to five months after the fetal loss [8].

The Chinese version of the Perinatal Grief Scale [5,6] includes 33 items with a median score ranging from 74.5 to 78, with higher scores indicating greater grief. It is used to determine whether a person is currently in a state of intense grief and whether intervention is needed. Its total score is calculated by summing the scores of the 33 items on its short version using Likert-type questions scoring from one (strongly agree) to five (strongly disagree). It has three dimensions, including active grief (AG), difficulty in coping (DC), and despair (D) with 11 questions each [5]. The scores of the three dimensions are summed, which range from 33 to 165, with scores above 90 indicating high-intensity perinatal grief. The reliability of the total scale was 0.95, and the reliability of the dimensions was 0.92 for AG, 0.91 for DC, and 0.86 for D, with high reliability and validity.

2.3.3 Data Collection Method

Data collection was conducted by surveyors who received uniform training in the admission preparation center and gynecology ward. These surveyors underwent a

two-week psychology course to equip them with the necessary skills to handle potential emotional crises in pregnant women during the research process. Eligible pregnant women, upon receiving their diagnosis and deciding to terminate their pregnancy, were immediately invited to participate in the study. They were asked to complete a self-administered pen-and-paper questionnaire, which included basic information such as age, education, occupation, income, and a comprehensive diagnosis, including maternal history. Additionally, the questionnaire included the reality dimension of the PGIS. On average, participants required approximately 5 to 10 min to complete the questionnaire. Subsequently, the participants were informed about the follow-up procedure, which involved completing the confront others and congruence dimensions of the PGIS via a telephone interview. This follow-up was scheduled to take place two weeks after the termination of their pregnancy. Conducting the follow-up via telephone allowed us to gain a more intimate understanding of the emotional impact experienced by these individuals when responding to the scale. The Chinese version of the Perinatal Grief Scale (PGS) [5,6] was also completed by telephone to correct and compare the consistency of the occurrence of high-intensity perinatal grief between the two scales, with a total score of 252 for the completed questionnaires and a recall rate of 84%.

2.3.4 Reliability Testing Methods

Correlation coefficient method [9]: To assess the sensitivity and representativeness of the items, the correlation coefficient between each item and the total score of the scale was calculated, and items with a correlation coefficient of <0.40 were deleted.

Decision-based valuation method: The total scores of 252 Chinese versions of the PGIS were sorted from highest to lowest, and the top 27% of the total scores were divided into high groups and the bottom 27% were divided into low groups, and the Critical Ratio (CR) values of each item were calculated using two-sample independent sample t-test to compare the differences between high and low groups on each item. A CR value >3.00 and a p -value <0.05 were used as inclusion criteria [9].

2.3.5 Validity Test

Content validity: Six nursing experts (the same cultural adjustment experts) were selected to evaluate the association of each item with predicting perinatal grief intensity using a 4-point Likert scale (1 = no correlation, 2 = weak correlation, 3 = strong correlation, and 4 = strong correlation), and the content validity indices were calculated at the item level, scale level, and mean scale level. When the CVI of the scale at the item level is >0.780 , at the total scale level is >0.800 , and at the mean scale level is >0.900 , the content validity of the scale is good [10].

Structural validity: Exploratory factor analysis was employed using principal component analysis and the orthogonal rotation technique. The Kaiser-Meyer-Olkin (KMO) value of >0.8 and the significant χ^2 value ($p < 0.001$) from Bartlett's spherical test indicate that the exploratory factor analysis is appropriate. When the loading values of each item on its corresponding common factor are >0.4 and the cumulative variance contribution is $>50\%$, the scale has good structural validity [11]; however, if the item loadings on multiple factors are >0.4 , deletion is considered [12].

The correlational validity: Pearson's correlation analysis was used to analyze the correlation between the total scores of the two scales. The Chinese version of the PGS, which is widely used clinically and has good reliability, was used as the calibration scale in this study. When the correlation coefficient is 0.4 to 1.0, the correlation between the items and the overall discrimination is good [10].

