

ORIGINAL ARTICLE

Burnout among parents of children with attention deficit hyperactivity disorder in the Qassim region

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ABSTRACT

Objective: This study aimed to measure burnout among parents of children with attention deficit hyperactivity disorder (ADHD) and to assess their associated factors.

Methods: A cross-sectional study at Maternity and Children Hospital (MCH) in Buraydah, Saudi Arabia, measuring burnout among parents of children diagnosed with ADHD using a questionnaire that included sociodemographic variables and the Maslach Burnout Inventory (MBI).

Results: A total of 200 participants were included. The assessment method used in the study showed strong validity and reliability, with Cronbach's alpha >0.7. The Chi-square test also revealed that the model was significantly fitted with $p < 0.000$, Comparative Fit Index = 0.924, Tucker-Lewis Index = 0.914, Root Mean Square Error of Approximation = 0.091. Key findings included high weights for items such as exhaustion in parental role 2, contrast in parental self-2 (CO2), CO5, feelings of being fed up 2 (FU2), and FU3, indicating high values for tiredness, cynicism, ineffectiveness, and emotional distance. This indicated that the items used to assess each component were reliable.

Conclusion: Socioeconomic characteristics significantly affect exhaustion, cynicism, and emotional distance. Mothers experience higher burnout than fathers, highlighting the need for support and resources. The employment status of the parents also influences burnout levels due to caregiving demands.

Keywords: ADHD, parents, mental health, burnout, Saudi Arabia

Introduction

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder of childhood [1]. In Saudi Arabia, the prevalence of ADHD is 8%, while globally it is 5.29% [2,3]. ADHD-diagnosed children display impulsiveness, hyperactivity, or inattention that is out of step with their developmental stage [2].

Parents who have children diagnosed with ADHD frequently encounter heightened levels of stress that arise from conflicts that arise between them and their children due to their children's behaviors [1,3]. ADHD children's behaviors include an increase in hyperactivity, an increased need for attention, and a greater reliance on support and assistance in comparison to other children [1,3,4].

Additionally, studies showed that parents with ADHD children tend to have different degrees of marital and parental dysfunction, lower parental self-esteem, and disturbed parent-child relationships, all of which are connected to the parents' burnout [1,5,6].

Burnout is defined by the International Classification of Diseases (ICD-11) as a condition that arises from

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ongoing unmanaged stress. Burnout is characterized by three aspects including feelings of exhaustion and energy depletion, a sense of mental distance, and decreased professional efficacy [7]. Parental burnout symptoms include emotional detachment, feeling of inadequacy, and the overwhelming burden of caring for a child with a neurodevelopmental disorder, so the parents often require extra time and effort beyond typical parenting obligations [8]. Management of children with ADHD plays a significant role in decreasing negative parental behavior and improving parents' general coping abilities [1,9].

Many studies have been conducted to examine burnout levels among parents of children. A descriptive study was conducted in Turkey (2014-2015) of 159 mothers of children with ADHD showed that the negative behavior by mothers increases aggressiveness and destructive behavior in children, which can increase the burnout level of the mothers [10]. A cross-sectional study comparing burnout among 50 caregivers of children with ADHD to 50 caregivers of children without ADHD showed that caregivers of children with ADHD have more burnout than others, particularly mothers [2].

This study aimed to measure burnout among parents of children with ADHD and to assess their associated factors.

Subjects and Methods

A descriptive cross-sectional study was carried out from June to December 2023 at the Maternity and Children Hospital (MCH) in Buraydah, Qassim region, Saudi Arabia. The study included all parents who have children diagnosed with ADHD and live in the Qassim region, while the exclusion criteria were caregivers who were not the parents of the children or who did not reside in the Qassim region. A total of 200 participants who met the study's inclusion and exclusion criteria consented to participate in this study.

Initially, the researchers identified the medical records of patients, extracting their phone numbers from the records and encoding them in the electronic database. An electronic self-administered questionnaire included sociodemographic variables, consisting of parents' information such as education level and occupational status, as well as their child such as age and child's birth order, and a validated Arabic version of MBI was used [11].

