RESEARCH ARTICLE

Validation and reliability process of the preliminary form of the Maternal Burnout Scale in Turkish Mothers (T-MBS)

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ABSTRACT

Objective: Maternal burnout is a state of physical and emotional exhaustion that arises when the stress associated with motherhood surpasses coping resources. This novel and distinct clinical phenomenon differs from anxiety and depression. The present study aimed to adapt the Maternal Burnout Scale (MBS) for Turkish mothers and examine its validity and reliability.

Method: This methodological study involved 350 mothers. The World Health Organization (WHO) back translation method, also known as reverse translation, was employed for the translation process. Confirmatory factor analysis and parallel scale validity were used to assess the scale's validity. Reliability was examined using Cronbach's alpha coefficient and the test-retest method. Correlation tests were employed for comparisons.

Results: Confirmatory factor analysis validated the original scale's three-factor structure, consisting of 15 items (χ^2/SD: 3,180). The prevalence of maternal burnout in this study was 39.4%. Working mothers exhibited significantly higher maternal burnout levels compared to non-working mothers, while a strong positive correlation was observed between parental stress levels and maternal burnout levels.

Conclusion: The Turkish version of the Maternal Burnout Scale (T-MBS) was determined to be a valid and reliable instrument for assessing maternal burnout. The prevalence of maternal burnout in the Turkish population exceeded that of previous studies. For the prevention and management of maternal burnout, improving the knowledge and support of health professionals will be an important step to protect women's and family health. It is expected that future studies with this scale will carry the concept of "mother burnout" into legal processes and regulations.

Keywords: Maternal burnout, Mother Burnout Scale, preliminary form, reliability, translation, validity

INTRODUCTION

Burnout is an emotional breakdown characterized by prolonged physical exhaustion and a low psychological state of mind, ranging from moderate to severe. It occurs when appropriate coping strategies are not developed against accumulated and repetitive stressors (1). The concept of burnout was first introduced by

Freudenberger in his 1974 article "Personnel Burnout" to describe emotional exhaustion experienced by employees due to excessive workload, which was manifested by fatigue, exhaustion, loss of energy, and strength (2). In recent years, there has been increased attention given to examining and evaluating burnout in the context of parenting (3). Parental burnout is defined as an intense state of exhaustion related to one's parenting role, resulting in emotional disconnection from their children and self-doubt about their parenting abilities (4). Symptoms of parental burnout include feeling tired of being a parent, experiencing emotional distance from their children, reduced interaction, feelings of inadequacy, loss of pleasure in parenting, and unhappiness around their children (5,6).

Maternal burnout is a significant issue in today's societies, impacting the well-being of mothers and their families. Studies conducted across different cultures indicate that, compared to fathers, mothers often experience higher levels of fatigue and burnout. This can be attributed to their roles as primary caretakers, in addition to managing household tasks, maintaining work-life balance, and taking responsibility for their children (6–11). Therefore, it is crucial to develop and validate tools that accurately measure maternal burnout in various cultural contexts. This will enable researchers and practitioners to identify at-risk populations and implement appropriate interventions.

Maternal fatigue is characterized by persistent and overwhelming lack of energy, resulting in physical weakness and difficulties with concentration and attention (12). When combined with one or more of the aforementioned factors, this fatigue can lead to extreme tension in mothers, potentially affecting their mental health and/or relationships with their children (1,13–15). Maternal burnout is characterized by its moderate, chronic, and repetitive nature. Previous studies have indicated that approximately 5.5-7% of mothers may experience maternal burnout (4,15), and around 18% of mothers may be at risk of maternal burnout (16). Although limited research has been conducted on this phenomenon, these percentages align with the findings of Lindström et al. (2010) (17), who reported that 20% of mothers with healthy children experienced maternal burnout.

Recent research has demonstrated that maternal burnout is a unique clinical phenomenon that develops differently from anxiety and depression (4,17,18). Lebert-Charron et al. (2021) (19) conducted a study to determine burnout profiles of at-risk

mothers based on four factors that define parental burnout: emotional exhaustion, emotional distancing, feeling fed-up, and contrast in parental self. The study highlighted the "emotional distancing dimension" as a specific dimension that could be used in diagnosing "maternal burnout". Although burnout is not yet defined and classified as a mental disorder in fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), it is considered in the International Classification of Diseases Tenth Revision (ICD-10), where it is defined as a "state of vital exhaustion" with significant health repercussions (20).

