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"Translation, cultural adaptation, and validation of perinatal grief scale in Urdu: Addressing a gap in the research of perinatal loss in Pakistan–Cross-sectional validation study"

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Abstract

Background and Aims: Perinatal grief have a significant influence on maternal mental health, hence appropriate tools for assessment are necessary. In this study, we translated and validated the Perinatal Grief Scale in Urdu (PGS-Urdu) for use in Pakistan, therefore filling the gap in validated tools.

Methods: Data was collected from 165 women using consecutive sampling. Initially, "forward/backward" translation was used. For validity, content validity index and confirmatory factor analysis (CFA) were used respectively, and "Cronbach's-Alpha" for reliability. In the validity stage, items 8, 11, 23, and 32 of the original scale were eliminated based on feedback from the target groups and the expert panel. For data-analysis, SPSS 26 and Amos 26 were used.

Results: In analyzing the "Confirmatory factor analysis", the "all-fitness indicators" validated the three-factor structure of 29-item main scale. Cronbach alpha value was 0.83 for the entire scale The CFA results showed that all fitness indicators, with the exception of four, had loadings greater than 0.20, supporting the main scale's three-factor structure. With a Cronbach's Alpha value of 0.83 for overall reliability, and varied from 0.81 to 0.87 for the PGS-U variables. the PGS-U exhibits an acceptable level of internal consistency.

Conclusion: The PGS-U identifies women in perinatal grief for medical and social care. This research supports using the Urdu perinatal grief scale in obstetrics and bereavement counseling to reduce maternal mental health issues.

KEYWORDS
perinatal bereavement, perinatal grief scale, perinatal-loss, validation study

1 | INTRODUCTION

Perinatal Loss affects around 10% of mothers globally. It is widely recognized that it has a profound influence on the physical and psychological wellness of the mother.[1] Whereas grieving is a natural, universal, and habitual reaction to an extreme loss. It occurs when an individual exhibits an excessive, ongoing, stressful, mourning process, indicating a severe public health problem that affects the individual, family members, and society.[2] Abortion, ectopic pregnancy, stillbirth, or newborn death account for 20%–25% of all births globally. The average perinatal death rate in Pakistan increased slightly from 60 to 90 thousand live births in 1997 to 63–92/thousand live births in 2004, with more than half being stillbirths, due to which perinatal grief after a loss is now widely acknowledged in Pakistan as a major mental health concern.[3,4]

Perinatal loss traumatizes women and affects future pregnancies.,[5] and has detrimental effects on spousal relationships.[6] Perinatal loss can cause severe depression, anxiety, irritability, and suicide ideation in women.[7] and if these responses are not addresses timely, it results in complications.[8] The issues may predispose women to risks of cardiovascular disease, diabetes, and eating disorders leading to excessive weight gain, and in extreme cases early mortality.[9] All these health conditions also negatively impact future pregnancies, therefore managing the after-effects of perinatal loss is critical for woman's trauma recovery.[10]

The available scarce evidence on grief following perinatal loss shows that women who have experienced perinatal losses face serious mental health issues. Hence, there is no validated tool in Urdu, which is the national language of Pakistan and is widely spoken and understood by everyone. Given that Pakistan has highest rates of perinatal losses in South Asia, it is important that there is a validated measure in Urdu to quantify the scale of perinatal grief. The present research helps to identify a tool to help health professionals identify women with perinatal loss at risk of adverse mental well-being outcomes. The aim of the translation was to create a culturally appropriate scale in Urdu that preserves the meaning of each Urdu sentence when compared to its English counterpart and is understandable to the women in Pakistan. We also aim to validate this essential tool in Urdu.

2 | METHODS

This validation research was based on translating the original "English version of the (short version of perinatal grief scale) SVPGS" using WHODAS 2.0 translation package (version 1.0)[11] The SVPGS were translated from English to Urdu by a professional (MA English), and then backward translated from Urdu to English by another professional (bilingual translator). To aid in the translation process, the focus group approach was employed. To complete the Urdu translation, the panel of seven members comprises bilingual professionals with English language competencies, psychiatry, psychology, clinician, public health (mental health), and gynecology, as well as a

> **Highlights**
> Perinatal grief is a major contributor to maternal mental health problems. This study translated and validated the Perinatal Grief Scale (PGS) into Urdu (PGS-U) for use in Pakistani women with perinatal loss. The PGS-U was found to be a reliable and valid tool for assessing perinatal grief in Pakistan.

native speaker (Pakistan). IBM SPSS 26 was used to analyze the data, while Amox 26 was used to verify it. The validity and reliability of the study were checked by statistical analysis, and for testing reliability, Cronbach's alpha coefficients were calculated. A coefficient of alpha ≥0.70 was counted as good internal consistency reliability. And for validity, factor analysis was done. The translation aimed to produce a perinatal grief scale in Urdu that preserves the meaning of each Urdu sentence with its English counterpart and is understood by women in Pakistan, Figure 1.