The MBI consisted of 23 items divided into four subscales: nine items on the emotional exhaustion subscale, six items on the contrast, five items on the feelings of being fed up, and three items on the emotional distancing. A seven-point Likert scale was used to rate the items with never (0), a few times a year or less (1), once a month or less (2), a few times a month (3), once a week (4), a few times a week (5), and every day (6).

Cronbach's alphas, where the emotional exhaustion subscale was 0.93, the contrast was 0.93, the feelings of

Table 1. The validity of both the first and second-order factor internal structure of the Saudis.

Model Information: first-order factor	Model Information of both the first and second-order factors
Estimator ML	Estimator ML
Optimization method NLMINB	Optimization method NLMINB
Number of model parameters 52	Number of model parameters: 50
Number of observations 200	Number of observations: 200
User model test	Model Test User Model:
Test statistic 597.669	Test statistic 598.891
Degrees of freedom 224	Degrees of freedom 226
p-value (Chi-square) 0.000	P-value (Chi-square) 0.000
Baseline model test	Model Test Baseline Model:
Test statistic 5156.337	Test statistic 5,156.337
Degrees of freedom 253	Degrees of freedom 253
p-value 0.000	p-value 0.000
User model vs. baseline model	User Model vs Baseline Model:
CFI 0.924	CFI 0.924
Tucker-Lewis Index (TLI) 0.914	Tucker-Lewis Index (TLI) 0.915
Loglikelihood and information criteria	Loglikelihood and Information Criteria:
Loglikelihood user model (H0) -7830.546	Loglikelihood user model (H0) -7,831.158
Loglikelihood Unrestricted Model (H1) -7531.712	Loglikelihood unrestricted model (H1) -7,531.712
Akaike Information Criterion (AIC) 15765.092	Akaike (AIC) 15,762.315
Bayesian Information Criterion (BIC) 15936.605	Bayesian (BIC) 15,927.231
Sample-size Adjusted Bayesian (SABIC) 15771.864	Sample-size adjusted Bayesian (SABIC) 15,768.826
RMSEA	Root Mean Square Error of Approximation:
RMSEA 0.091	RMSEA 0.091
90% Confidence Interval - Lower 0.083	90 Percent confidence interval - lower 0.082
90% Confidence Interval - Upper 0.100	90 Percent confidence interval - upper 0.100
p-value H0: RMSEA ≤ 0.050 0.000	p-value H_0: RMSEA <= 0.050 0.000
p-value H0: RMSEA ≥ 0.080 0.982	p-value H_0: RMSEA >= 0.080 0.978
Standardized Root Mean Square Residual (SRMR)	Standardized Root Mean Square Residual:
SRMR 0.037	SRMR 0.037

AIC, Akaike Information Criterion; BIC, Bayesian Information Criterion; CFI, Comparative Fit Index (CFI); ML, maximum likelihood; NLMINB, nonlinear minimization with box constraints; TLI, Tucker-Lewis Index; H0, null hypothesis; H1Alternative hypothesis; SABIC, Sample-size Adjusted Bayesian; SRMR, Standardized Root Mean Square Residual; RMSEA, Root Mean Square Error of Approximation.

being fed up (FU) was 0.90, and the emotional distancing was 0.81 for the four sub-scales and 0.96 for the global score.

For statistical analysis, confirmatory factor analysis (CFA) results confirm both first- and second-order models using comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). In addition, model fit tests were assessed with Chi-square, Akaike information criterion (AIC), and Bayesian information criterion (BIC). Standardized regression weights were used to evaluate relationships between observed items and latent factors. Reliability was measured using Cronbach's Alpha. Demographic factors were examined to determine the relationship between parental burnout and factors such as income, education, and employment status using means and standard deviations for different groups. *P*-values were used to determine statistical significance via *t*-tests (for two groups) and ANOVA (for multiple groups).

Results

The *p* values in the Chi-square test for both models were 0.000, indicating a significant fit of the model to the data. The (CFI) was 0.924, and the (TLI) values were 0.914 and 0.915, suggesting a good model fit. Values of RMSEA around 0.091 indicated a reasonable fit, but values above 0.08 suggested room for improvement, and the value of SRMR of 0.037 indicated a good fit (Table 1).

