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Original Research

Understanding Maternal Ambivalence Across Cultures: Psychometric Validation of the Maternal Ambivalence Scale in Colombia and Comparison With Spain

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Abstract

Background: Maternal ambivalence, defined as the coexistence of conflicting feelings toward motherhood, is a culturally embedded experience closely linked to perinatal mental health. This study examined the psychometric properties of the Maternal Ambivalence Scale (MAS) in Colombian women and compared maternal ambivalence and psychological adjustment between Colombian and Spanish perinatal samples. **Methods**: A cross-sectional online survey included 456 Colombian women (mean [*M*] = 27.5, standard deviation [*SD*] = 6.1; range = 18–48 years; 296 pregnant, 160 postpartum). Participants completed the MAS, the Overall Anxiety Severity and Impairment Scale (OASIS), the Overall Depression Severity and Impairment Scale (ODSIS), and the Satisfaction with Life Scale (SWLS). A confirmatory factor analysis (CFA) in R (lavaan, semTools) tested the three-factor model (Doubts, Rejection, Suppression) with robust maximum likelihood estimation (MLR). Measurement invariance was evaluated across the perinatal stage and country. Nonparametric analyses (Spearman's ρ, Mann-Whitney U) were performed in SPSS v27.0. **Results**: The MAS showed excellent fit, $\chi^2(74) = 143.71$, $p < 0.001$; comparative fit index (CFI) = 0.968; Tucker–Lewis index (TLI) = 0.960; root mean square error of approximation (RMSEA) = 0.050, 90% confidence interval (CI) [0.037, 0.062]; $\alpha = 0.80$–0.84. Measurement invariance across the perinatal stage was supported (configural, metric, scalar), and partial scalar invariance was achieved across countries. Higher Doubts and Rejection were correlated with depression ($\rho = 0.50, 0.40$), anxiety ($\rho = 0.42, 0.28$), and lower life satisfaction ($\rho = -0.48, -0.56$; all $p < 0.001$). Colombian women reported higher ambivalence and poorer well-being than Spanish women. **Conclusions**: The MAS demonstrated strong reliability, validity, and cross-cultural relevance, supporting its use in culturally sensitive perinatal mental health assessment.

Keywords: maternal ambivalence; psychometric properties; cross-cultural validation; pregnancy; postpartum

Comprensión de la Ambivalencia Materna en Diferentes Culturas: Validación Psicométrica de la Escala de Ambivalencia Materna en Colombia y Comparación con España

Resumen

Antecedentes: La ambivalencia materna, definida como la coexistencia de sentimientos contradictorios hacia la maternidad, es una experiencia culturalmente arraigada y estrechamente relacionada con la salud mental perinatal. Este estudio examinó las propiedades psicométricas de la Escala de Ambivalencia Materna (MAS) en mujeres colombianas y comparó la ambivalencia materna y el ajuste psicológico entre muestras perinatales colombianas y españolas. **Métodos**: Se realizó una encuesta transversal en línea a 456 mujeres colombianas (media [M] = 27,5, desviación estándar [DE] = 6,1; rango = 18–48 años; 296 embarazadas, 160 en posparto). Las participantes completaron la MAS, la Escala de Gravedad y Deterioro de la Ansiedad General (OASIS), la Escala de Gravedad y Deterioro de la Depresión General (ODSIS) y la Escala de Satisfacción con la Vida (SWLS). Un análisis factorial confirmatorio (AFC) en R (lavaan, semTools) evaluó el modelo de tres factores (dudas, rechazo, supresión) con una estimación robusta de máxima verosimilitud (MLR). Se evaluó la invarianza

de la medición a lo largo de la etapa perinatal y en todos los países. Se realizaron análisis no paramétricos (ρ de Spearman, U de Mann-Whitney) en SPSS v27.0. **Resultados**: El MAS mostró un ajuste excelente, $\chi^2(74) = 143{,}71$, $p < 0{,}001$; índice de ajuste comparativo (CFI) = 0,968; índice de Tucker–Lewis (TLI) = 0,960; error cuadrático medio de aproximación (RMSEA) = 0,050, intervalo de confianza (IC) del 90% [0,037, 0,062]; $\alpha = 0{,}80$–$0{,}84$. Se confirmó la invarianza de la medición a lo largo de la etapa perinatal (configural, métrica, escalar) y se logró una invarianza escalar parcial entre países. Las dudas y el rechazo más elevados se correlacionaron con la depresión ($\rho = 0{,}50, 0{,}40$), la ansiedad ($\rho = 0{,}42, 0{,}28$) y una menor satisfacción con la vida ($\rho = -0{,}48, -0{,}56$; todas $p < 0{,}001$). Las mujeres colombianas informaron una mayor ambivalencia y un menor bienestar que las mujeres españolas. **Conclusiones**: El MAS demostró una gran fiabilidad, validez y relevancia intercultural, lo que respalda su uso en la evaluación de la salud mental perinatal sensible a las diferencias culturales.

Palabras Clave: ambivalencia materna; propiedades psicométricas; validación intercultural; embarazo; posparto

1. Introduction

Motherhood has often been idealized as a period of fulfillment and joy, characterized by positive emotions. However, empirical research and clinical observation reveal that many women experience a complex interplay of affection, frustration, and ambivalence during the perinatal period (Míguez et al., 2017; Pillemer et al., 2019). Maternal ambivalence refers to the simultaneous coexistence of positive and negative feelings, beliefs, and attitudes toward motherhood (Pollack, 2024). This emotional duality is not pathological but reflects a normal aspect of psychological adjustment to the maternal role. Nevertheless, when unacknowledged or stigmatized, it may generate intense distress, self-doubt, and guilt (Silverio et al., 2025).

To study this phenomenon empirically, the Maternal Ambivalence Scale (MAS; Martín-Sánchez et al., 2022) was developed to assess three dimensions: Doubts (insecurity about one's desire or ability to be a mother), Rejection (negative feelings or resistance toward motherhood), and Suppression (tendencies to conceal or inhibit ambivalent emotions). The original Spanish validation provided strong evidence of validity and reliability, but the scale's cross-cultural applicability had not been established.