2.1 | Tool: Perinatal grief scale

The original English version of PGS contained 104 items. Later, items with poor correlation were deleted from the scale, resulting in a 33-item PGS with a 0.95 alpha coefficient.[12] The 33-item Likert scale has responses that vary from strongly agree to be 1 to strongly disagree being 5.[13] There are three subscales in the PGS: Active Grief (questions 1–11), including questions on topics such as sobbing for their infant, grief, or mourning the baby as a natural reaction to their loss. The difficulty coping subscale (questions 12–22) reflects the complexities of sorrow, such as a lack of social support, trouble with daily tasks, or a sense of guilt. Despair (questions 23–33) depicts a sense of hopelessness and the impact of prenatal bereavement on a long-term basis. It has been reported that the severity of the responses increases as one progresses from Active Grief to Difficulty Coping with Despair. There are 11 items in each subscale. On the perinatal grief scale, the total subscale score varies from 33 to 165. A score higher than 90 is identified as having a psychiatric condition, which needs active treatment.[14]

2.2 | Sample

The hospital-based validation study was conducted between August to November 2022, in the obstetrics and gynecology department of Rawal General and Dental Hospital (RG& DH) and Railway General Hospital. We used consecutive sampling technique for collecting data. This method helps to get data in consecutive manner that is first come, first served basis. According to the guidelines for validation study, "the respondent-to-item ratio" rule is applied, which means that for every 10 items on the questionnaire, there should be 50 respondents.
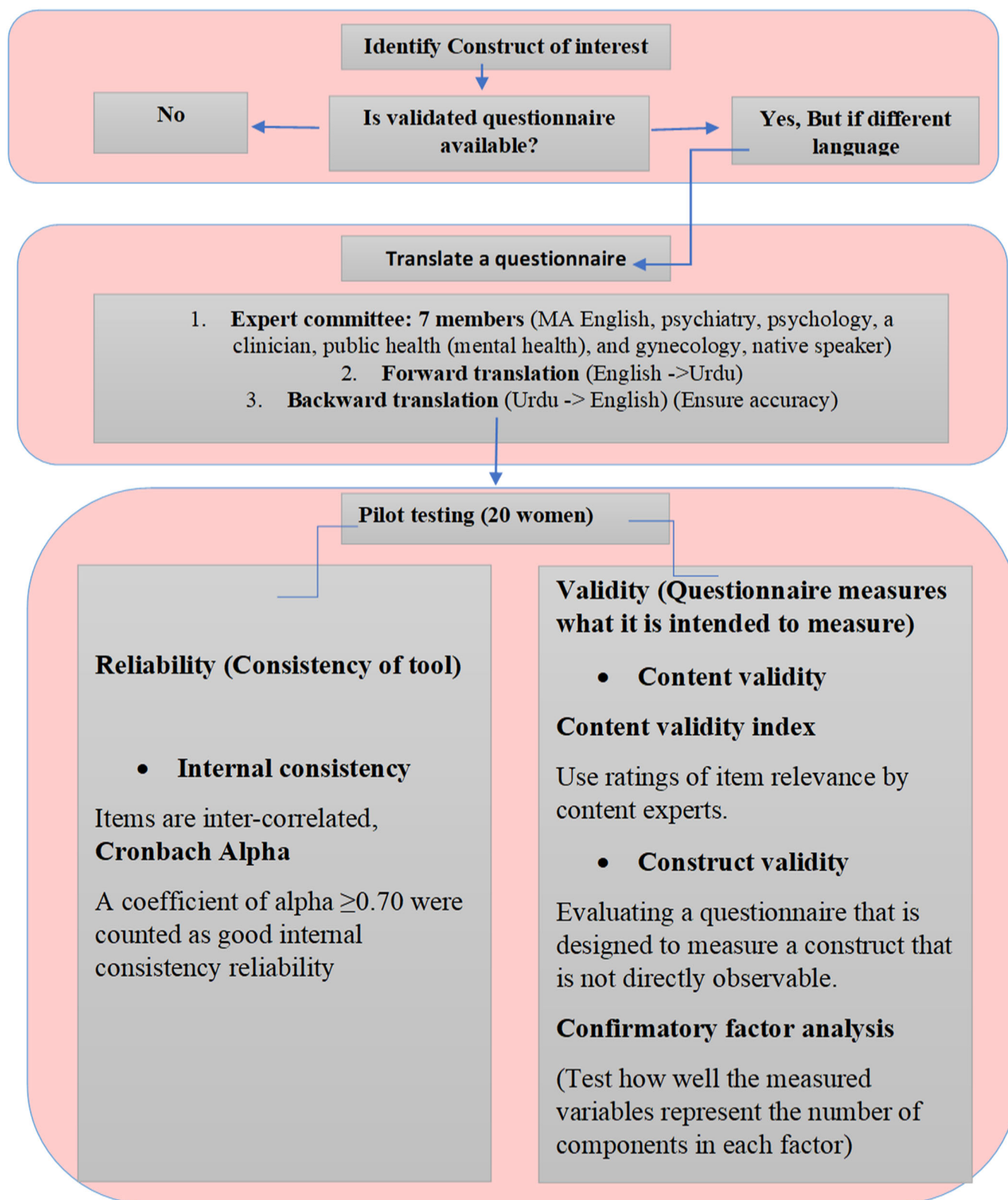
Identify Construct of interest