2.3.6 Reliability Test

The reliability was evaluated using internal consistency reliability (Cronbach's alpha coefficient) and split-half reliability.

Split-half reliability method: The respondents were divided into two halves, and the correlation coefficients between the scores of the two halves were calculated. Cronbach's alpha coefficient of >0.800 and the split-half reliability of >0.800 indicated the good reliability of the scale [7].

2.3.7 Statistical Methods

All data were stored in an Excel file and SPSS 25.0 software (IBM Corp., Armonk, NY, USA) was used for data analysis. Count data were described using numbers and percentages. Item analysis was performed using the correlation coefficient method and the decisive value method; the validity of the scales was evaluated using content validity, structural validity, and calibration correlation validity, and the reliability was evaluated using Cronbach's alpha coefficient and split-half reliability. The significance level of $\alpha = 0.05$ was considered.

3. Results

3.1 Cultural Debugging and Pre-Survey Results

This study combined translation, cultural adaptation, expert opinion, and pre-survey results to revise the scales, and the specific comments are as follows: (1) The experts suggested that item 2 "I do not think this baby is a person" and item 3 "I don't think this child has a specific personality yet" of the reality dimension be revised to "I do not think the baby during pregnancy has a specific personality" and "I don't think that this baby has a specific personality" to avoid unnecessary cultural conflicts. (2) Sub-item 3 "In the first few hours and days after I lost a loved one, if people said or did something that made me feel bad, I could

Table 1. General information of the study subjects (n = 252).

Variables	Number	Percentage	Variables	Number	Percentage	Variables	Number	Percentage
Fertility history			History of perinatal loss			Conception method		
None	156	61.9	None	85	33.7	Natural conceptions	243	96.4
≥1	96	38.1	1	96	38.1	Assisted conception	9	3.6
Age, year			2	34	13.5	Occupation		
<18	8	3.2	3 times	23	9.1	Employee	78	31.0
18–35	189	75.0	4 times	9	3.6	Worker	43	17.1
>35	55	21.8	≥5 times	5	2.0	Civil Service	47	18.7
Education level			Confirmation of gestational week			Others	84	33.3
≤ Junior high school	38	15.1	<10	46	18.3	Household income, million		
Junior college	128	50.7	10–14	89	35.3	<12	41	16.2
Undergraduate	72	28.5	14 ⁺ –20	72	28.6	12–20	156	61.9
Master	14	5.5	>20	45	17.8	>20	55	21.9

ask them to stop” was revised to “In the first few hours and days after I lost my baby, if someone said or did something that made me feel bad, I could ask them to stop” or “In the first few hours and days after I lost my baby, if someone said or did something that made me feel bad, I would ask them to stop”. (3) Item 8 “In the first few hours and days after I lost a loved one, if something happened that I did not like, I was usually able to fix it” was changed to “In the first few hours and days after I lost my baby, if something happened that made me feel sad, I was usually able to soothe my emotions and solve the problem on my own”. (4) The experts thought that the phrases “During and after my perinatal loss, I was satisfied with the way my loss was experienced because I had to go through” and “During and after my perinatal loss, I was satisfied with my interactions with the nurses” in items 11 and 14 are not in line with Chinese thinking and should be changed to “At the time of my loss and for some time afterward, I identified with my experience of losing my baby because it was a process that I had to go through” and “At the time of my loss and for some time afterward, I was satisfied with my interactions with the nurses and the care I received from the nurses” to be more helpful in understanding empathy in perinatal loss and make the statements more fluent. The final Chinese version of the PGIS included three dimensions and 14 items.

3.2 General Information of the Study Population

A total of 252 pregnant women with perinatal loss completed the survey in this study, and their general information is detailed in Table 1.