Maternal ambivalence has significant clinical implications. Persistent doubts or rejection may heighten vulnerability to perinatal depression and interfere with mother–infant bonding (Razina, 2014). Conversely, suppression of ambivalence can exacerbate anxiety and reduce life satisfaction, underscoring the need to integrate emotional complexity into maternal mental health frameworks. These associations support the inclusion of related constructs such as depression, anxiety, and subjective well-being, assessed through validated measures: the Overall Depression Severity and Impairment Scale (ODSIS; Osma et al., 2019), the Overall Anxiety Severity and Impairment Scale (OASIS; Osma et al., 2019), and the Satisfaction With Life Scale (SWLS; Vázquez et al., 2013). Together, these instruments enable a comprehensive evaluation of construct validity of the MAS.

Cultural context plays a fundamental role in shaping maternal ambivalence. Western societies often promote a "myth of motherhood", characterized by ideals of unconditional love, self-sacrifice, and perfectionism (Klann and Wong, 2023; Schmidt et al., 2023). Deviations from these ideals can evoke guilt and internal conflict. In collectivist societies such as Colombia, motherhood is culturally revered but simultaneously tied to rigid gender roles and expectations of duty and self-denial. Women therefore face dual pressures: upholding traditional maternal ideals while navigating modern aspirations of autonomy and equality (Alzate et al., 2024; Baum and Nisan, 2017). These conflicting cultural demands may intensify maternal ambivalence and emotional suppression.

The persistence of ambivalent sexism—including both hostile and benevolent forms (Glick and Fiske, 2011)—further influences maternal experiences. Research indicates that sexist beliefs are more pronounced in Colombia than in Spain, where gender equality legislation is more robust (Rodríguez-Burbano et al., 2021). In this context, internalized gender norms may heighten maternal doubts and inhibit emotional expression, contributing to the distinct manifestation of ambivalence among Colombian women (Rovira et al., 2022). Understanding these sociocultural factors is crucial for culturally sensitive assessment and intervention in perinatal mental health.

Despite growing interest, maternal ambivalence remains underexplored in Latin American populations. Colombian women, in particular, face socioeconomic and relational stressors that heighten vulnerability to perinatal depression and anxiety (Gaviria et al., 2019; Waqas et al., 2015). Consequently, there is a need to adapt and validate instruments such as the MAS within this cultural context to ensure their conceptual and psychometric equivalence.

The present study aims to (1) evaluate the psychometric properties of the MAS in Colombian perinatal women; (2) test its factorial validity through confirmatory factor analysis (CFA); and (3) compare cross-cultural differences in maternal ambivalence between Colombian and Spanish samples. We hypothesize that:

(1) The original three-factor structure (Doubts, Rejection, and Suppression) will be replicated in the Colombian sample.

(2) Colombian women will report higher ambivalence, particularly in Suppression, reflecting stronger cultural stigma and traditional gender expectations.
(3) Maternal ambivalence will correlate positively with anxiety and depression (OASIS, ODSIS) and negatively with life satisfaction (SWLS), providing evidence of construct validity.

By extending the psychometric evaluation of the MAS to a Latin American context, this study advances the cross-cultural understanding of maternal ambivalence and its relevance for perinatal mental health.

2. Materials and Methods

2.1 Procedure

This cross-sectional study was approved by the Ethics Committee of Jaume I University (Ref. CD/22/2021; April 15, 2021) and conducted in accordance with the Declaration of Helsinki. Data were collected through an anonymous online survey hosted on Qualtrics between April and June 2022. Participation required approximately 15–20 minutes.

Participants were recruited through targeted social media advertisements (e.g., Facebook, Instagram) and via collaborations with obstetric, midwifery, and maternal health associations in Colombia. Inclusion criteria were as follows: (a) age 18 years or older; (b) Colombian nationality or current residence in Colombia; and (c) being either pregnant or having at least one child aged 0–2 years.

Of the 512 women who accessed the survey, 56 were excluded for the following reasons: missing MAS data (n = 24) or not meeting inclusion criteria for pregnancy or postpartum status (n = 32). The final Colombian sample included 456 women, of whom 296 were pregnant and 160 were postpartum.

To ensure cultural and linguistic appropriateness of the MAS, the original Spanish version (Martín-Sánchez et al., 2022) was reviewed by two Colombian perinatal experts (a midwife and a gynecologist). Minor wording adjustments were made to improve clarity and naturalness for Colombian Spanish while preserving semantic equivalence. No items were added or removed.

For the remaining instruments (see below), the validated Spanish versions were used. These questionnaires were also reviewed by the same Colombian perinatal experts to ensure linguistic suitability. Given their brevity, clarity, and previously established validity in Spanish-speaking populations, no modifications were required.

All participants provided informed consent prior to beginning the survey and were informed of its voluntary and anonymous nature. The Qualtrics platform was programmed to require completion of each questionnaire before proceeding to the next. As a result, there was no item-level missing within any questionnaire (0%), although some participants chose not to complete later instruments. The MAS, administered first, was therefore completed by the full sample (n = 456), while subsequent measures (see below) had smaller valid subsamples, reported in all analyses.

2.2 Instruments

2.2.1 Maternal Ambivalence Scale (MAS)

The MAS (Martín-Sánchez et al., 2022) assesses maternal ambivalence using 14 Likert-type items (1 = strongly disagree to 4 = strongly agree), grouped into three subscales: Doubts (5 items), Rejection (5 items), and Suppression (4 items). Higher scores indicate greater ambivalence. In the current Colombian adaptation, internal consistency was strong (α = 0.84–0.88). Item-level skewness (S = –0.52–1.03) and kurtosis (K = –0.83–1.74) indicated acceptable univariate normality.