No ← **Is validated questionnaire available?** → **Yes, But if different language**

Translate a questionnaire

1. **Expert committee: 7 members** (MA English, psychiatry, psychology, a clinician, public health (mental health), and gynecology, native speaker)
2. **Forward translation** (English ->Urdu)
3. **Backward translation** (Urdu -> English) (Ensure accuracy)

Pilot testing (20 women)

Reliability (Consistency of tool)

- **Internal consistency**

Items are inter-correlated, **Cronbach Alpha**

A coefficient of alpha ≥0.70 were counted as good internal consistency reliability

Validity (Questionnaire measures what it is intended to measure)

- **Content validity**

Content validity index

Use ratings of item relevance by content experts.

- **Construct validity**

Evaluating a questionnaire that is designed to measure a construct that is not directly observable.

Confirmatory factor analysis

(Test how well the measured variables represent the number of components in each factor)

FIGURE 1 Overview of PGS-U translation and validation.

Our questionnaire had 33 items and applying "respondent-to-item ratio" rule our estimated sample size was 165 women.

We included women with perinatal loss from the time of conception right through to the loss of a baby who was born alive but died within 28 days after birth (neonatal period) in the past 2 years, aged ≥18 years; women admitted to hospital or visited obstetrics and gynecology OPD, and women identified as a confirmed case of pregnancy loss by the physician. However, women

who need emergency medical care, and women with psychotic episodes were excluded from the study.

2.3 | Analysis

For the analysis of demographic characteristics we calculated percentages and frequencies (Table 1) using software SPSS version 26. For reliability testing Cronbach's alpha was computed to examine the internal consistency of the scale based on information from 165 women in the target group to establish the reliability of the final version of the PGS-U.

TABLE 1 Demographics of the participants.

Characteristic	n (%)
Age	
18–20	7 (4.2%)
21–30	104 (63%)
31–40	52 (31.5%)
45+	2 (1.2%)
Education level	
No education	40 (24.2%)
Primary	31 (18.8%)
Secondary	50 (30.3%)
Diploma	13 (7.9%)
Degree	31 (18.8%)
Employment status	
Unemployed	130 (78.8%)
Employed part time	35 (21.2%)
Pregnancy losses	
1	81 (49.1%)
2 or more	84 (50.9%)
Time of loss (trimester)	
First trimester	89 (53.9%)
Second trimester	28 (17%)
Third trimester	21 (12.7%)
Forth trimester	27 (16.4%)
Type of loss	
Ectopic	4 (2.4%)
Miscarriage	91 (55.2%)
Stillbirth	19 (11.5%)
Abortion	23 (13.9%)
Neonatal death	28 (17%)

2.3.1 | Qualitative assessment of content validity

Content and construct validity were used to validate the instrument. Content validity was assessed using qualitative and quantitative methodologies. Experts were asked to write about how to improve each item's content, Urdu grammar, amount of words and phrases, sequencing, and instrument structure for qualitative assessment. After getting expert feedback, the research team modified questionnaire items as needed.