The standardized regression weights indicated the strength and direction of the relationships between the observed items and the underlying latent constructs (factors). Each item's weight reflected its contribution to the corresponding factor. Items like EX2 ("I have the sense that I'm worn out as a parent") and EX5 ("I find it exhausting just thinking of everything I have to do for my child(ren)") showed high weights (0.862 and 0.876, respectively). This suggested that these items were strong indicators of the exhaustion factor. Exhaustion ($\alpha = 0.93$) indicated excellent reliability, suggesting that the exhaustion-related items consistently measure the same

Table 2. Standardized regression weights from CFA and reliability estimates for the final 23-item scale in the Saudi sample.

		EX	CO	FU	ED
EX1	I feel completely run down by my role as a parent	0.723			
EX2	I have the sense that I'm worn out as a parent	0.862			
EX3	I'm so tired of my role as a parent that sleeping doesn't seem like enough	0.550			
EX4	When I get up in the morning and have to face another day with my child(ren), I feel exhausted before I've even started	0.857			
EX5	I find it exhausting just thinking of everything I have to do for my child(ren)	0.876			
EX6	I have zero energy for looking after my child(ren)	0.819			
EX7	My role as a parent uses up all my resources	0.892			
EX8	I sometimes have the impression that I am looking after child(ren) on autopilot	0.690			
EX9	I'm in survival mode in my role as a parent	0.743			
CO1	I don't think I'm the good father/mother that I used to be to my child (ren)		0.821		
CO2	I tell myself that I'm no longer the parent I used to be.		0.881		
CO3	I'm ashamed of the parent that I've become.		0.873		
CO4	I'm no longer proud of myself as a parent.		0.829		
CO5	I have the impression that I am not myself anymore when I'm interacting with my child(ren)		0.856		
CO6	I feel as though I've lost my direction as a dad/mum.		0.804		
FU1	I can't stand my role as father/mother anymore.			0.657	
FU2	I can't take being a parent anymore.			0.898	
FU3	I feel like I can't take any more as a parent.			0.895	
FU4	I feel like I can't cope as a parent.			0.880	
FU5	I don't enjoy being with my child(ren)			0.786	
ED1	I do what I'm supposed to do for my child(ren), but nothing more.				0.846
ED2	Outside the usual routines (lifts in the car, bedtime, meals), I'm no longer able to make an effort for my child(ren)				0.902
ED3	I'm no longer able to show my child(ren) how much I love them				0.833
α		0.93	0.94	0.91	0.89

CO, contrast in parental self; EX, exhaustion in parental role; ED, Emotional distance; FU, feelings of being fed up;