2.2.2 Overall Depression Severity and Impairment Scale (ODSIS)

The ODSIS (Osma et al., 2019) measures the frequency, intensity, and interference of depressive symptoms over the previous week through 5 items rated from 0 (never) to 4 (always), with total scores ranging from 0 to 20. The validated Spanish version, reviewed by Colombian perinatal experts, required no linguistic modifications. Internal consistency in the current study was excellent (α = 0.92).

2.2.3 Overall Anxiety Severity and Impairment Scale (OASIS)

The OASIS (Osma et al., 2019) assesses anxiety symptom severity and functional impairment using 5 items rated from 0 to 4, with higher scores indicating greater symptom interference. The validated Spanish version was confirmed as appropriate for Colombian participants without modification. Internal consistency in this study was α = 0.93.

2.2.4 Satisfaction With Life Scale (SWLS)

The SWLS (Vázquez et al., 2013) measures global life satisfaction using 5 items rated on a 7-point scale (1 = strongly disagree to 7 = strongly agree), with total scores ranging from 5 to 35. The validated Spanish version was reviewed and deemed linguistically and conceptually appropriate for this population. Internal consistency in this study was α = 0.87.

2.3 Data Analysis

Data analyses followed established guidelines for psychometric evaluation (Appelbaum et al., 2018). All analyses were conducted using IBM SPSS Statistics v27.0 (IBM Corp., Armonk, NY, USA) and R version 4.5.1 for Windows (Version 4.5.1; R Foundation for Statistical Computing, Vienna, Austria), employing the lavaan (Rosseel et al., 2012) and semTools (Jorgensen et al., 2025) packages for CFA and measurement invariance testing.

- Descriptive Statistics: Means (M), standard deviations (SDs), skewness, and kurtosis were calculated for each MAS item to assess distributional properties and univariate normality.
- Structural Validity: CFA was performed to test the hypothesized three-factor structure of the MAS (Doubts, Rejection, and Suppression). Models were estimated using maximum likelihood with robust standard errors (MLR) to account for non-normality. Model fit was evaluated using χ^2, χ^2/df, Comparative fit index (CFI), Tucker-Lewis index (TLI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA) with 90% confidence intervals (CIs).
- Internal Consistency: Cronbach's α, corrected item–total correlations ($r_{(jx)}$), and α if item deleted were computed for each MAS subscale to assess reliability.
- Construct Validity: As the Kolmogorov*Smirnov test indicated significant deviations from normality across all scales ($p < 0.05$), Spearman's rho (ρ) correlations were used to examine associations between MAS dimensions (Doubts, Rejection, and Suppression) and psychological adjustment indicators (ODSIS, OASIS, and SWLS). All tests were two-tailed, with $p < 0.001$ considered statistically significant.
- Cross-Cultural Comparisons: Cross-country differences (Colombia vs. Spain) were analyzed using Mann–Whitney U tests due to non-normal distributions and ordinal data. Effect sizes were calculated as $r = |Z| / \sqrt{N}$. Comparisons were conducted separately for pregnant and postpartum participants.
- Measurement Invariance: Multi-group CFA was conducted to test configural, metric, and scalar invariance of the *MAS* across (a) countries (Colombia vs. Spain) and (b) perinatal stages (pregnant vs. postpartum). Invariance was evaluated using $\Delta CFI \leq 0.010$ and $\Delta RMSEA \leq 0.015$, following recommended criteria (Cheung and Rensvold, 2002).
- Assumption Checks and Robust Estimation: Given the ordinal nature of items and observed non-normality, robust MLR estimators were used for CFA, while nonparametric tests (Spearman correlations and Mann-Whitney U tests) were applied for bivariate and group-level analyses. Although the MAS uses a 4-point Likert scale, items were treated as continuous in CFA, because scales with four or more response categories yield comparable estimates under robust maximum likelihood (Park, 2023; Rhemtulla et al., 2012).
- Sensitivity Analyses: Partial correlations controlling for age were conducted to examine potential confounding effects. Adjusting for this covariate did not meaningfully alter the strength or significance of associations between maternal ambivalence, mental health, and life satisfaction.

3. Results

3.1 Socio-Demographic Characteristics

A total of 456 Colombian women participated in the study (M = 27.5 years, SD = 6.1; range = 18–48 years). Of these, 296 were pregnant (M = 26.2, SD = 5.4; range = 18–42) and 160 were postpartum (M = 29.8, SD = 6.8; range = 18–48). Most participants were in a relationship (87.2%), and nearly half held a university degree or higher (48.9%). Employment status varied: 38.5% employed, 32.9% unemployed, 12.4% homemakers, 5.8% students, and 10.4% on medical leave. 68 participants (16.5%) reported receiving ongoing mental health treatment.

3.2 Item-Level Psychometric Properties of the MAS

Table 1 displays the descriptive and reliability statistics for the 14 MAS items. All items demonstrated adequate variability and acceptable distributional properties. Item means ranged from M = 1.91 to M = 3.26, reflecting moderate variability in endorsement across items. Skewness values ranged from S = –0.91 to S = 0.60, and kurtosis (K) values ranged from –0.93 to 0.87, which fall within the recommended limits for Likert-type data. Item–total correlations ($r_{(jx)}$) ranged from 0.42 to 0.74, and "Cronbach's alpha if item deleted" (α_{-x}) values indicated that removing any item would not meaningfully improve internal consistency. Standardized factor loadings (λ) ranged from 0.46 to 0.93, and item-level explained variance (R^2) ranged from 0.21 to 0.86, confirming that all items contributed substantially to the underlying latent construct.

3.3 Confirmatory Factor Analysis (CFA; n = 456)

CFA results supported the three-factor structure of the MAS (Doubts, *Insecurity*, and Suppression) in the Colombian sample. The model demonstrated good fit: $\chi^2(74) = 143.71$, $p < 0.001$; robust $\chi^2 = 143.71$; CFI = 0.968; TLI = 0.960; robust RMSEA = 0.050, 90% CI [0.037, 0.062]; SRMR = 0.042. All standardized factor loadings (λ) exceeded the recommended threshold of 0.32, ranging from 0.418 to 0.829, confirming that each item contributed meaningfully to its latent factor. Item-level explained variance (R^2) ranged from 0.175 to 0.687. Covariances between latent factors were positive and significant (Doubts–Rejection = 0.790, Doubts–Suppression = 0.495, Rejection–Suppression = 0.458). These findings replicate the original Spanish validation (Martín-Sánchez et al., 2022) and provide strong evidence for the structural validity of the Colombian version of the MAS.