3.3 Results of Item Analysis

The correlation coefficients of each item and the total score of the scale were 0.526–0.659 ($p < 0.001$), which all were >0.400 , and the scores of each item were positively correlated with the total score of the scale, indicating a high correlation between each item and the scale and the items were not deleted. The CR values of the independent sample

t-test for high and low groups ranged from 6.675 to 11.638, which all were >3.000 , and the differences were statistically significant ($p < 0.001$), indicating that the scale items were well differentiated and all items were retained.

3.4 Validity Test Results

3.4.1 Content Validity

The CVI for the total scale level, mean scale level, and item level was 0.92, 0.909, and 0.860–1.000, respectively (Table 2).

Table 2. CVI of the PGIS and PGS (n = 252).

	Total scale	Mean level	Item level
CVI	0.92	0.909	0.860–1.000

CVI, content validity index; PGIS, Perinatal Grief Intensity Scale; PGS, Perinatal Grief Scale.

3.4.2 Structural Validity

The KMO value of the Chinese PGIS was 0.845 > 0.800 , and Bartlett’s sphericity test χ^2 value was 55.605 ($p < 0.001$), indicating suitability for exploratory factor analysis. Principal component analysis and orthogonal rotation method were used to set eigenvalues >1 . The results showed that a total of four common factors were extracted, and the cumulative variance contribution was 66.627% $> 50.000\%$. Items 13–14 formed common factor 4, and items 11–12 formed common factor 3. Along with the original questionnaire, common factor 4 was combined with common factor 3 after discussion by the group, which was consistent with the original scale dimension. The factor loadings of each item on the corresponding common factor ranged from 0.480 to 0.7 (all >0.400), and there was no double loading. All items provided their corresponding factor loadings, which were consistent with the attributed dimensions of each item of the original scale. The final Chinese version of the PGIS still had 11 items and 3 dimen-

Table 3. Content and factor loading matrix of the Chinese version of the perinatal grief intensity scale.

Dimension	Item content	Factor 1	Factor 2	Factor 3
Reality	1. Pregnancy does not seem very real to me.	0.589	0.183	0.215
	2. I do not consider a baby during pregnancy to be a real person in the true sense of the word.	0.676	0.213	0.314
	3. I do not yet think that babies of this age have specific personality traits.	0.688	0.168	0.128
	4. I feel like I did not just lose a pregnancy, but more than that, I lost my son or daughter.	0.743	0.314	0.247
	5. My pregnancy and baby are real to me this time.	0.480	0.126	0.248
	6. This looks more like a failed pregnancy than the loss of a baby.	0.706	0.215	0.218
Confront others	7. In the first few hours and days after I lost my baby, if someone said or did something that made me feel bad, I would ask him or her to stop.	0.231	0.618	0.217
	8. In the first few hours and days after I lost my baby, if something happened that made me feel sad, I was usually able to soothe my emotions and solve the problem on my own.	0.169	0.547	0.368
	9. In the weeks after I lost my baby, if someone said or did something that made me feel bad, I would ask him or her to stop.	0.217	0.658	0.248
	10. In the weeks after I lost my baby, if something happened that made me feel sad, I was usually able to soothe my emotions and solve the problem on my own.	0.115	0.728	0.215
Congruence	11. At the time, I lost my baby, and for some time afterward, I identified with my loss because it was a process I had to go through.	0.148	0.139	0.656
	12. At the time of my loss and for some time afterward, I was satisfied with my interactions with my family and how much they cared for me.	0.216	0.147	0.638
	13. At the time of my loss and for some time afterward, I was satisfied with my interactions with my friends and how much they cared for me.	0.168	0.218	0.587
	14. At the time of my baby's loss and for some time afterward, I was satisfied with my interactions with the nurses and the care they provided to me.	0.213	0.378	0.698

sions, i.e., reality, confront others, and congruence. The item contents and factor loading matrix are shown in Table 3.

3.4.3 Correlation Validity of the Calibration Scales

Table 4 displays the correlation coefficients between the total scores of the Chinese PGIS and the Chinese PGS scale. The correlation coefficient between these scores was found to be 0.759 ($p < 0.001$). Additionally, the correlation coefficients for the reality, confront others, and congruence dimensions were 0.749, 0.728, and 0.782, respectively ($p < 0.001$). These findings indicate that the Chinese PGIS demonstrated superior validity compared to the Chinese PGS scale.