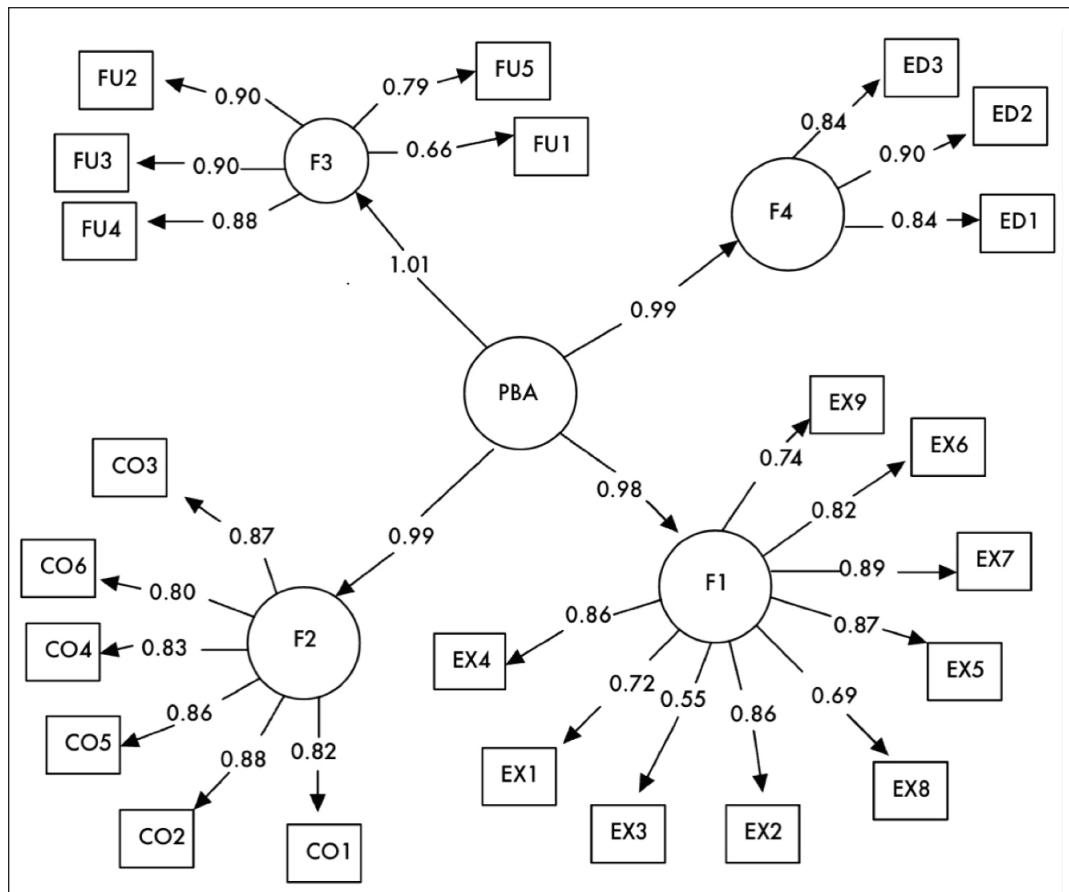


Figure 1. Results of the (CFA) for the second-order factor model of the PBA. CO, contrast in parental self; EX, exhaustion in parental role; FU, feelings of being fed up; PBA, parental burnout assembly.

underlying construct. Items such as CO2 ("I tell myself that I'm no longer the parent I used to be") and CO5 ("I have the impression that I'm not myself anymore when I'm interacting with my child(ren)") showed very high weights (0.881 and 0.856, respectively), indicating they were strong indicators of cynicism in parenting. Similarly, this value ($\alpha = 0.94$) indicated a very high level of internal consistency among the cynicism items. Items like FU2 ("I can't take being a parent anymore") and FU3 ("I feel like I can't take any more as a parent") had weights of 0.898 and 0.895, respectively. These high values indicated strong feelings of ineffectiveness in parenting. All items in this category also exhibited high weights, reinforcing the relevance of this construction. The feeling of inefficacy ($\alpha = 0.91$) suggested that the items measuring feelings of ineffectiveness in parenting were also reliable. Items such as ED2 ("Outside the usual routines, I'm no longer able to make an effort for my child(ren)") and ED1 ("I do what I'm supposed to do for my child(ren), but nothing more") had weights of 0.902 and 0.846, respectively. These items suggested a significant degree of emotional detachment from parenting responsibilities. While slightly lower than the other factors, this alpha ($\alpha = 0.89$) still indicated

good reliability, suggesting consistent measurement of emotional distance (Table 2).

It also demonstrated how primary factors (such as exhaustion, cynicism, feelings of ineffectiveness, and emotional distance) were influenced by underlying constructs, providing a comprehensive view of the burnout experience (Figure 1).

It was also shown how individual items in the questionnaire related directly to specific dimensions of parental burnout. It highlighted the strengths of these relationships, indicating which items were most representative of each factor (Figure 2).