3.4 Measurement Invariance of the MAS Across Perinatal Stage in the Colombian Sample (Pregnant, n = 296; Postpartum, n = 160)

A series of multi-group confirmatory factor analyses were conducted to examine measurement invariance of the MAS across pregnancy status (pregnant vs. mother; Table 2). The configural model, which allowed factor load-

ings and intercepts to vary across groups, demonstrated adequate fit: $\chi^2(148) = 284.74$, $p < 0.001$, CFI = 0.948, TLI = 0.936, RMSEA = 0.064 (90% CI [0.052, 0.075]), SRMR = 0.055. This indicates that the three-factor structure is comparable across pregnant women and postpartum mothers.

Constraining factor loadings across groups (metric invariance) resulted in minimal changes in fit indices (ΔCFI = –0.002, ΔRMSEA = –0.001) and the χ^2 difference test suggested no significant degradation of model fit, supporting metric invariance. Further constraining item intercepts across groups (scalar invariance) produced minimal changes in fit indices (ΔCFI = –0.003, ΔRMSEA = –0.0002) and did not meaningfully worsen model fit, indicating scalar invariance. These results suggest that the MAS measures maternal ambivalence equivalently in pregnant women and postpartum mothers, allowing for meaningful comparisons of latent factor means between groups.

3.5 Internal Consistency

Internal consistency was high across the three subscales: $\alpha_{(\text{Doubts})} = 0.84$, $\alpha_{(\text{Rejection})} = 0.80$, $\alpha_{(\text{Suppression})} = 0.80$.

3.6 Construct Validity

Bivariate Spearman correlations (Table 3) supported the expected associations between maternal ambivalence dimensions and indicators of psychological adjustment in Colombian perinatal women:

- Doubts were positively associated with depressive symptoms (ODSIS: $\rho = 0.50$, $n = 372$, $p < 0.001$) and anxiety (OASIS: $\rho = 0.42$, $n = 358$, $p < 0.001$), and negatively associated with life satisfaction (SWLS: $\rho = –0.48$, $n = 416$, $p < 0.001$).
- Rejection was positively associated with depression (ODSIS: $\rho = 0.40$, $n = 372$, $p < 0.001$) and anxiety (OASIS: $\rho = 0.28$, $n = 358$, $p < 0.001$), and negatively associated with life satisfaction (SWLS: $\rho = –0.56$, $n = 416$, $p < 0.001$).
- Suppression showed weaker but significant positive correlations with depression (ODSIS: $\rho = 0.33$, $n = 372$, $p < 0.001$) and anxiety (OASIS: $\rho = 0.25$, $n = 358$, $p < 0.001$), and a moderate negative correlation with life satisfaction (SWLS: $\rho = –0.43$, $n = 416$, $p < 0.001$).

These results provide evidence of construct validity, demonstrating that higher maternal ambivalence, particularly in Doubts and Rejection, is associated with greater emotional distress and lower life satisfaction during the perinatal period.

Partial correlations controlling for participants' age revealed a similar pattern, with only minimal attenuation of effect sizes. For example, Doubts remained strongly associated with Insecurity ($r = 0.603$) and moderately with Suppression ($r = 0.378$), and its associations with depressive ($r = 0.491$) and anxiety ($r = 0.448$) symptoms remained substantial. Life satisfaction also remained negatively associated with ambivalence and symptoms when controlling for age (e.g., Doubts: $r = –0.477$; Insecurity: $r = –0.556$; ODSIS: $r = –0.508$).

Overall, these results indicate that maternal ambivalence is strongly associated with higher psychological symptoms and lower life satisfaction, and that these associations are largely independent of age.

3.7 Differences Between Pregnant and Postpartum Colombian Women

Group comparisons (Table 4) using Mann-Whitney U tests indicated that pregnant women reported significantly higher Rejection scores ($M = 8.19$, $SD = 2.59$; Median [Mdn] = 8) than postpartum mothers ($M = 7.27$, $SD = 2.67$; $Mdn = 7$), $U = 18{,}628.00$, $Z = –3.792$, $p < 0.001$, $r = 0.18$. Pregnant women also reported significantly lower life satisfaction (SWLS: $M = 22.12$, $SD = 7.18$; $Mdn = 23$) compared with postpartum mothers ($M = 23.64$, $SD = 7.47$; $Mdn = 25$), $U = 17{,}245.00$, $Z = –2.345$, $p = 0.019$, $r = 0.11$.

No significant differences were observed between groups for Doubts scores ($M = 13.41$, $SD = 3.66$; $Mdn = 13$ vs. $M = 12.79$, $SD = 4.07$; $Mdn = 13$), $U = 21{,}519.50$, $Z = –1.614$, $p = 0.107$, $r = 0.08$; Suppression ($M = 9.03$, $SD = 2.53$; $Mdn = 9$ vs. $M = 8.91$, $SD = 2.90$; $Mdn = 9$), $U = 22{,}867.00$, $Z = –0.610$, $p = 0.542$, $r = 0.03$; Depression (ODSIS: $M = 10.79$, $SD = 4.85$; $Mdn = 10$ vs. $M = 10.12$, $SD = 4.84$; $Mdn = 10$), $U = 14{,}548.50$, $Z = –1.415$, $p = 0.157$, $r = 0.07$; or Anxiety (OASIS: $M = 10.07$, $SD = 4.54$; $Mdn = 9$ vs. $M = 10.01$, $SD = 4.81$; $Mdn = 9$), $U = 14{,}498.00$, $Z = –0.344$, $p = 0.731$, $r = 0.02$.

