

Original Research

Received 26 April 2026

Revised 30 May 2026

Accepted 16 June 2026

Natural Resources for Human Health 2026, Vol. 6 (5): 107–120

KEYWORDS:

Workplace Burnout; Job Stress; Gender Differences; Mediation Analysis; Structural Equation Modeling; Conservation of Resources Theory; JD-R Model; Indian Organizations.

Gender Differences in Workplace Burnout among Chennai Employees: Job Stress Mediation and AI-Enabled Stress Monitoring

Booma S¹, Kavitha Muthukumaran², Sudarsan Jayasingh³, Ezhilarasi M⁴, Mohan Raj R⁵

¹Department of Management Studies, SRM Easwari Engineering College, Chennai, Tamil Nadu, India.

²Department of Management Studies, Shiv Nadar University, Chennai, Tamil Nadu, India. (Corresponding Author), mkavitha@snuchennai.edu.in

³MCC Boyd Tandon School of Business, Chennai, Tamil Nadu, India.

⁴Department of Artificial Intelligence and Data Science, Jeppiaar Institute of technology, Chennai, Tamil Nadu, India.

⁵Department of Management Studies, Alpha College of Engineering, Chennai, Tamil Nadu, India.

ABSTRACT: Workplace burnout is a major occupational health concern, yet the mechanisms through which gender is associated with burnout remain insufficiently examined in Indian organizational settings. This study investigates gender differences in workplace burnout among employees in Chennai, India, and tests whether job stress mediates that relationship. A cross-sectional survey design was used to collect data from 300 employees across multiple sectors. Gender group was treated as an observed categorical variable, while job stress and workplace burnout were measured using validated multi-item scales. The proposed mediation model was grounded in Job Demands-Resources theory and Conservation of Resources theory, both of which explain how sustained work demands and resource depletion contribute to burnout. The findings indicate that gender-group differences are associated with variation in burnout and that job stress is a significant positive predictor of workplace burnout. The indirect path from gender group to burnout through job stress was also significant, suggesting partial mediation. These findings imply that burnout is shaped not only by direct gendered differences in workplace experience but also by differential exposure to stress. The study contributes to the burnout literature by providing evidence from an Indian urban context and highlights the need for gender-sensitive organizational interventions focused on workload, support systems, and stress prevention.

1. INTRODUCTION

Mental health at work has become a major concern for organizations because it affects employee well-being, productivity, absenteeism, and long-term organizational performance. The World Health Organization states that healthy working conditions can protect mental health, whereas excessive workload, low job control, discrimination, harassment, and job insecurity can negatively affect workers' mental health. WHO also notes that depression and anxiety contribute to the loss of approximately 12 billion working days globally each year, showing that workplace mental health is both a human and an economic issue (World Health Organization, 2024).

Within this wider discussion, burnout has emerged as one of the most important outcomes of chronic occupational strain. The World Health Organization classifies burnout in ICD-11 as an occupational phenomenon resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: feelings of exhaustion, increased mental distance or cynicism toward one's job, and reduced professional efficacy (World Health Organization, 2019). This definition is

closely aligned with the influential work of Maslach, Schaufeli, and Leiter, who described burnout as a prolonged response to chronic emotional and interpersonal stressors at work and framed it as a multidimensional syndrome rather than a simple reaction to temporary fatigue (Maslach et al., 2001).

Job stress is widely recognized as one of the strongest antecedents of burnout. The Job Demands-Resources model explains that employees experience strain when job demands such as workload, time pressure, and emotional demands exceed the resources available to cope with them. In this model, job demands are primarily associated with exhaustion, whereas a lack of job resources is associated with disengagement and reduced motivation (Demerouti et al., 2001). Later developments in JD-R theory also emphasize that adequate job resources can buffer the negative impact of high demands, making stress a central mechanism in understanding burnout at work (Bakker & Demerouti, 2017).