The data suggested that male and female parents experience burnout differently, with potential implications for how support services are designed. For instance, societal expectations and roles might influence these experiences differently. The results indicated a significant relationship between lower family income and higher levels of parental burnout. This finding suggested that economic stressors can exacerbate feelings of exhaustion and inefficacy in parenting, highlighting the need for socioeconomic considerations in support programs. Variations in burnout levels were observed across different education levels. Parents with

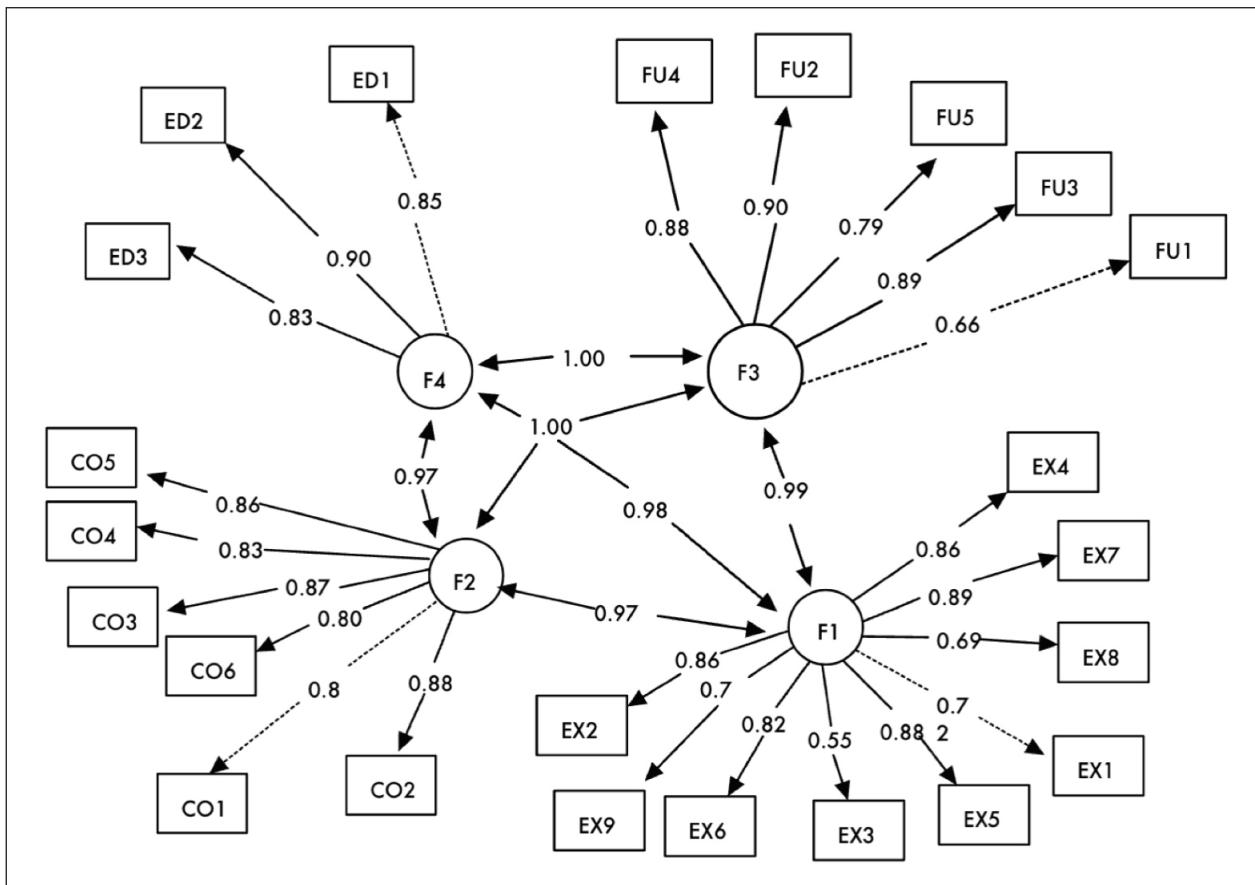


Figure 2. Results of the (CFA) for the first-order factor model of the PBA. CO, contrast in parental self; EX, exhaustion in parental role; FU, feelings of being fed up.

lower educational attainment reported higher burnout scores. This could indicate that those with less education might have fewer coping resources or support systems available. The employment status of both fathers and mothers influenced burnout levels, with stay-at-home parents potentially experiencing higher levels of emotional exhaustion due to the continuous demands of parenting. These relationships underscore the importance of considering a range of demographic factors when assessing parental burnout, as they can significantly influence the experience of burnout (Table 3).