The Maternal Burnout Scale was developed to assess parental burnout and emphasize the unique nature of women (21). Despite a lack of consensus on gender differences in parental burnout, some studies have shown that burnout experiences (5) and outcomes vary between mothers and fathers (21). Maternal burnout has been linked to symptoms such as fatigue, shame, guilt, anger, and frustration (21). The frequency of maternal burnout varies across different studies (21% in Japan, 2018; 6.6% in France, 2019; 20% in France, 2018) (3,16,18). Investigating maternal burnout is crucial for accurately understanding the phenomenon and determining protective measures and intervention plans. The existence of a practical scale will provide convenience for researchers in the field, facilitating the study of maternal burnout. The Maternal Burnout Scale is a short and comprehensible scale consisting of 15 questions.

Currently, there is no scale in Turkiye that specifically examines maternal burnout. Additionally, there are a limited number of studies focusing on parenting burnout in Turkiye, resulting in a lack of empirical data (16,22) on general maternal burnout. Parenting burnout has been studied in Turkiye using scales such as the Parent Burnout Scale (23), Maslach Burnout Inventory (24), Parenting Stress Index (PSI) (25), and Quality of Life Scale (the World Health Organization Quality of Life-BREF Turkish version WHOQOL-BREF TR) (26), which do not fully capture maternal burnout. Furthermore, maternal burnout has not been investigated unless mothers exhibit some extent of sensitivity or fragility. Consequently, many mothers who may appear to be "managing," but are under the threat of implicit burnout, go unnoticed.

The Turkish health system does not implement a "mandatory referral chain"; however, individuals are recommended to consult family physicians as their first point of contact. One study revealed that the preference for primary healthcare institutions, even

for antenatal care services, is only 10.5% (27). Mothers may not seek medical attention for issues that are not yet understood, such as "burnout," as individuals can directly seek care at all healthcare levels, leading to congestion in polyclinics (28). The decision to exclude fathers from this study is due to the unique nature of maternal burnout. Although burnout is a phenomenon that applies to all parents, burnout in mothers and fathers can manifest differently. Feelings of shame, guilt, and loneliness are among the symptoms associated with burnout in mothers (5). Considering the unique nature and psychological structure of women and the difference between motherhood and fatherhood as parenting models, a scale specifically designed for mothers was developed and accepted for its accuracy (21).

Therefore, there is a need for a tool to measure and evaluate maternal burnout in the general population of Turkiye. The scale is expected to be practical and valuable in future studies on the incidence of maternal burnout, region-specific risk factors, and prevention strategies. The aim of this study is to investigate the validity and reliability of The Maternal Burnout Scale Preliminary Form (T-MBS) in Turkish mothers.

METHODS

Participants

A methodological study was conducted involving 350 mothers who had at least one child aged between 0-25 years and were currently residing at home. The inclusion criteria for the study were as follows: being between 18-50 years old, being literate, living in the same household as their child/children, having at least one child aged between 0-25 years, not having any known psychiatric disease or using psychiatric medication, not having neurodevelopmental or neurocognitive disorders, speaking Turkish, and residing in Istanbul. Participants who did not meet these criteria were excluded from the study. Informed consent was obtained from all participants voluntarily. Due to the pandemic conditions, data collection tools were administered to voluntary participants through an online questionnaire. Participants were recruited through social networks, including mother groups.

Ethical Approval

Research ethics approval was obtained from the Istanbul Erenkoy Mental and Neurological Diseases Training and Research Hospital Clinical Research Ethics Committee [IRB: 30.12.2020-46]. The study adhered to the principles of the Declaration of Helsinki. The World Health Organization (WHO) back translation method (29) was employed during the translation process.