Table 4. Correlations of the PGIS (n = 252).

	PGIS	Reality	Confront others	Congruence
Cronbach's alpha coefficient	0.759**	0.749**	0.728**	0.782**

PGIS, Perinatal Grief Intensity Scale; ** $p < 0.001$.

3.5 Reliability Test Results

Table 5 presents Cronbach's alpha coefficients for the Chinese version of the PGIS. The overall Cronbach's al-

pha coefficient was 0.768. Furthermore, Cronbach's alpha coefficients for the three dimensions, namely reality, confront others, and congruence, were 0.702, 0.783, and 0.753, respectively. The split-half reliability coefficient was calculated to be 0.749.

Table 5. Reliability analysis of the PGIS (n = 252).

	PGIS	Factor 1	Factor 2	Factor 3
Cronbach's alpha coefficient	0.768**	0.702**	0.783**	0.753**

PGIS, Perinatal Grief Intensity Scale; ** $p < 0.001$.

4. Discussion

4.1 The Chinese Version of the Perinatal Grief Intensity Scale has Good Validity

Validity reflects the correctness and validity of the scale, and the commonly used validity evaluation indices are content validity and structural validity [11]. The CVI at the item level was $0.86-1.00 \geq 0.78$, and at the total scale level was $0.92 \geq 0.90$, indicating that the content validity of the scale was good and can effectively predict the degree of risk of post-traumatic stress disorder (PTSD) after abortion. The scale introduction process through strict translation, back translation, expert consultation, and pre-testing fully

ensured the equivalence between the Chinese version of the scale and the original English scale. In addition, the structural validity of the scale was evaluated by exploratory factor analysis, and the loadings and cumulative variance contribution of each item were higher than the standard. The four metric factors extracted in this study were slightly different from the three dimensions of the original scale, which might be related to the different cultural backgrounds, fertility concepts, and lifestyles between China and the United States. The combination of male factor four and male factor three is a reflection of whether patients with perinatal loss perceive themselves as agreeable to their friends and healthcare providers, and both dimensions are compatible; thus, their combination is the same as the dimensions of the original scale.

4.2 Chinese Version of the Perinatal Grief Intensity Scale has Good Reliability

Reliability refers to the consistency between scale items, and Cronbach's alpha coefficient is the most commonly used measure of reliability. The results of this study showed that Cronbach's alpha coefficient and split-half reliability of each dimension and total scale were ≥ 0.70 , indicating that the items of the scale had homogeneity and good reliability [10].

4.3 Value of the Scale in Women with Perinatal Loss

Although the PGS [13] is the most commonly used standardized scale to assess post-abortion grief, it can indicate a significant increase in the intensity of perinatal grief with an increase in the number of miscarriages [14]; the PGS only detects the presence of high levels of stress or psychiatric problems in the current situation and does not provide an early prediction of severe anxiety and depression after miscarriage. Both PGS and PGIS are specific measures of perinatal loss and a history of mental illness in pregnant women experiencing a miscarriage. A history of mental illness, childlessness, unknown cause of perinatal miscarriage, limited social support, and marital/relationship discord put a woman at a higher risk for miscarriage and the development of pathology after perinatal loss [15]. Using the PGIS at the initial stage of diagnosis of unavoidable miscarriage or fetal abnormality can help identify patients who may suffer from depression or anxiety after perinatal loss [16], making them benefit from inpatient psychotherapy, medication, professional follow-up, and assessment of pregnancy spacing [17]. The time interval from awareness of risky pregnancy to two weeks after the loss is the optimal period to be assessed by the PGIS, which provides a positive effect on the psychological trajectory of post-traumatic growth within one month after discharge and helps patients to effectively cope with the 5-stage process of traumatic reaction, ruminative rumination, nostalgic farewell, positive coping, and post-traumatic growth and reduces PTSD in patients with pregnancy loss [17]. Patients with preg-

nancy loss develop PTSD [18], which can be identified by PGIS, indicating its significance. This scale has moderate items with simple and intuitive language and is generally completed in less than 10 min, making it functional. Using this tool can provide our healthcare professionals with an objective, quantitative, and practical method for the early identification of PTSD after perinatal loss.