CO, contrast in parental self; EX, exhaustion in parental role; ED, Emotional distance; FU, feelings of being fed up; SD, standard deviation

Mothers experience higher levels of burnout compared to fathers, reflecting the increased societal pressures on motherhood. Additionally, parents with lower income or educational attainment tend to report higher levels of burnout, indicating the need to direct resources and support to these groups. Furthermore, the employment status of both fathers and mothers can influence burnout levels, as stay-at-home parents may face increased emotional exhaustion due to continuous caregiving demands (Figure 3).

Discussion

The study identified a significant prevalence of parental burnout among Saudi parents, with higher scores observed across various demographic groups. It highlighted gender differences in experience burnout, suggesting that these variations could influence the design and implementation of support programs. For instance, societal expectations and roles may differently impact the experiences of burnout, underscoring the need for targeted interventions and support networks, particularly for disadvantaged populations. Hussien et al. [11] reported that an intervention in Egypt led to significant improvements in caregiver strain measures ($p < 0.001$). Furthermore, parenting satisfaction, efficacy, and the Parenting Sense of Competence (PSOC) scale all demonstrated statistically significant improvements ($p\text{-value} = 0.0001$), indicating that caregivers participating in the post-intervention phase enhanced their parenting self-efficacy. The findings also revealed a strong negative statistical association between caregiver stress scores and parental self-competency scores ($r = -0.48$, $p\text{-value} = 0.001$).

The study discovered a strong link between lower family income and higher degrees of parental burnout. This research implies that economic constraints can

Table 3. Descriptive statistics of PBA subscales and global score according to other variables.

	N	EX		CO		FU		ED		Total Score	
		Mean (SD)	P-value	Mean (SD)	P-value	Mean (SD)	P-value	Mean (SD)	P-value	Mean (SD)	P-value
Gender											
Boy	35.3 (16.1)	0.6443	135	26.8 (11.8)	0.4963	21.5 (9.84)	0.6658	13.1 (6.39)	0.4742	83.6 (36.6)	0.591
Girl	34.3 (14.5)		65	25.6 (10.7)		20.8 (9.51)		12.4 (5.72)		80.7 (33.6)	
Family income											
less than 5000	32.2 (13.4)	0.0196 *	54	24.7 (10.0)	0.26	19.9 (8.61)	0.0209 *	11.9 (5.63)	0.0415 *	76.8 (30.9)	0.0441 *
from 5000 to 10000	39.0 (16.5)		60	28.2 (12.2)		23.9 (10.3)		14.3 (6.37)		91.0 (37.9)	
from 10000 to 15000	35.7 (14.5)		67	27 (10.9)		21.3 (8.96)		13.1 (6.15)		83.9 (33.4)	
More than 15000	27.8 (18.7)		19	23.5 (14.0)		16.8 (11.4)		10.3 (6.23)		68.1 (43.0)	
Fathers work status											
No	37.7 (16.6)	0.4606	19	29.3 (11.6)	0.268	23.1 (9.76)	0.4077	13.8 (5.82)	0.4701	90 (36.2)	0.3606
yes	34.7 (15.4)		181	26.1 (11.4)		21.1 (9.71)		12.8 (6.22)		81.9 (35.6)	
Mothers work status											
No	34.4 (16.2)	0.3977	136	26.2 (11.8)	0.6665	20.9 (10.1)	0.4791	12.6 (16.13)	0.5045	81.5 (37.0)	0.484
Yes	36.3 (14.1)		64	26.9 (10.6)		21.9 (8.97)		13.3 (26.30)		85.1 (32.7)	
Mothers educated level											
Secondary	36.3 (12.3)	0.0585	14	24.2 (8.76)	0.0473 *	21.7 (8.84)	0.125	13 (5.70)	0.0612	82.2 (29.2)	0.822
University	34.6 (12.3)		5	23.6 (10.0)		20.6 (7.09)		11 (4.85)		78.8 (29.0)	
Master's degree	30.8 (15.8)		66	23.7 (11.7)		19.0 (10.1)		11.3 (5.90)		73.4 (36.7)	
Ph.D	37.3 (15.5)		115	28.3 (11.4)		22.5 (9.54)		13.8 (6.31)		88.1 (35.2)	
Fathers educated level											
Secondary	36.7 (14.5)	0.741	24	25.9 (10.2)	0.717	21.2 (8.24)	0.925	12.8 (5.7)	0.942	83.7 (32.2)	0.822
University	32.3 (12.3)		18	23.7 (8.77)		20.3 (7.23)		12.3 (4.96)		76.3 (27.5)	
Master's degree	36.1 (17.2)		57	27.2 (12.5)		21.9 (10.6)		13.2 (6.43)		85.2 (39.0)	
Ph. D	34.4 (15.4)		101	26.6 (11.6)		21.1 (9.97)		12.7 (6.38)		82.1 (36.0)	