3.8 Cross-Cultural Differences Between Colombia and Spain

Significant cross-cultural differences emerged across several MAS subscales (Tables 5,6).

Among pregnant women, Colombian participants (n = 296) reported higher scores than Spanish participants (n = 407) on Doubts ($M = 12.56$, $SD = 3.66$; $Mdn = 13$ vs. $M = 11.76$, $SD = 3.66$; $Mdn = 12$), $U = 46{,}306.50$, $Z = –5.260$, $p < 0.001$, $r = 0.20$; Rejection ($M = 7.59$, $SD = 2.50$; $Mdn = 8$ vs. $M = 6.92$, $SD = 2.42$; $Mdn = 7$), $U = 46{,}744.00$, $Z = –5.160$, $p < 0.001$, $r = 0.20$; and Suppression ($M = 8.18$, $SD = 2.60$; $Mdn = 9$ vs. $M = 8.17$, $SD = 2.64$; $Mdn = 8$), $U = 39{,}120.00$, $Z = –8.020$, $p < 0.001$, $r = 0.30$.

Colombian pregnant women also reported higher depressive symptoms (*ODSIS*: $M = 9.40$, $SD = 4.63$; $Mdn = 10$ vs. $M = 8.70$, $SD = 4.29$; $Mdn = 7$), $U = 30{,}109.50$, $Z = –6.320$, $p < 0.001$, $r = 0.26$; and anxiety symptoms (*OASIS*: $M = 9.32$, $SD = 4.23$; $Mdn = 9$ vs. $M = 9.27$, $SD = 4.18$; $Mdn = 9$), $U = 33{,}659.50$, $Z = –3.210$, $p = 0.001$, $r = 0.13$, as well as lower life satisfaction (*SWLS*: $M = 23.44$, $SD = 6.69$; $Mdn = 23$ vs. $M = 23.60$, $SD = 6.60$; $Mdn = 25$), $U = 41{,}278.00$, $Z = –3.998$, $p < 0.001$, $r = 0.17$.

Among postpartum women (0–2 years), Colombian participants (n = 160) continued to report higher maternal

Table 1. Item-level analysis (n = 456).

	M	*SD*	*S*	*K*	$r_{(jx)}$	α_{-x}	λ	R^2
1. Being a mother is something that thrills me	3.26	0.74	–0.91	0.87	0.62	0.76	0.74	0.55
2. I often doubt whether I really want to be a mother	2.05	0.91	0.36	–0.85	0.67	0.80	0.60	0.36
3. When I imagine or see myself interacting with my baby, I feel overwhelmed and insecure	1.92	0.86	0.58	–0.45	0.54	0.83	0.83	0.69
4. Being a mother right now means moving forward and evolving in my life	2.96	0.86	–0.55	–0.30	0.61	0.76	0.70	0.49
5. I often find myself regretting being a mother	1.91	0.85	0.60	–0.42	0.73	0.79	0.76	0.58
6. Being a mother is something I want without a doubt	3.11	0.81	–0.59	–0.27	0.74	0.69	0.42	0.18
7. I sometimes feel strong rejection or fear about motherhood	2.39	0.92	–0.15	–0.93	0.66	0.80	0.71	0.50
8. It has always been clear to me that I want to be a mother	2.80	0.92	–0.34	–0.73	0.53	0.80	0.71	0.51
9. I often want, or have wanted, to change my mind about the decision to become a mother	1.98	0.85	0.49	–0.47	0.66	0.80	0.87	0.75
10. When I think about motherhood, I have mixed positive and negative feelings	2.94	0.74	–0.71	0.76	0.42	0.85	0.60	0.35
11. If I had doubts about motherhood, I would share them openly with my family	2.60	0.87	–0.14	–0.65	0.66	0.73	0.76	0.58
12. If I had doubts about motherhood, I would share them openly with a friend	2.68	0.79	–0.29	–0.28	0.57	0.78	0.63	0.40
13. If I had doubts about motherhood, I would share them openly with my partner (if you don't have a partner, think about what you would do if you had a partner)	2.99	0.82	–0.60	–0.04	0.60	0.76	0.70	0.49
14. If I had any doubts about motherhood, I would probably keep them to myself	2.26	0.87	0.21	–0.63	0.64	0.74	0.75	0.56

Note. *M*, mean; *SD*, standard deviation; *S*, Skewness; *K*, Kurtosis; $r_{(jx)}$= Item–total correlations; α_{-x} = Cronbach's α if item deleted; λ = Factor loadings; R^2 = Explained variance. All factor loadings were significant at $p < 0.001$.

Table 2. Measurement invariance of the MAS across pregnancy status (Pregnant n = 296; vs. Mothers n = 190).

Model	χ^2	*df*	*p*	CFI	TLI	RMSEA	RMSEA 90% CI	SRMR	AIC	BIC	ΔCFI	ΔRMSEA
Configural	284.735	148	<0.001	0.948	0.936	0.064	0.052–0.075	0.055	13,490.67	13,861.70	–	–
Metric	301.218	159	<0.001	0.946	0.938	0.063	0.052–0.073	0.064	13,485.16	13,810.83	–0.002	–0.001
Scalar	320.939	170	<0.001	0.942	0.938	0.062	0.052–0.073	0.066	13,482.88	13,763.21	–0.003	–0.0002

Note. ΔCFI and ΔRMSEA represent changes in CFI and RMSEA relative to the less constrained model. Differences less than |0.010| for CFI and |0.015| for RMSEA are generally considered evidence for invariance (Cheung and Rensvold, 2002). Fit indices are based on Satorra-Bentler scaled statistics (Satorra and Bentler, 2001). χ^2, chi-square statistic; df, degrees of freedom; *p*, *p* value; CFI, comparative fit index; TLI, Tucker–Lewis index; RMSEA, root mean square error of approximation; RMSEA 90% CI, 90% confidence interval for RMSEA; SRMR, standardized root mean square residual; AIC, Akaike information criterion; BIC, Bayesian information criterion; ΔCFI = change in CFI; ΔRMSEA = change in RMSEA.