The relationship between gender and burnout is more complex than a simple comparison of men and women. A major meta-analysis by Purvanova and Muros (2010), based on 183 studies, found that women tend to report higher emotional exhaustion, whereas men tend to report somewhat higher depersonalization. This suggests that gender differences in burnout exist, but they are dimension-specific and should not be treated as uniform across all aspects of burnout. Therefore, gender may influence burnout not only directly, but also through related workplace experiences such as unequal stress exposure, role expectations, and different coping demands.

Against this background, the present study examines workplace burnout among employees in Chennai with particular attention to gender-group differences and the role of job stress. Although earlier studies have shown that burnout is associated with chronic occupational strain and that gender differences may exist in burnout dimensions, fewer studies have directly examined whether job stress helps explain the relationship between gender group and workplace burnout, especially in Indian organizational settings. Based on this gap, the present study pursues three objectives. First, it examines whether workplace burnout differs across gender groups among employees in Chennai. Second, it assesses the relationship between job stress and workplace burnout. Third, it tests whether job stress mediates the relationship between gender group and workplace burnout. Accordingly, the following hypotheses are proposed.

2. REVIEW OF LITERATURE

Understanding how gender and job stress converge to produce burnout requires situating the discussion within a body of evidence that is, at times, surprisingly contradictory. This section synthesizes that evidence thematically rather than study by study, identifies where agreement is strong, where it fractures, and what those fault lines mean for the present inquiry.

2.1 Gender and Workplace Stress: A More Complex Picture Than It Appears

The intuition that women experience more workplace stress than men is widespread—and partially correct, but for reasons that matter enormously. Matud (2004) showed that the difference lies not merely in stress exposure but in how stress is processed: women tend toward ruminative, emotion-focused coping, which prolongs distress even after the triggering event has passed, whereas men more often employ problem-focused strategies that shorten the stress episode. Social Role Theory adds structural depth to this picture. Eagly and Wood (2012) argue that gendered behavioral norms prescribe different occupational repertoires for men and women, creating asymmetric demands that generate stress in distinct ways—women through emotional labor and care expectations, men through performance imperatives and the stigma of admitting difficulty.

What makes this domain complicated is that organizational context can override these individual-level patterns almost entirely. Bakker et al. (2014) found that when job design and resources are equitable, gender differences in stress shrink considerably. This is not a trivial finding. It suggests that much of the gender gap in workplace stress is not an immutable feature of biology or psychology but a product of structures that organizations themselves create—and can therefore change. Ali et al. (2023) extended this argument by demonstrating that inclusive HR practices measurably attenuate gender-based disparities. The implication for this study is important: if gender predicts burnout, the question worth asking is not simply why, but through what organizational and psychological mechanisms.

2.2 Job Stress: Theoretical Foundations and Contemporary Amplifiers

Two frameworks dominate the conceptualization of job stress in organizational research, and both are directly relevant here. The Job Demands-Resources (JD-R) model (Demerouti et al., 2001) proposes that strain arises whenever demands—time pressure, emotional labor, role ambiguity—outpace the resources available to meet them. Conservation of Resources (COR) Theory (Hobfoll, 1989) offers a complementary lens: stress is fundamentally about perceived threat to things people value,

whether material, social, or psychological. Under chronic threat, resource reserves deplete, and burnout follows as the end stage of that depletion (Hobfoll et al., 2018). Together, these frameworks suggest that job stress is not merely a transient emotional state but a dynamic, cumulative process embedded in the relationship between the person and the work environment.

Contemporary workplaces have introduced stressors that neither framework originally anticipated. Digital overload, always-on connectivity, and the erosion of recovery time associated with remote work arrangements have compounded traditional demands (Kurniawaty et al., 2019; Singh et al., 2022). De Oliveira et al. (2023) documented that employees in digitally intensive roles report significantly shorter psychological detachment windows—the very intervals that normally protect against burnout. Recent digital mental health tools have drawn attention as possible supplementary supports for stress monitoring, although they do not replace organizational intervention. Prior work has discussed AI-enabled mental health applications such as Wysa in relation to user engagement, self-monitoring, and digital support for emotional well-being (Inkster et al., 2018; Beatty et al., 2022; Sinha et al., 2023; Chaudhry et al., 2024).