Data Collection

An online survey, created by the researchers using Google Docs (Google, Mountain View, CA, United States), was distributed to participants through their social media accounts or email addresses. This study aimed to measure maternal burnout and contribute to a better understanding of the factors influencing mothers' mental health, as well as provide insights for developing targeted interventions and support measures. Data collection took place between December 2020 and March 2021.

In this study, the Demographic Information Form, Maternal Burnout Preliminary Form Turkish Version, Burnout Scale Short Version (30), Perceived Stress Scale (31), and the Parenting Stress Index-Short Form (PSI/SF) (32) were utilized to evaluate the validity of similar scales.

Measurements

Maternal Burnout Scale (MBS)

The original version of the scale, developed by Raquel Sánchez Rodríguez et al. (21) in 2020, was designed to measure maternal burnout. The scale consists of 15 questions and three factors: negative emotional-behavioral symptoms towards the child, physical and emotional exhaustion, and denial of success or decreased productivity (21). In adapting the scale to Turkish, the items were initially translated by two philology specialists and subsequently discussed by eight psychiatrists. After reaching a consensus on the suitability of the scale items, the forms were completed by 20 mothers to ensure the comprehensibility of the questions. The items were then translated back into English and sent to the expert who developed the form for review. Upon receiving the developer's approval, the form was administered to the volunteer participants. The cut-off points for the scale are as follows: 15-25 (absence of burnout), 26-38 (low burnout), 39-48 (suspicion of burnout), and 49-60 (burnout).

The Burnout Measure Short Version (BMS)

The BMS is a 10-item scale prepared by Pines (2005) (33). Tumkaya, Cam, and Cavusoglu (2009) conducted the Turkish adaptation of the scale (30). The internal consistency reliability coefficient of the scale items is 0.91, and the test-retest reliability is 0.70. This questionnaire was adapted to assess burnout in general.

The Perceived Stress Scale (PSS)

The scale was developed by Cohen, Kamarck, and Mermelstein (1983) (34) and adapted into Turkish by Eskin et al. (2013) (31). The Perceived Stress Scale consists of 14 items and two dimensions: Perception of Inadequate Self-Efficacy and Perception of Stress/Discomfort. The reliability coefficient of the perceived stress questions in the scale was calculated as Cronbach's Alpha 0.84, which is considered statistically reliable.

The Parenting Stress Index-Short Form (PSI/SF)

The PSI/SF was developed and validated by Abidin (1990), while Mert et al. conducted the Turkish adaptation of the Parental Stress Index-Short Form-PSI/SF (25,32). The Cronbach's Alpha value is 0.71, and test-retest correlations are r=0.88. The primary aim of the PSI/SF is to measure stress within the parent-child system. The index was developed based on the results obtained from Abidin's clinical studies (25).

Analysis of Data

Construct validity (confirmatory factor analysis) and convergent validity were employed to assess the validity of the scale. The reliability study was examined using the Cronbach's alpha coefficient and test-retest method. Additionally, differences between the average scores of the scale items in subgroups formed according to the total scores of the test were evaluated using independent t-tests. The collected data were analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 23 and IBM SPSS AMOS version 21 (IBM Corp., Armonk, NY, USA).

RESULTS

The characteristics of the 350 participating mothers are presented in Table 1. The mean age of the participants was 36.51±6.526 years, with the majority of survey respondents being parents living together.

The results of the Confirmatory Factor Analysis (CFA) for the T-MBS, including the mean scores and standard deviations, are presented in Table 2. The average score for the Maternal Burnout Scale was 44.78±8.146. The mean scores for factors 1, 2, and 3 were 19.90±3.908, 9.40±2.145, and 15.49±2.945, respectively. The measurement model with 15 items and three factors was established to validate the structure analyzed in this study.