2.3.2 | Quantitative assessment of content validity

The Content Validity Index (CVI) supplied item validation data for quantitative assessment. Each questionnaire item was grouped in an excel spreadsheet and given individually to the panel of experts. After consulting experts, data was extracted and CVI was estimated using the method for each of the three parameters. The mean values and total CVI for each item were calculated last. After measuring the CVI for each item, the acceptability of each item was evaluated according to the following criteria: acceptable items (scores of >0.79), items needing adjustment (scores of 0.70–0.79), and unsatisfactory items (scores).[15]

For the PGS-U's qualitative content validity, eleven experts—one family physician, one mental health expert, two psychologists, one psychiatrist, one gynaecologist, one public health professional, and four women responded to the questionnaire's content, scale wording, item allocation, and item scaling. The content validity index (CVI) was utilized for quantitative assessment, while the replies were used for qualitative assessment. Thus, the same experts were asked to evaluate all PGS-U questions on a 4-point Likert scale using three criteria, including relevancy. For instance, we asked experts to rate the topic on a "4-point Likert-scale" from 1 to 4. The four relevance scores ranged from 1 (not-relevant) to 4 (highly-relevant). CVI was determined for each item using the formula such as: [CVI = The No of raters providing a "3" or "4" rating/Total number of raters].[16] Using recommendations by the previous researchers CVI 0.70 was deemed undesirable, CVI between 0.70 and 0.78 needed adjustment and modification, and CVI 0.79 was deemed acceptable.[17] After receiving experts' opinions, modest adjustments were made to a few areas and revisions made with as minimal changes to the original version of PGS as possible. Following that, we revised the pre-final PGS-U based on comments from the expert panel's viewpoints. The PGS-U was finalized in preparation for construct validity.

2.4 | Construct validity

We carried out a confirmatory factor analysis (also known as CFA) to investigate the construct validity of the PGS-U[18] The number of components was previously known by the model's original author since the (CFA) look for a preset model based on earlier ideas and

research;[19] It helps to determine which particular items make up subscales of which factors. The criteria also decide if the questions measure the desired indices. There are many goodness-of-fit indexes that determine model compatibility. The current analysis used AMOS 26 software for CFA to adjust expected factors. "Goodness-of-fit indices" used included ("Root Mean Square Error of Approximation"), known as ("RMSEA"), "Goodness-of-Fit index" ("GFI"), and the "Comparative Fit Index" ("CFI"). RMSEA readings below 0.08 are acceptable. CFI and GFI should be closer to 1 since this is preferable.[20]

3 | ETHICAL APPROVAL

The institutional review board, Ethical committee Rawal General and Dental Hospital (RG & DH) (Main Lehtrar Road, Khanapul Khanna Islamabad, Islamabad Capital Territory) and Railway General Hospital (Railway Carriage Factory Road, Railway Scheme 7, Rawalpindi, Punjab) provided ethical approvals. Consent from participants of the study and permission from one of the co-authors of the original PGS (Judith N. Lasker of Lehigh University) was taken before the research via email.

4 | RESULTS

In our sample, more than half (55.2%) of women suffered a miscarriage, 17.0% had neonatal mortality, and 11.5% had a stillbirth. In the first trimester, more than half (53.9%) of the losses were recorded, followed by 17% and 12% in the second and third trimesters, respectively. Most women (63%) were between the ages of 21 and 30, while 31.5% were older than 40. One-third (30%) of women had an elementary education, while just 18% held a bachelor's degree. Only 17% of women were full-time employees, while the majority (78%) were housewives.

A pilot study was done on 20 women, almost 10% of the population, with a Cronbach alpha of 0.8. While the Cronbach's alpha of 165 women was 0.83 for the total scale and 0.87, 0.80, and 0.83 for the subscales of the "Active Grief", "Difficulty Coping" and "Despair" respectively shown in (Table 2). Cronbach's alpha coefficients for

perinatal grief scale Urdu version subscales were higher than 0.70, which is the minimum standard for reliability.[21]

The CVI of 29 items in the pre-final PGS Urdu version was greater than 0.79, hence they were regarded as suitable items. Only four items (#8, #11, #23, and #32) had CVI scores less than 0.79, with several unclear wording and phrases, therefore modifications were proposed. The preliminary version of the "PGS Urdu" was sent to experts for review after considering experts' views about items with poor CVI scores. During the process of reexamination, all items acquired acceptable scores and were validated except #8, #11, #23, and #32. All four elements with low scores were removed from the first scale and the procedure was carried on without them. Finally, a final version of the PGS with 29 questions spread over three subscales was developed: "Difficulty of Coping," with 9 items; "Active Grief," with 11 items; and "Despair," with 9 items.