Signif. codes: 0 '****' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 " 1.

worsen feelings of weariness and inefficacy in parenting, emphasizing the need for socioeconomic concerns in support programs. According to Abass et al. [12] caregivers of children with mental retardation reported feeling less burdened and more confident after completing a psycho-educational nursing program.

Parents with lower educational attainment reported higher burnout rates. This suggested that people with less education might have fewer coping options or support systems available. According to research conducted by Abo-Bakr Osman et al. [13] caregivers' overall scores for knowledge and practice, emotional state, and social

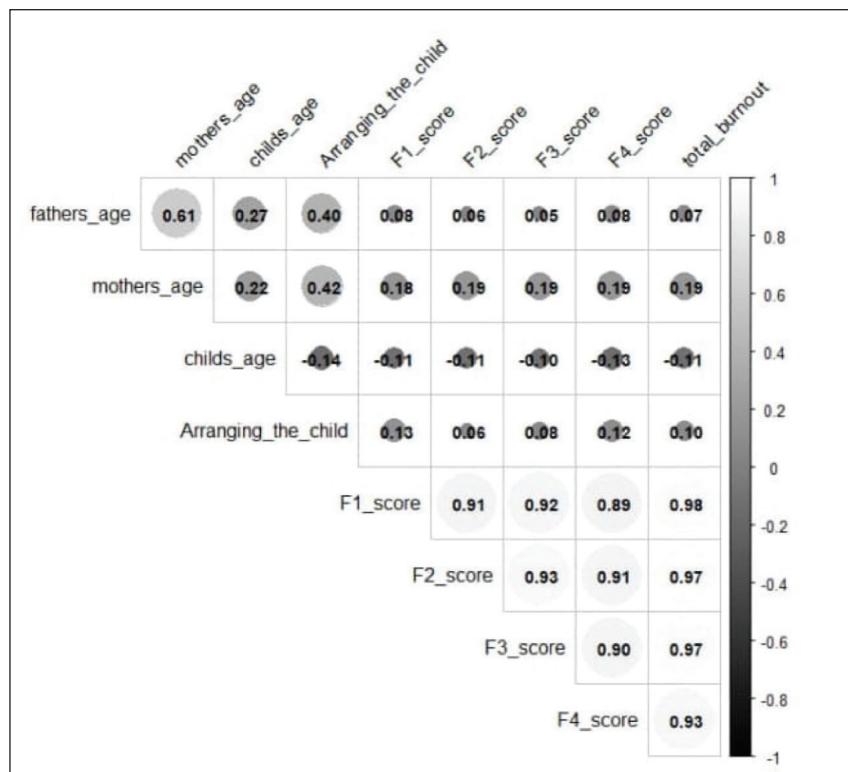


Figure 3. Correlations between the PBA and sociodemographic variables in Saudi parents.

skills improved dramatically after the Psychosocial interventions were introduced in comparison to before.

Moreover, parents' job status influenced burnout levels, with stay-at-home parents possibly experiencing higher levels of emotional weariness due to the constant demands of parenting. This necessitates taking into account a variety of demographic characteristics when assessing parental burnout, since they might have a major impact on the burnout experience. Alay et al. [14] found a substantial difference in the care burden between the two groups ($p < 0.001$). Many parents of children with special needs (PCSNs) provided moderate/severe care, whereas the majority of parents of children with chronic conditions (PCCD) provided mild to moderate care.