Before modification, the model fit indices did not fall within acceptable limits. Therefore, suggested and statistically viable changes were made using the SPSS Statistics AMOS package, and the model was

Table 1: Demographic characteristics of the Maternal Burnout Scale (T-MBS)

	n	%
Age (Mean=36.51±6.526)		
Ages 21-30	70	20.0
Ages 31-40	184	52.6
Ages 41-50	86	24.6
Age 50 and above	10	2.9
Parentage status		
Parents live together	324	92.6
Mother lives alone with her child or children	26	7.4
Number of children		
1 child	87	24.9
2 children	154	44.0
3 children	79	22.6
4 and more children	30	8.6
Educational background		
Primary school graduate	54	15.4
High school graduate	73	20.9
Secondary school graduate	28	8.0
College graduate	1	0.3
College and above	194	55.4
Working status		
Working	169	48.3
Not working	171	51.8

Table 2: Descriptive statistics of the Maternal Burnout Scale (T-MBS)

	Mean	SD	Minimum	Maximum
T-MBS	44.78	8.146	19.00	60.00
Factor_1	19.90	3.908	9.00	28.00
Factor_2	9.40	2.145	3.00	12.00
Factor_3	15.49	2.945	6.00	20.00

SD: Standard deviation.

adapted after these modifications. By examining the modification indices table, the highest "Modification Index (M.I.)" value was identified, and appropriate modifications were made. The model was validated with three modifications, combining the errors of item 1 and item 4, item 2 and item 3, and item 11 and item 13. The validated measurement model is presented below.

Figure 1 of the measurement model displays the items and confirms the 15 items and three sub-dimensions. The standardized regression coefficients of the paths or factor loads on the one-way arrows were also examined. Item 10 had the highest factor

Table 3: Factor load values of the Maternal Burnout Scale (T-MBS)

Items	Expressions	Factor load
Factor 1		
Item 1	My motherhood makes me feel valued	-0.394
Item 2	I feel tired even before I start the day	0.463
Item 3	I don't know how long I can stand this tiredness	0.599
Item 4	I can easily create an environment of trust and cooperation with my child(ren)	-0.544
Item 5	I feel really bad for not having time to myself	0.544
Item 6	I'm yelling at my child(ren)	0.714
Item 7	I have trouble listening to my child(ren)	0.690
Factor 2		
Item 8	I feel that I am worse than other mothers at dealing with my children	0.811
Item 9	My child(ren) is/are difficult	0.575
Item 10	I have no more patience with my child(ren)	0.821
Factor 3		
Item 11	My child(ren) can easily annoy me	0.724
Item 12	When I'm angry, my words exceed my thoughts	0.704
Item 13	I feel competent as a mother	-0.529
Item 14	I punish my child(ren) too much when I'm angry	0.644
Item 15	I feel like a bad mother	0.805

load value of 0.821, indicating that it is the strongest predictor of the Maternal Burnout Scale. Table 3 provides a detailed examination of the factor load for each item. As a result of the Confirmatory Factor Analysis (CFA), factor loading values for each item are presented in Table 3. No value was found to be below 0.400. However, items 1, 4, and 13 had negative factor loads, suggesting that these items should be reverse-coded.

Next, the goodness-of-fit values obtained from the CFA results are discussed. Table 4 displays the fit index values for the 15-item, 3-dimension measurement model. The widely used chi-square (χ^2) goodness-of-fit test and p-value demonstrated that the model was significant. However, since the chi-square value is highly sensitive to sample size, it alone is insufficient for evaluating the fit of the model to the data (35). Therefore, other fit values, including Goodness of Fit Index (GFI), Chi-Square divided by degrees of freedom (χ^2/SD), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Adjusted Goodness of Fit Index (AGFI), and Standardized Root Mean Square Residual (SRMR), were examined. The Goodness of Fit Index (GFI) value indicated a good fit for the model, while other fit indices, such as χ^2/SD, Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), Comparative Fit Index
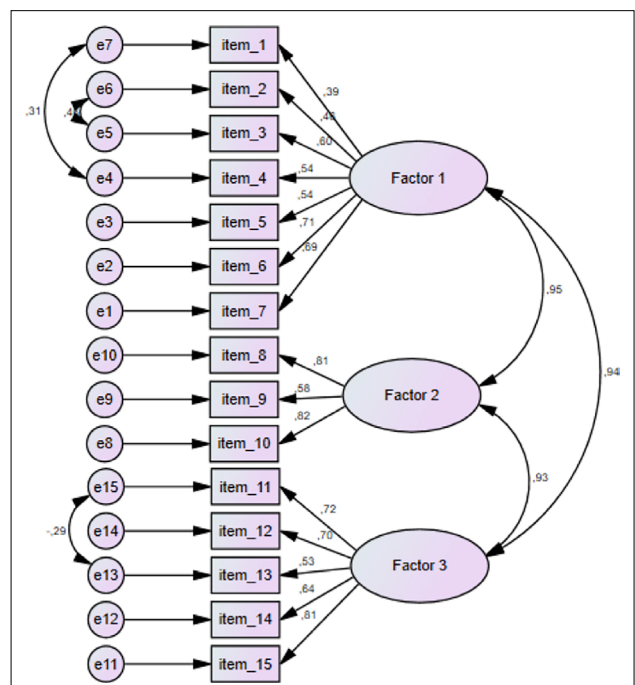
Figure 1. Measurement Model of the Maternal Burnout Scale (T-MBS) (confirmatory factor analysis).