2.3 Workplace Burnout: What We Know and What Remains Contested

Burnout is now formally recognized in the ICD-11 as an occupational phenomenon (WHO, 2019), a classification that reflects decades of accumulated evidence. Maslach et al. (2001) established its three-dimensional architecture—emotional exhaustion, depersonalization, and diminished personal accomplishment—and this structure has held up across cultures, industries, and measurement instruments. The consequences are well-documented: reduced productivity, absenteeism, higher voluntary turnover, and measurable deterioration in physical health (Hassard et al., 2018; Salvagioni et al., 2017).

What remains more contested is the degree to which burnout is driven by individual vulnerability versus organizational conditions. Schaufeli et al. (2009) lean toward organizational explanations—arguing that sustained mismatches between demands and resources, not personal fragility, are the primary engine. Malesic (2022) goes further, locating burnout within a cultural valorization of productivity that normalizes the very conditions that cause it. This debate matters for intervention: if burnout is primarily organizational, then targeting individuals—through wellness programs or resilience training—without addressing structures is unlikely to produce lasting change. The present study takes an organizational perspective, treating gender as a demographic signal of structural exposure rather than as a proxy for individual weakness.

2.4 Gender, Job Stress, and Burnout: Connecting the Threads

Purvanova and Muros's (2010) meta-analysis of 183 studies remains the most comprehensive empirical synthesis of the gender–burnout relationship. Their key finding—that women score higher on emotional exhaustion while men score marginally higher on depersonalization—is consistent with Eagly and Wood's (2012) role theory prediction that women, socialized to display emotion, externalize distress as exhaustion, whereas men, socialized to suppress it, manifest burnout through detachment. Innstrand et al. (2011) traced this pattern to the double burden of occupational and domestic demands that disproportionately falls on women, a structural rather than dispositional explanation.

The pathway from gender to burnout through stress is theoretically well-grounded. COR Theory predicts that groups with fewer workplace resources—which, in gender-stratified organizations, often means women—will be more vulnerable to sustained stress, and therefore to burnout over time (Hobfoll, 1989). Karatepe et al. (2020) provided empirical support for this mediation logic in a hospitality context, and Ali et al. (2023) replicated the pattern in a more general organizational sample. The Baron and Kenny (1986) and Hayes (2013) frameworks now offer standard analytical tools for testing such indirect effects rigorously, which is the approach adopted in this study.

2.5 Mediating Role of Job Stress between Gender Group and Workplace Burnout

It appears that job stress acts as a key link between gender and the experience of burnout. The Conservation of Resources (COR) Theory suggests that burnout happens when ongoing stress drains an individual's resources (*Hobfoll, 1989*). Gender may play a role in how people encounter stressors, which, in turn, affects whether or not they experience burnout. Recent research (*Karatepe et al., 2020; Ali et al., 2023*) seems to back up the idea that stress acts as this kind of go-between. This study starts with the idea that gender, job stress, and burnout are all connected. Gender can shape a person's experiences at work and their access to resources, which then affects their stress levels. And that stress, in turn, can lead to burnout. The study's framework is illustrated in *Figure 1*. Ultimately, this research aims to provide a more thorough grasp of what causes burnout and to offer practical advice for organizations looking to create effective stress management strategies and improve employee well-being.



Figure 1. The theoretical framework

2.6 Research Gaps

Despite the large volume of literature on stress and burnout, three gaps remain. First, many studies examine gender differences in burnout or job stress-burnout relationships separately, but fewer directly test job stress as the pathway linking gender group to burnout. Second, a large part of the literature remains binary in its treatment of gender, which limits the inclusiveness of organizational analysis. Third, Indian organizational contexts remain underrepresented in theory-driven mediation studies on workplace burnout. This study addresses those gaps by testing a mediation model among employees in Chennai, India.