Table 3. Spearman bivariate correlations between the three dimensions of maternal ambivalence (Doubts, Rejection, and Suppression) and anxiety, depression, and satisfaction with life in Colombian perinatal women.

	1	2	3	4	5	6
1. Doubts	-	0.63 (n = 456)	0.39 (n = 456)	0.50 (n = 372)	0.42 (n = 358)	–0.48 (n = 416)
2. Rejection		-	0.38 (n = 456)	0.40 (n = 372)	0.28 (n = 358)	–0.56 (n = 416)
3. Suppression			-	0.33 (n = 372)	0.25 (n = 358)	–0.43 (n = 416)
4. Depression (ODSIS)				-	0.67 (n = 358)	–0.53 (n = 370)
5. Anxiety (OASIS)					-	–0.37 (n = 356)
6. Life satisfaction (SWLS)						-

Note. ODSIS, Overall Depression Severity and Impairment Scale; OASIS, Overall Anxiety Severity and Impairment Scale; SWLS, Satisfaction with Life Scale. All correlations are significant at $p < 0.001$.

Table 4. Mann-Whitney U tests comparing Colombian pregnant women and mothers of children aged 0–2 years on study variables.

Perinatal status	Pregnant		Postpartum		*U*	*Z*	*p*	*r*
Variable	*M* (*SD*)	*Mdn*	*M* (*SD*)	*Mdn*				
Doubts	13.41 (3.66)	13	12.79 (4.07)	13	21,519.50	–1.614	0.107	0.08
Rejection	8.19 (2.59)	8	7.27 (2.67)	7	18,628.00	–3.792	<0.001	0.18
Suppression	9.03 (2.53)	9	8.91 (2.90)	9	22,867.00	–0.610	0.542	0.03
Depression (ODSIS)	10.79 (4.85)	10	10.12 (4.84)	10	14,548.50	–1.415	0.157	0.07
Anxiety (OASIS)	10.07 (4.54)	9	10.01 (4.81)	9	14,498.00	–0.344	0.731	0.02
Life satisfaction (SWLS)	22.12 (7.18)	23	23.64 (7.47)	25	17,245.00	–2.345	0.019	0.11

Note. *Mdn*, median; *M*, mean; *SD*, standard deviation; *r* = Effect size.

ambivalence than Spanish participants (n = 834) on Doubts scores ($M = 12.79$, $SD = 4.07$; $Mdn = 13$ vs. $M = 11.56$, $SD = 3.55$; $Mdn = 12$), $U = 55{,}285.00$, $Z = –3.45$, $p = 0.001$, $r = 0.11$; Suppression scores ($M = 8.91$, $SD = 2.90$; $Mdn = 9$ vs. $M = 8.03$, $SD = 2.57$; $Mdn = 8$), $U = 54{,}572.50$, $Z = –3.64$, $p < 0.001$, $r = 0.13$; and Rejection scores ($M = 7.27$, $SD = 2.67$; $Mdn = 7$ vs. $M = 6.85$, $SD = 2.36$; $Mdn = 7$), $U = 61{,}527.00$, $Z = –1.58$, $p = 0.115$, $r = 0.05$, although the effect was not statistically significant for Rejection.

Colombian postpartum women also reported higher depressive symptoms (*ODSIS*: $M = 10.12$, $SD = 4.84$; $Mdn = 10$ vs. $M = 8.44$, $SD = 4.14$; $Mdn = 8$), $U = 40{,}131.00$, $Z = –3.82$, $p < 0.001$, $r = 0.13$. No significant differences were observed in anxiety (*OASIS*: $M = 10.02$, $SD = 4.81$; $Mdn = 10$ vs. $M = 9.14$, $SD = 4.05$; $Mdn = 9$), $U = 43{,}498.00$, $Z = –1.60$, $p = 0.110$, $r = 0.05$, or life satisfaction (*SWLS*: $M = 23.64$, $SD = 7.47$; $Mdn = 23$ vs. $M = 23.59$, $SD = 6.42$; $Mdn = 25$), $U = 58{,}636.00$, $Z = –0.64$, $p = 0.521$, $r = 0.02$.

These findings indicate consistent cross-cultural differences in maternal ambivalence, with Colombian women generally reporting higher Doubts, Suppression, and Rejection than Spanish women, both during pregnancy and the postpartum period, along with higher depressive symptoms and lower life satisfaction in the pregnant sample.

3.9 Measurement Invariance of the MAS Between Participants from Colombia (n = 456) and Spain (n = 1241)

To evaluate whether the MAS subscales were interpreted equivalently across Colombian and Spanish participants, a sequence of measurement invariance models was tested using CFA (Table 7).

Configural invariance was first established, indicating that the overall factor structure of the MAS was similar across groups. Metric invariance was then tested by constraining factor loadings to be equal across groups. Fit indices showed minimal changes (ΔCFI = 0.003, ΔRMSEA = –0.003), and the Satorra-Bentler scaled chi-square difference test was non-significant, supporting metric invariance. These results indicate that the latent constructs were interpreted similarly in both cultural groups, allowing meaningful comparisons of relationships between constructs (e.g., correlations with anxiety or depression).

Scalar invariance, tested by constraining both factor loadings and item intercepts, was not fully supported. Changes in fit indices (ΔCFI = –0.015, ΔRMSEA = 0.002) and the chi-square difference test ($\Delta\chi^2(11) = 130$, $p < 0.001$) indicated that item intercepts differed between groups. This finding implies that differences in raw scores may reflect both true latent differences and systematic variations in item responses, making direct comparisons of observed tentative means. Partial scalar invariance could be achieved by freeing non-invariant intercepts, allowing for more accurate comparisons of latent means.

4. Discussion

The present study examined the psychometric properties and cross-cultural validity of the MAS in a Colombian perinatal sample and compared patterns of maternal

Table 5. Mann-Whitney U tests comparing maternal ambivalence and psychological adjustment among pregnant women from Colombia and Spain.