(CFI), Root Mean Square Error of Approximation (RMSEA), Adjusted Goodness of Fit Index (AGFI), and Standardized Root Mean Square Residual (SRMR), indicated an acceptable fit for the model.

Table 4: Fit index values and good fit values of the measurement model

	Model Fit Index Values (before modification)	Model Fit Index Values (after modification)	Good Fit Values (acceptable fit)
χ^2/SD	4.612	3.180	≤3 (4-5)
GFI	0.858	0.907	≥0.90 (0.89-0.85)
AGFI	0.804	0.868	≥0.90 (0.89-0.85)
IFI	0.866	0.922	≥0.95 (0.94-0.90)
TLI (NNFI)	0.837	0.901	≥0.95 (0.94-0.90)
CFI	0.865	0.951	≥0.97 (0.95)
RMSEA	0.102	0.079	≤0.05 (0.06-0.08)
SRMR	0.063	0.051	≤0.05 (0.06-0.08)

SD: Standard deviation; GFI: Goodness of Fit Index; AGFI: Adjusted Goodness of Fit Index; IFI: Incremental Fit Index; TLI: Tucker-Lewis Index; NNFI: Non-Normed Fit Index; CFI: Comparative Fit Index; RMSEA: Root Mean Square Error of Approximation; SRMR: Standardized Root Mean Square Residual.

Findings Regarding Reliability of the Scale

The analysis of item-total correlations revealed that items with negative factor loadings in the construct validity (confirmatory factor analysis) also exhibited negative item-total correlations. Consequently, items 1, 4, and 13 were reverse-coded, and the reliability analyses were recalculated, with the results presented in Table 5. Following the reverse coding of the items, the item-total correlations were observed to be greater than 0.3. As shown in Table 5, after reversing the items with negative factor loadings in the construct validity (confirmatory factor analysis), the item-total correlations were found to be greater than 0.3. This indicates an improvement in the reliability of the scale.

Table 6 demonstrates that the Cronbach's Alpha reliability coefficient for the 15-item Maternal Burnout Scale is 0.905, which is considered relatively high. The reliability coefficients for the sub-dimensions of the Maternal Burnout Scale range between 0.777 and 0.796, which are deemed sufficient.

Upon examining Table 7, it becomes apparent that there is no statistically significant relationship between the scores on the Perceived Stress Scale (PSS) and the Maternal Burnout Scale (T-MBS) or its sub-dimensions. However, a statistically significant positive high-level correlation exists between the scores on the Parenting Stress Index Short Form (PSI/SF) and the Maternal Burnout Scale (T-MBS) scores. A statistically significant positive moderate correlation is also observed between the scores on the Parenting Stress Index Short Form (PSI/SF) and the sub-dimension scores of the Maternal Burnout Scale (T-MBS). Furthermore, a statistically significant positive high-level correlation exists between the scores on the Burnout Measure Short Version (BMS) and the Maternal Burnout Scale (T-MBS) scores. Lastly,

Table 5: Maternal Burnout Scale (T-MBS) item analysis (after inverting items)