The findings of the present study indicate CFI is 0.900, and RMSEA is 0.058 as shown in Table 3. To provide the most applicable model of (PSG-U), a CFA was carried out to test the construct-validity using information obtained from 165 recruited women. Corrective indices were considered to arrive at a better result and improve the model. When analyzing outcomes of the CFA, covariance was applied to items D4 (PGS item no 17) and D7 (PGS item no 22), D6 (PGS item no 20), and D7 (PGS20), respectively shown in (PGS-U attached) An observable performable covariance was used for the achievement of the desired goals. The (Table 3) shows results for CFA, and the graphic displays the model in (Figure 2). The conceptual model was constructed using AMOS version 26. This model shows that none of the 29 goods demonstrated any loading lower than 0.20, which was also used as a criterion. In the PGS-U, four items had loadings lower than 0.20 on all three factors. These included item no. 8, which stated, "You have considered suicide since the loss." item no. 11, item no. 23, and item no. 32, which considered bereaved parents synonymous to being a "Second-Class Citizen." Because their CVI was much lower than the requirement of 0.70, all of these questions were disqualified before CFA.[22] Only 29 items were subjected to the CFA test.

5 | DISCUSSION

The goal of the current research was to provide a detailed account of the steps taken throughout the translation and cultural adaptation of the PGS into Urdu. The PGS went through a successful process of translation and adaptation on our end. In the process of developing the PGS-U, four of the original items that comprised the scale were removed. Throughout the whole process of translating and culturally adapting PGS, we did not run across any significant obstacles. Even while it was not required to make significant modifications to the original form, we did make some small adjustments to some of the questions to make it easier for mothers to comprehend and to make it more culturally acceptable for Pakistani mothers. The comments received from experts were based on the opinions that were given by the target group during the validity stage. Item #2, which was

TABLE 2 Comparison of PGS-U reliability with original and Persian Version.

Subscales	Internal consistency: Cronbach's alpha (present study)	Internal consistency: Cronbach's alpha Toedter et al., 2001[9]	Internal consistency: Cronbach's alpha Siadatnezhad etal., 2018[22]
Active grief	0.87	0.92	0.88
Difficulty coping	0.81	0.91	0.87
Despair	0.83	0.86	0.86
Total	0.83	0.95	0.95

TABLE 3 CFA fit indices.

Fitness indices	PNFI (1)	PCFI (2)	GFI (3)	CFI (4)	RMSEA	CMIN/DF (6)
Score of PGS-U	0.690	0.812	0.800	0.886	0.06	1.62
Acceptable fit	0–1	0–1	>0.9	>0.9	<0.05	<5
	Kalkbrenner, 2021[22]	Kalkbrenner, 2021[22]	Mohanty & Aamir, 2018[23]	Ebadi et al., 2019[24]	Ebadi et al., 2019[24]	Ebadi et al., 2019[24]

"Do You find it hard to get along with certain people?", was changed to "Do you feel difficulty in meeting certain people". Some participants had problems understanding item 9 ("Do You take medicine for your nerves?") which was then changed to, "Do you take drugs/medicines to comfort yourself?" and item #18 (Do you try to laugh, but nothing seems funny anymore?) changed to, "Don't you feel happy despite the effort?"