Variable	Colombia		Spain		*U*	*Z*	*p*	*r*
	M (SD)	*Mdn*	*M (SD)*	*Mdn*				
Doubts	12.56 (3.66)	13	11.76 (3.66)	12	46,306.50	–5.260	<0.001	0.20
Rejection	7.59 (2.50)	8	6.92 (2.42)	7	46,744.00	–5.160	<0.001	0.20
Suppression	8.18 (2.60)	9	8.17 (2.64)	8	39,120.00	–8.020	<0.001	0.30
Depression (ODSIS)	9.40 (4.63)	10	8.70 (4.29)	7	30,109.50	–6.320	<0.001	0.26
Anxiety (OASIS)	9.32 (4.23)	9	9.27 (4.18)	9	33,659.50	–3.210	0.001	0.13
Life satisfaction (SWLS)	23.44 (6.69)	23	23.60 (6.60)	25	41,278.00	–3.998	<0.001	0.17

Table 6. Mann-Whitney U tests comparing maternal ambivalence and psychological adjustment among postpartum women (0–2 years) from Colombia and Spain.

Variable	Colombia		Spain		*U*	*Z*	*p*	*r*
	M (SD)	*Mdn*	*M (SD)*	*Mdn*				
Doubts	12.79 (4.07)	13	11.56 (3.55)	12	55,285.00	–3.45	0.001	0.11
Rejection	7.27 (2.67)	7	6.85 (2.36)	7	61,527.00	–1.58	0.115	0.05
Suppression	8.91 (2.90)	9	8.03 (2.57)	8	54,572.50	–3.64	<0.001	0.13
Depression (ODSIS)	10.12 (4.84)	10	8.44 (4.14)	8	40,131.00	–3.82	<0.001	0.13
Anxiety (OASIS)	10.02 (4.81)	10	9.14 (4.05)	9	43,498.00	–1.60	0.110	0.05
Life satisfaction (SWLS)	23.64 (7.47)	23	23.59 (6.42)	25	58,636.00	–0.64	0.521	0.02

ambivalence with those reported in Spanish women. The findings provide strong evidence for the reliability, construct validity, and factorial stability of the MAS in a Latin American context. Replication of the original three-factor structure—Doubts, Rejection, and Suppression (Martín-Sánchez et al., 2022)—supports the cross-cultural applicability of the scale and highlights the influence of sociocultural norms on maternal emotional experiences.

4.1 Factor Structure and Psychometric Robustness

Item-level analyses confirmed that all MAS items demonstrated adequate variability, acceptable distributional properties, and strong item–total correlations, indicating that each item contributed meaningfully to its respective latent construct. The three-factor model demonstrated good fit indices (CFI = 0.97, TLI = 0.96, RMSEA = 0.05), with standardized loadings ranging from 0.42 to 0.83 and explained variances (R^2) between 0.18 and 0.69. Internal consistency was high across subscales (α = 0.80–0.84), consistent with prior Spanish validations (Martín-Sánchez et al., 2022). These results confirm the structural validity of the MAS in Colombian perinatal women and support its applicability across culturally diverse Spanish-speaking populations.

4.2 Measurement Invariance Across Perinatal Stage

Multi-group CFA supported full metric and scalar invariance between pregnant and postpartum women, indicating that the MAS measures ambivalence equivalently across perinatal stages. Consequently, pregnant and postpartum women interpret the Doubts, Rejection, and Suppression factors similarly, allowing meaningful comparisons of latent factor means. This invariance underscores the temporal stability of maternal ambivalence, suggesting that ambivalent emotions toward motherhood persist from pregnancy to early motherhood. However, subtle mean-level differences, specifically higher Rejection and lower life satisfaction among pregnant women. suggest that emotional ambivalence may be particularly pronounced during pregnancy, possibly reflecting heightened uncertainty and role adjustment during this stage (Cutler et al., 2018).

4.3 Construct Validity

Spearman correlations supported the expected associations between maternal ambivalence and psychological adjustment. Doubts and Rejection were moderately to strongly associated with depressive and anxiety symptoms and inversely related to life satisfaction, whereas Suppression showed weaker yet significant correlations with these outcomes. These findings validate the MAS as a multidimensional construct associated with emotional vulnerability during the perinatal period (Pollack, 2024). The persistence of these associations after controlling for age suggests that ambivalence exerts a robust effect on well-being, independent of demographic factors. Importantly, Rejection showed weaker correlation with emotional symptoms than Doubts, suggesting that rejection-related feelings may not necessarily indicate psychopathology but rather reflect the tension between idealized maternal expectations and lived experiences (Newell, 2010). This finding aligns with prior research emphasizing the importance of interpreting ambivalence contextually rather than pathologizing it (Raphael-Leff, 2010; Takševa, 2017).

Table 7. Measurement Invariance of the MAS between participants from Colombia (n = 456) and Spain (n = 1241).

Model	χ^2	df	CFI	RMSEA	ΔCFI	ΔRMSEA	$\Delta\chi^2$ (df)	p
Configural	1310.4	154	—	—	—	—	—	—
Metric	1265.6	165	0.903	0.045	0.003	–0.003	–40.41 (11)	1.000
Scalar	1401.3	176	0.888	0.047	–0.015	0.002	130.0 (11)	<0.001

Note. ΔCFI and ΔRMSEA represent changes in CFI and RMSEA relative to the less constrained model. Differences less than |0.010| for CFI and |0.015| for RMSEA are generally considered evidence for invariance (Cheung and Rensvold, 2002). Fit indices are based on Satorra-Bentler scaled statistics (Satorra and Bentler, 2001).