	Item total correlations	Cronbach Alpha when item is deleted
T-MBS_1	0.397	0.906
T-MBS _2	0.484	0.903
T-MBS _3	0.609	0.898
T-MBS _4	0.548	0.900
T-MBS _5	0.538	0.901
T-MBS _6	0.649	0.897
T-MBS _7	0.625	0.898
T-MBS _8	0.736	0.893
T-MBS _9	0.518	0.902
T-MBS _10	0.750	0.893
T-MBS _11	0.642	0.897
T-MBS _12	0.640	0.897
T-MBS _13	0.496	0.902
T-MBS _14	0.550	0.900
T-MBS _15	0.747	0.894

Table 6: Reliability analysis of Maternal Burnout Scale (T-MBS)

	Number of Items	Cronbach Alpha
Maternal Burnout Scale (T-MBS)	15	0.905
Factor 1	7	0.789
Factor 2	3	0.777
Factor 3	5	0.796

Table 7: Correlation of relationships between T-MBS and PSS, PSI/SF, BMS (parallel form)

	T-MBS	Factor_1	Factor_2	Factor_3
PSS				
r	0.087	0.079	0.082	0.077
p	0.104	0.142	0.129	0.151
PSI/SF				
r	0.741*	0.699*	0.634*	0.657*
p	0.000	0.000	0.000	0.000
BMS				
r	0.717*	0.673*	0.614*	0.643*
p	0.000	0.000	0.000	0.000

*: $p<0.01$; r: Pearson correlation coefficient; PSS: Perceived Stress Scale; PSI/SF: Parenting Stress Index-Short Form; BMS: Burnout Measure Short Version; T-MBS: Turkish version of the Maternal Burnout Scale.

a statistically significant positive moderate correlation between the scores on the Burnout Measure Short Version (BMS) and the sub-dimension scores of the Maternal Burnout Scale (T-MBS) can be seen.

DISCUSSION

This study demonstrated that the T-MBS is a reliable and valid instrument for measuring and assessing burnout among Turkish mothers. The prevalence of maternal burnout in this study was found to be 39.4%. Working mothers exhibited significantly higher levels of maternal burnout compared to non-working mothers. While a strong positive correlation was observed between parental stress levels and maternal burnout levels, no significant relationship was found between perceived stress levels and maternal burnout levels.

The scale comprises three sub-dimensions: negative emotional-behavioral symptoms towards the child, physical and emotional exhaustion, and parental success. A high internal consistency coefficient is essential for ensuring a homogeneous structure.

The Cronbach's alpha coefficient for the scale's internal consistency was found to be high (0.90) (35). Furthermore, the three subscales of the original MBS displayed high internal consistency, with composite reliability values of 0.95. Comparable studies reported the following Cronbach's alpha values: Parental Burnout at 0.98 (19), Burnout Measure Short Version at 0.84 (33), Brief Parental Stress Inventory (ISP/f) at 0.94 (25), Perceived Stress Scale (PSS) at 0.81 (34), and Parents Burnout Scale Turkish Version at 0.96 (9). In this study, it was observed that no item negatively affected the Cronbach's alpha value in general item correlations, and the item-total correlation value was <0.30, supporting the reliability of the scale (35).

During the preparation of the Turkish version of the Parent Burnout Scale, Arıkan removed seven questions from the scale. After this adjustment, the factor loadings of each item in this scale were found to be >40. These results are similar to the item correlation values obtained in our study and support our findings (9).

The study's Cronbach's alpha values for the 1st, 2nd, and 3rd factors were T-MBS 1=0.789, T-MBS 2=0.777, and T-MBS 3=0.796, respectively. According to Cevahir (2020), this value is considered "quite reliable" (35) when $0.60 \leq \alpha < 0.8050$. The original MBS scale by Sánchez-Rodríguez et al. (21) displayed Cronbach's alpha values for the 1st, 2nd, and 3rd factors as MBS 1=0.92, MBS 2=0.82, and MBS 3=0.79. Consequently, the differences between the Cronbach's alpha values of the three factors and the total scale in the current study compared to the original scale values are believed to be related to cultural and religious beliefs (22). In Turkish society, the child is considered the primary factor that sustains the family. As a social entity, the family ensures its existence and continuity through childbirth, thus linking the future existence of the nation and state to the presence of children (36). Moreover, motherhood holds a sacred position in Turkish society, with the traditional expectation that mothers care for their children and manage the household. A proverb encapsulates this sentiment: "the female bird makes the nest," highlighting the weight of societal expectations on women (37).