In contrast to the findings of earlier research, various translators of the (PGS) have incorporated a variety of cultural considerations into their work. Using the translation and the back translation procedure to translate the tool from English to Czech, the item on the Likert scale changed "not disagree, and "not agree" to "I don't know" because this expression is more frequently used by Czech people.[25] Translated version of PGS in Swedish used 5-choice Likert-scale with 10-possible options, on Likert-scale for their research in Sweden since their population was more familiar with this number of alternatives. This was done because the number of choices on the original scale was 5. Since the Urdu word for "grief" already exists, no modifications are required.[26]

In the validity evaluation, items #8, #11, #23, and #32 were not relevant even after being reevaluated based on the views of the women who were a part of the target group and the opinions of the experts. Simplicity, relevancy, and clarity are three criteria of the CV1 assessment[27] As a result, items #8, #11, #23, and #32 were deleted from the PGS Urdu version, and the process resumed without them. In a previous study, which also included the translation of this scale into other languages, the Persian version of the scale provided a report regarding the deletion of items at this stage; before the "confirmatory factor analysis". As a result, the deletion of four items at this stage is comparable to research that has been done in the past. The results of the CFA analysis in this research indicate that the model fitness measures were appropriate. Persian version of the perinatal grief scale showed similar results to our study. 31 items had CVI lower than 0.79 in PGS Persian version. Whereas, construct validity also showed similar results with PGS-U, CFI for both the PGS-U and PGS Persian version is 0.86. Whereas RMSEA of the Persian version is 0.06 whereas the Urdu version has less than 0.05 which is more appropriate.[27] The Urdu version of PGS has three factors, one is Active grief which has 11 questions, Difficulty coping having 9 questions moreover, Despair has 9 questions. However, in the Czech version of PGS, EFA was assessed based on maximum likelihood with varimax rotation. Exploratory factor analysis (EFA) came first in the study taken out in Spanish version of PGS[28] Then came the confirmatory factor analysis (CFA). The findings of this phase suggest that 19 of the 33 items on the primary scale had an appropriate factor indicated on two of the factors. Then, the CFA was conducted, and the scale was validated by two factors: "Active Grief," with 13 questions, and "Difficulty Coping/Despair," with 6 items for each component. Before going on to a confirmatory component analysis, Biatric and colleagues started their investigation with an exploratory factor analysis. The two-factor structure of the scale was validated by removing four items from the scale and placing the remaining questions on the subscales ("Active Grief" and "Complicated Grief").[29]

In the present analysis, the data that were collected during the reliability stage of the scale revealed that the PGS-U had a high degree of stability. Because of this, the alpha coefficients that the Reliability coefficient produced for the overall scale as well as the subscales that were labeled "Active grieving," "Difficulty Coping," and "Despair" were appropriate.

6 | LIMITATIONS OF THE STUDY

Analogous to other studies, this study also has several limitations. Small sample size was the limitation in the study. Data was only collected from the hospitals instead of the general population due to time constraint. The results of the research may have limited applicability to women in other areas or countries, since it was done only with a specific set of women in a particular region of Pakistan. The reliability of the PGS-Urdu might be impacted by cultural disparities among Urdu-speaking groups. It is crucial to investigate the applicability of the scale to various cultural groupings. Furthermore, the PGS-Urdu was compared to other existing Urdu scales or measures assessing perinatal grief. It would be valuable to understand how the PGS-Urdu compares to similar tools in terms of reliability and validity.