The correlations between levels of parental burnout and various sociodemographic variables, such as gender, income, education, and employment status. It suggested that mothers experience higher levels of burnout compared to fathers, reflecting the increased societal pressures on motherhood. Furthermore, parents with lower incomes or educational attainment reported higher levels of burnout, indicating that resources and support should be directed toward these groups. Furthermore, both fathers' and mothers' employment positions had an impact on burnout levels, as stay-at-home parents experienced heightened emotional weariness as a result of ongoing caregiving obligations. According to Khairul et al. [15] 72.5% of caregivers in Malaysia reported being moderately

stressed. Financial difficulties (9.2%), being overwhelmed (9.2%), and being angered by children with the disorder's behavior (10.6%) were among the most common sources of stress. However, caregivers' stress levels were strongly linked to their income, education, and the type of disability their child had ($p \leq 0.05$).

The study also found that underlying constructs influence basic factors such as weariness, cynicism, inefficacy, and emotional distance, offering a holistic understanding of parental burnout. El-Aziz et al. [16] found that most women in Egypt had lower levels of social support and moderate to severe levels of parental stress, respectively. Social support scores among mothers of disabled children were also found to be negatively and significantly related to total parental stress.

The study revealed that parental burnout differed between male and female parents, with lower family income and education levels contributing to higher burnout rates. Economic pressures exacerbated parental exhaustion, emphasizing the importance of addressing socioeconomic factors in support services. Employment status also impacted burnout, with stay-at-home parents experiencing greater emotional fatigue. These findings highlighted the critical role of demographic factors in shaping parental burnout. Kirbas and Sahin's [17] study in Turkey identified a positive correlation between mothers' psychological resilience and their perceived level of family-to-family support ($\beta = 0.437$, $p < 0.01$).

Additionally, mothers' reported support was positively associated with their overall well-being ($\beta = 0.315, p < 0.05$). However, no significant correlation was observed between psychological resilience and overall well-being ($\beta = 0.189, p > 0.05$).

The study also demonstrated that sociodemographic characteristics significantly influence parental burnout. Burnout was found to be more prevalent in mothers than fathers, with parents from lower-income or education brackets reporting higher levels. Motamedifard et al. [18] in their study conducted in Turkey, reported no notable difference in caregiving pressure between the control and intervention groups before the intervention. However, the post-intervention results showed a significant improvement ($p < 0.001$). The ANCOVA test further confirmed a significant difference between the two groups.

The study had some limitations, including a small sample size of 200 participants. Moreover, even though the participants live in a society that emphasizes family and encourages interdependence, the study found that parents in Saudi Arabia frequently experience emotional estrangement and burnout as a result of tiredness. This study's findings can be used for the initiation of future research on parental burnout among vulnerable households in Saudi Arabia and other regions with high prevalence rates of the disorder.

Conclusion

Parental burnout was prevalent and influenced by sociodemographic factors. Additionally, lower family income and education levels were strongly associated with increased burnout, emphasizing the critical role of socioeconomic factors in parental well-being. Employment status also played a significant role, with stay-at-home parents experiencing higher levels of emotional fatigue due to the constant demands of caregiving. Mothers reported higher burnout levels, reflecting the societal pressures on motherhood. There is a need for targeted interventions and support programs tailored to vulnerable populations. Further research could explore the causal factors and long-term implications of parental burnout on family dynamics and child development.

List of abbreviations

ADHD	Attention Deficit Hyperactivity Disorder
CFA	Confirmatory Factor Analysis
ED	Emotional distance
MBI	Maslach Burnout Inventory
RMSEA	Root mean square error of approximation
SRMR	Standardized root mean square residual
TLI	Tucker–Lewis index

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

Funding

None

Consent to participation

Informed consent was obtained from all participants

Ethical Approval

The ethical approval was obtained from the local committee for research ethics in the Qassim region via reference number 607/45/2589. Dated: 11/9/2023.

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