Certain cultural and religious beliefs discourage abortion and the use of certain pregnancy prevention methods in the country. These factors may contribute to larger family sizes, an emphasis on motherhood as a responsibility, and a reluctance to discuss the challenges associated with managing children and household tasks (27). In the study conducted by Sánchez-Rodríguez, the majority of mothers had one to two children and were employed, but it is important to note that this research primarily focused on working women with two or more children (21). It has been observed that a higher number of children can lead to increased levels of maternal burnout (18). On the other hand, another study reported that 6.6% of French mothers experienced clinical burnout (21).

In this study, the total burnout scale score for mothers in Turkiye was measured as 44.8. Considering that the highest possible burnout score on the scale is 60, the burnout rate among Turkish women can be described as high. This high result may be attributed to the study coinciding with the COVID-19 pandemic period. Another factor could be that Turkish mothers may have a more self-sacrificing perception of their role, which can lead to faster burnout. Consequently, this scale may reveal the relationship between factors such as economic status, education, culture, and burnout outside of crisis periods, offering a different perspective on Turkish women's burnout. Additionally, in this present study, a very high and statistically significant agreement between the total scale and sub-dimension scores from the test and retest was found. Furthermore, Ardic and Olcay (2019) (23) discovered a very high retest correlation coefficient for the parental burnout scale. These test results from the two burnout scales suggest that the scale is reliable in terms of stability.

No assessment tool had previously been developed or adapted to measure maternal burnout in Turkiye. As the original maternal burnout scale (MBS) (21) has not yet been adapted to other languages, it was not possible to directly compare it with the adapted version of this scale in this article. Therefore, examples were provided on scales or sub-scales that are most

closely related to the topic, such as the Parents Burnout Scale (9), Parental Burnout Inventory (25), Psychological Well-being, and Parental Satisfaction.

When evaluating the parallel form, statistically significant high positive linear relationships between the T-MBS scale scores and the Parental Stress Scale indicated that the scale was a robust instrument. As parental stress increases, maternal burnout also escalates, demonstrating a direct relationship between high stress and maternal burnout (4). Similarly, Sánchez-Rodríguez's study (21) found a strong correlation between the Maternal Burnout Scale and the Brief Parental Stress Inventory (ISP/f) (25). In studies by Roskam et al. (6) evaluating parenting burnout, a high correlation was observed between the Parental Burnout Assessment and Parental Burnout Inventory, r=0.86.

A statistically significant positive and moderate correlation was also observed between Parental Stress Scale scores and Maternal Burnout Scale sub-dimension scores. In similar studies by Mikolajczak and Roskam (4), the parental burnout was moderately and positively correlated with factors such as neuroticism, co-parenting disagreement, family disorganization, and job burnout.

Psychological well-being and parental satisfaction are closely related to burnout. This study demonstrates a statistically significant positive and high-level correlation between Burnout Measure Short Version (BMS) (33) scores and T-MBS scores. In an Iranian study, a strong negative correlation was found between parental burnout assessment points, parental satisfaction, and psychological well-being (38). This result indicates that as parental satisfaction and psychological well-being decrease, parental burnout increases. The study's results support the data obtained in this study (39). This study aimed to understand the lack of a relationship between the Perceived Stress Scale and burnout. While some studies (39,40) have shown that perceived stress in specific life areas can impact personal and family spheres, the findings revealed only a weak positive correlation between perceived stress levels and parental stress. Moreover, no connection was identified between perceived stress levels and maternal burnout. This suggests that the Perceived Stress Scale measures a broader scope of stressors, capturing how individuals perceive stress in various life situations rather than focusing solely on parenting stress.