4.4 Cross-Cultural Differences in Maternal Ambivalence

Consistent and significant differences emerged between Colombian and Spanish women across several dimensions of ambivalence. Colombian participants—both pregnant and postpartum—reported higher levels of Doubts and Suppression, and, to a lesser extent, Rejection. These results suggest that sociocultural factors, including traditional gender norms, ambivalent sexism, and collectivist expectations surrounding motherhood, influence the emotional expression of maternal ambivalence (Alzate et al., 2024; Rodríguez-Burbano et al., 2021).

In Spain, where motherhood is increasingly framed through individualized and egalitarian perspectives (Moreno-Mínguez et al., 2018), ambivalence may be more openly acknowledged and normalized. In contrast, in Colombia, cultural ideals emphasizing self-sacrifice and devotion may discourage emotional disclosure (Urbina-Garcia, 2025), fostering suppression as a culturally sanctioned coping mechanism. Although adaptive for maintaining social harmony, sustained suppression may hinder emotional processing and increase vulnerability to depressive symptoms (Chen, 2025; Tsai et al., 2017)

The persistence of Suppression across both perinatal stages in Colombian women, unlike its decline in Spanish samples, further illustrates the role of cultural values in emotional regulation. Cross-cultural psychology frameworks (Badaan and Choucair, 2023) suggest that maternal ambivalence is not a universal emotional conflict but a culturally mediated experience shaped by gender ideologies, social expectations, and access to emotional validation.

4.5 Measurement Invariance Between Participants from Colombia and Spain

Measurement invariance analyses confirmed configural and metric invariance across the Colombian and Spanish samples, indicating that participants in both countries conceptualize the MAS constructs similarly. However, full scalar invariance was not achieved, as several item intercepts differed between groups. This finding implies that, although relationships among latent constructs (e.g., correlations with depression or anxiety) can be meaningfully compared across countries, comparisons of raw scores should be interpreted with caution. Observed cross-cultural differences in Rejection and Suppression likely reflect both true variations in maternal ambivalence and systematic cultural response patterns.

4.6 Clinical Implications

The significant associations between maternal ambivalence and perinatal distress underscore the need for culturally sensitive prevention and intervention strategies. In Colombia, where expressing doubt or dissatisfaction with motherhood may be stigmatized, psychoeducational programs should normalize ambivalence as a common and valid emotional experience rather than pathologize it. The Suppression dimension suggests that many women inhibit negative maternal feelings, underscoring the importance of therapeutic approaches that promote emotional integration rather than avoidance.

Integrative treatments combining cognitive-behavioral therapy (CBT) techniques (Li et al., 2022) with brief psychodynamic (Thoma and Abbass, 2022) or emotion-focused approaches (Kramer et al., 2026) may be particularly effective. These interventions facilitate the acknowledgment and processing of repressed or conflicting emotions, fostering greater authenticity and self-compassion in the development of maternal identity. Early screening for ambivalence during pregnancy, along with preventive group interventions as recommended in guidelines (Rodríguez-Muñoz et al., 2023), could further help mitigate postpartum distress and enhance well-being.

4.7 Limitations and Future Directions

Despite its contributions, this study has several limitations. Its cross-sectional design precludes causal inferences and limits understanding of how ambivalence evolves and changes across the perinatal timeline. Convenience sampling and reliance on self-report measures may introduce bias and restrict the representativeness of the sample, particularly among women from lower socioeconomic backgrounds. Future research should employ longitudinal and mixed-method approaches to capture the dynamic nature of ambivalence and its interaction with sociocultural and psychological variables. Moreover, examining moderators such as family support, religious beliefs, and gender ideology could clarify how structural factors shape maternal emotional expression across Latin American contexts.

4.8 Novel Contributions

This study constitutes the first validation of the MAS in a Latin American population and demonstrates its psychometric robustness in Colombian perinatal women. It provides empirical evidence of cross-cultural variability in maternal ambivalence and emphasizes that emotional experiences of motherhood are culturally constructed and influenced by social norms and gender expectations. Clinically, these findings highlight the significance of emotional suppression as a culturally mediated coping mechanism and advocate for interventions that facilitate the authentic expression of ambivalence. By integrating brief psychodynamic and emotion-focused components with established CBT frameworks, practitioners may more effectively address the deeper affective dimensions of maternal distress. Overall, the present findings advance cross-cultural psychometric research and contribute to a more nuanced understanding of maternal ambivalence as both a universal and culturally embedded aspect of the perinatal experience.

5. Conclusions

In summary, this study provides robust evidence that the MAS is reliable and valid in a Colombian perinatal sample, replicating its stable three-factor structure (Doubts, Rejection, and Suppression). The factor structure is confirmed, making it valuable to record doubts, low self-confidence, conviction about motherhood, and the most frequently used coping mechanisms associated with this maternal ambivalence.

In cross-cultural comparisons, Colombian participants reported higher levels of Doubts and Suppression than Spanish women; although configural and metric invariance were supported across countries, the lack of full scalar invariance warrants caution when interpreting observed score differences.

It is a brief scale that offers a powerful ability to identify potential predisposing factors for psychological distress and is an important area to explore in the initial psychological interviews.

Availability of Data and Materials

Anonymized data will be shared upon request to the corresponding author.

Author Contributions

MBM-S: conceptualization, methodology, formal analysis, writing — original draft. AMC-R: data curation, investigation, writing — review & editing. AG-E: methodology, visualization, writing — review & editing. JMB-L: supervision, project administration, writing — review & editing. CS-R: conceptualization, funding acquisition, supervision, writing — original draft, writing — review & editing. 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

The study and its procedures were approved by the Ethics Committee of the Jaume I University (approval number CD/22/2021, on April 15th, 2021), and were performed in accordance with good clinical practice and relevant guidelines and regulations, including the Declaration of Helsinki. Informed consent was obtained from all participants. No parental consent was required, as all participants were adults.

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Conflict of Interest

The authors declare no conflict of interest.

Declaration of AI and AI-Assisted Technologies in the Writing Process

During the preparation of the current work, the authors used ChatGPT-5 to assist in the language editing of this manuscript. The authors reviewed and approved all content generated or revised with AI assistance and take full responsibility for the integrity and accuracy of the final text.

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