7 | RECOMMENDATIONS

Promote the use of the translated and approved PGS-Urdu in Pakistani clinical settings. The availability and validity of the tool to measure perinatal grief in Pakistani women should be disclosed to clinicians and other healthcare professionals. Give healthcare professionals instruction on how to administer and interpret the PGS-Urdu. This will guarantee that experts have all they need to apply the instrument efficiently, which will enhance the identification and assistance of women going through perinatal grief. Establish
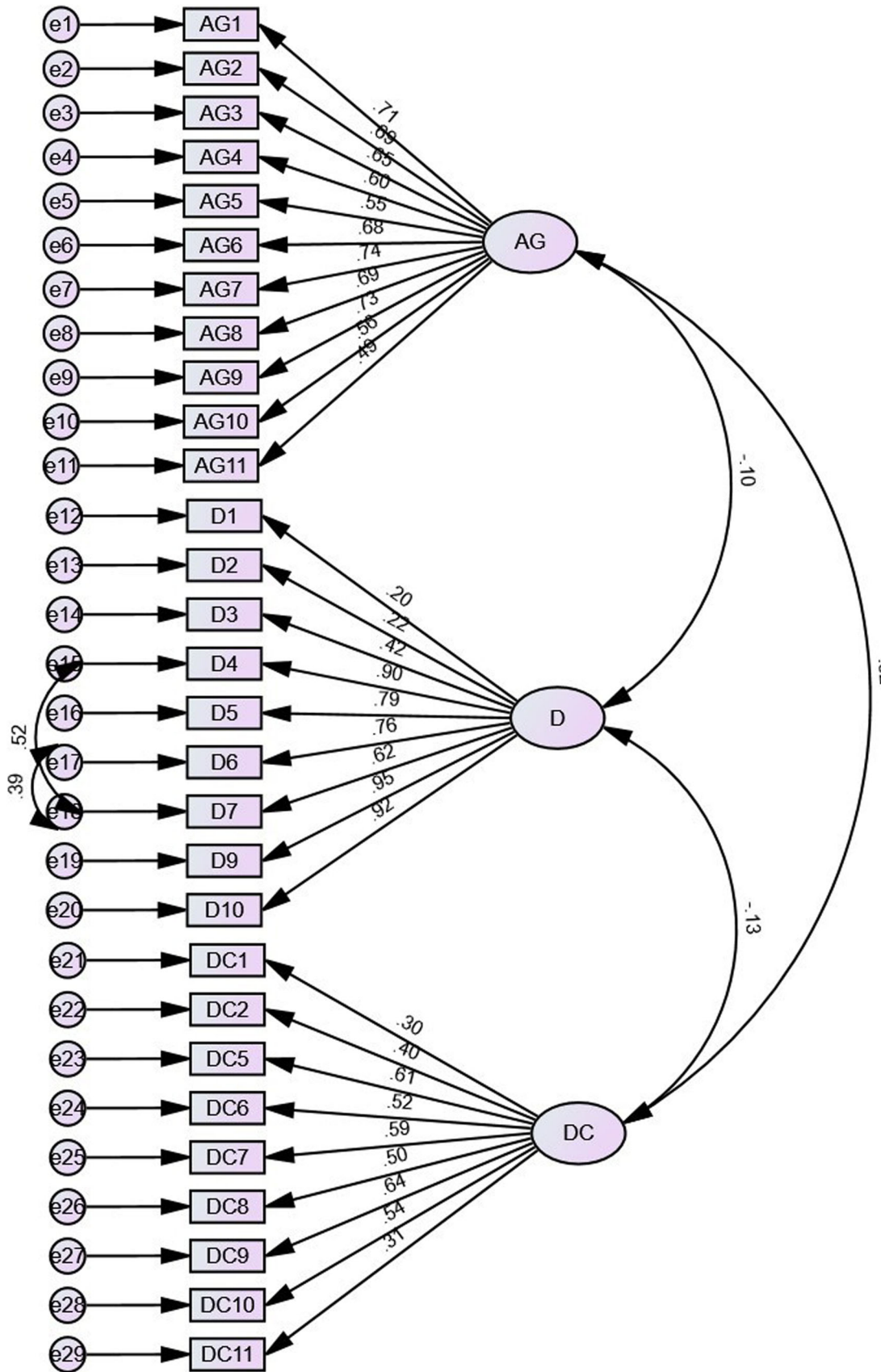
FIGURE 2 Structural model of PGS-U on AMOS.

public health initiatives to increase understanding of prenatal loss and its effects on the mental health of mothers. Promote the availability of the PGS-Urdu, a culturally validated instrument for perinatal grief assessment, and stress the value of early intervention and support-seeking. Promote further studies on the PGS-Urdu's applicability in Pakistan's varied demographics. To make sure it is widely applicable, look at its usefulness in various geographical locations, socio-economic situations, and cultural contexts. Work together to include the PGS-Urdu into the programs of mental health organizations and support groups. This may provide a comprehensive strategy for perinatal mental health assistance by fusing community-based treatments, counseling, and evaluation instruments. Encourage the use of culturally validated instruments in perinatal mental health assessments and their integration into national health strategies. This will highlight how crucial it is to treat perinatal loss as a crucial aspect of providing healthcare to mothers.

AUTHOR CONTRIBUTIONS

Maryam Nisa: Conceptualization. **Seema Laila**: Writing–original draft. **Muhammad Muzzamil**: Writing–original draft. **Anum Ghafoor**: Writing–original draft. **Najma Zakir**: Resources; data curation. **Tehzeeb Zulfiqar**: Methodology; supervision. **Abid Malik**: Writing–original draft; writing–review & editing. **Abdullah Malikzai**: Writing–original draft; writing–review & editing.

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CONFLICT OF INTEREST STATEMENT

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

DATA AVAILABILITY STATEMENT

All data included in manuscript.

TRANSPARENCY STATEMENT

The lead author Abdullah Malikzai affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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