The present study identified maternal burnout in 39.4% of the 138 mothers out of 350. Two factors were considered particularly significant, contributing to this higher rate compared to previous studies. Firstly, socio-cultural changes influence parental burnout, making parenting increasingly challenging and demanding for parents (41). In Turkish society, mothers often do not share parenting responsibilities equally with their spouses/partners. Domestic duties, childcare, and, if applicable, work-life consume a substantial portion of mothers' time.

Consequently, they frequently sacrifice their personal needs and desires. In Turkish society, women are raised with the erroneous perception that a mother should be self-sacrificing and accomplish everything. Subsequently, a mother finds herself torn between raising well-adjusted children, pleasing a spouse, maintaining an orderly home, and excelling at work. These factors may contribute to increased burnout in this population. It was posited that conducting the study during the COVID-19 pandemic—a period marked by a heightened concern for personal and familial health, strict restrictions, and widespread uncertainty in various life domains—may have exacerbated stress in mothers and resulted in higher burnout levels. Moreover, burnout has gained greater significance amidst the COVID-19 pandemic, which threatens global health, safety, and economic well-being, while also exerting negative effects on children and families (40,42).

This study's sample size and characteristics may not accurately represent the country's entire population. This limitation is common in much research and is particularly evident in Turkiye due to its rich and unique cultural diversity. Cultural differences, stemming from religious beliefs, thinking styles, political views, and overall lifestyles, can shape maternal perception and consequently influence the likelihood of maternal burnout. Turkiye is a country with a substantial immigrant population (primarily from Syria), with nearly 6% of its inhabitants being immigrants (43,44). However, this population was not included in the study due to potential language barriers. In addition to Turks, significant proportions of other ethnic groups (such as Kurds, Georgians, Laz, Pomaks, Albanians, Afghans, and Arabs) reside in the country (44). The cultural structure can impact children's perceptions, the number of children, views on marriage, and life perspectives, which may either lessen or exacerbate burnout. Consequently, this creates culturally diverse experiences of burnout among individuals from different socio-cultural backgrounds.

For this reason, it is recommended that future studies better represent the country's profile by taking into account the diverse populations and

characteristics of various ethnic groups. In countries with significant or unique cultural diversity, cross-cultural studies may be employed to explore the effects of cultural differences on maternal burnout. Ultimately, this approach could open new avenues for understanding the concept of burnout in mothers across diverse cultural contexts.

The sample in this study was not adequately representative of young mothers and mothers with lower education levels. While participants from all educational levels were included among the mothers, the higher education group was overrepresented, which may have influenced the results. In the study, although various sociodemographic characteristics of the mothers were assessed, factors such as their involvement in the home, work, childcare, access to social support, and socioeconomic status were not examined. Considering these aspects in future research on this topic would be beneficial. Due to the study being conducted during the COVID-19 pandemic, the level and prevalence of burnout in mothers may have differed from that during a typical period. Other limitations of the study are that it is a survey study, the questionnaires are filled out online, the participants only have access to the internet connection due to the widespread and unequal distribution of the internet connection among the general public, and the results cannot be sufficiently generalized.

CONCLUSION

Maternal burnout is a significant global health concern that can have detrimental effects on the well-being of mothers, children, families, and societies as a whole. This study has successfully demonstrated the satisfactory psychometric properties of the T-MBS as a reliable and valid tool for assessing and measuring maternal burnout among Turkish mothers. The prevalence of maternal burnout in the Turkish population, as found in this study, stands at 39.4%, with working mothers experiencing significantly higher levels of burnout compared to their non-working counterparts. Our sociocultural structure, which poses additional challenges to mothers, calls for a better understanding and increased awareness of maternal burnout. It is believed that future studies utilizing this scale, now added to the Turkish literature, will contribute to addressing maternal burnout at a legislative level and help develop legislation that provides enhanced health and social support services for mothers.

Contribution Categories		Author Initials
Category 1	Concept/Design	H.T., N.G.B.
	Literature review	H.T., N.G.B.
	Data analysis/Interpretation	H.T., N.G.B.
Category 2	Drafting manuscript	H.T.
	Critical revision of manuscript	H.T., N.G.B., R.S.R.
Category 3	Final approval and accountability	H.T.
Other	Supervision	R.S.R.

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