4.4 The Strengths and Limitations of this Study

The Chinese version of the PGIS demonstrates strong reliability and validity when compared to the PGS [5]. This study confirms that the PGIS [19] is capable of predicting severe anxiety and depressive symptoms in women three months after perinatal loss, when administered two weeks following the event. This finding is valuable for healthcare providers as it helps identify women who require additional mental health assessment after experiencing a miscarriage. Healthcare providers play a crucial role in addressing clinical issues related to perinatal loss [20]. This study emphasizes the importance of accurately assessing the grief experience of families, understanding the grieving process, providing professional support, enhancing coping skills, facilitating acceptance of the reality of loss, demonstrating high patient acceptance, and ultimately promoting healthy family development. However, it is important to note that this study was conducted within a single tertiary care maternal and child health hospital, limiting the generalizability of the findings to other settings. Additionally, the study did not include a multicenter approach in recruiting the study population. Furthermore, the exploratory factor analysis of the scale was performed in this study, while confirmatory factor analysis and calculations of the scale's specificity and sensitivity were not conducted.

4.5 Implication for Future Research and Clinical Practice

Perinatal fetal death is a distressing event for families, characterized by a high incidence, prolonged negative psychological effects, and a significant impact on women's quality of life. However, the psychological aspects of grief in women experiencing perinatal loss have not received sufficient attention from clinical medical professionals in China. Limited studies have been conducted in this area, highlighting the need for more comprehensive investigations. Among medical personnel, nurses play a crucial role as they have direct contact with women affected by perinatal loss [21]. Firstly, they can encourage women to openly express their emotions and identify risk factors associated with their grief reactions. By actively listening, nurses can gain a deeper understanding of the unique grief experiences and psychological needs of this population. Secondly, nurses can provide sensitive and supportive care, implementing interventions aimed at mitigating the negative impact of perinatal loss on women, their partners, and their families. It is crucial to acknowledge and address grief in clinical practice, along with implementing targeted pro-

essional training and grief counseling for healthcare workers. Such initiatives should focus on families dealing with perinatal loss, while also assisting healthcare workers in effectively managing their own psychological well-being and experiences. Future research should incorporate confirmatory factor analysis to provide robust psychometric information about the PGIS scale, further enhancing its validity. Additionally, it is important to broaden the scope of the study population, continuously assess grief levels, and develop culturally relevant intervention models that can improve the grief experiences of women affected by perinatal loss. These efforts will enable women to actively engage in their lives following the loss and provide valuable insights for the development of grief support intervention programs within the Chinese cultural context.

5. Conclusions

The Chinese version of the PGIS was used as a calibration standard by exploratory factor testing, and the correlation coefficient was good, and the scale had good reliability and validity for application in China.

Abbreviations

PGIS, Perinatal Grief Intensity Scale; PGS, Perinatal Grief Scale; CR, Confidence Range; KMO, Kaiser-Meyer-Olkin; PTSD, Post-traumatic stress disorder.

Availability of Data and Materials

The authors confirm that the data supporting the findings of this study are available within the article.

Author Contributions

Study design: JPX and SQG; Data collection: JPX and SHS; Data Analysis: JPX; Manuscript Writing: JPX. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript. All authors have participated sufficiently in the work and agreed to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki. This project received ethical approval from the Medical Ethics Committee of Maternal and Child Health Hospital, Zhejiang Province, Jiaxing City, China (Medical ethics approval number: 2021-98).

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Conflict of Interest

The authors declared no conflict of interest.

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