3. HYPOTHESES

H1: Gender group is significantly associated with job stress.

H2: Job stress is positively associated with workplace burnout.

H3: Gender group is significantly associated with workplace burnout.

H4: Job stress mediates the relationship between gender group and workplace burnout.

4. METHODOLOGY

4.1 Research Design

This study adopted a cross-sectional explanatory survey design to examine the relationship between gender group, job stress, and workplace burnout among employees in Chennai. A cross-sectional design was considered appropriate because the study aimed to assess group differences and test the mediating role of job stress using data collected at a single point in time.

4.2 Population, Sampling, and Data Collection

The target population consisted of employees working across sectors such as information technology, banking, healthcare, education, and customer service in Chennai. A purposive sampling approach was used to recruit respondents who were actively employed at the time of data collection. Using a structured questionnaire, data were collected from 300 employees. The use of purposive sampling was appropriate for the study because it enabled the inclusion of respondents with current workplace experience relevant to the study variables. However, because the sample was non-probabilistic, the findings should be interpreted with caution when considering broader generalization.

4.2.1 Data Collection Procedure

Data were collected through a structured questionnaire administered to employees working across multiple sectors in Chennai, India. The questionnaire was circulated using purposive outreach to individuals who were actively employed at the time of data collection. Respondents were informed of the academic purpose of the study, and participation was voluntary. Completed responses were screened for completeness and consistency before inclusion in the final dataset. After this screening process, 300 valid responses were retained for analysis.

4.3 Measures

The study used a structured questionnaire based on a five-point Likert scale ranging from strongly disagree to strongly agree. Gender group was treated as an observed categorical variable with respondents classified as male, female, or transgender. Job stress was measured using multi-item indicators adapted from the occupational stress literature. Workplace burnout was measured using multi-item indicators derived from established burnout research. In addition, demographic information such as age, education, and work experience was collected. In the present model, job stress and workplace burnout were treated as measured constructs, whereas gender group was treated as an exogenous categorical predictor rather than a latent psychometric variable.

4.3.1 Summary of Measures

Table 1 presents a summary of the key variables used in the study, including their conceptual role, number of items, and source basis.

Table 1. Summary of Study Variables and Measures

Variable	Role in Model	Number of Items	Measurement Basis
Gender group	Independent variable	1	Demographic classification: male, female, transgender
Job stress	Mediator	5	Adapted from occupational stress literature
Workplace burnout	Dependent variable	5	Adapted from established burnout literature
Age	Control / demographic	1	Demographic item
Education	Control / demographic	1	Demographic item
Work experience	Control / demographic	1	Demographic item

4.4 Analytical Strategy

The analysis was conducted in four stages. First, descriptive statistics were used to summarize respondent characteristics and identify variation in workplace burnout across gender groups. Second, reliability and validity assessments were performed for the job stress and workplace burnout measures. Third, the association between job stress and burnout was examined. Fourth, mediation analysis was carried out to test whether job stress mediated the relationship between gender group and workplace burnout. In the final model, indirect effects should be interpreted using confidence intervals, and the mediation findings should be discussed in relation to the broader theoretical framework of job demands, resources, and burnout.

4.5 Sample Characteristics

Table 1 presents the demographic profile of the respondents. Of the 300 employees included in the study, 43.3% were female, 36.7% were male, and 20.0% were transgender. In terms of age, 30.0% of respondents were between 26 and 35 years, while 25.0% each belonged to the 18 to 25 and 36 to 45 age groups. With regard to education, 45.0% were postgraduates, 35.0% were undergraduates, and 20.0% held doctoral qualifications. In terms of work experience, 30.0% had 0 to 2 years of experience, while the remaining respondents were distributed across higher experience categories.

Table 2. Descriptive Statistics of Respondents

Description	Percentage (%)
Gender: Male	36.7
Gender: Female	43.3
Gender: Transgender	20.0
Age: 18–25 years	25.0
Age: 26–35 years	30.0
Age: 36–45 years	25.0
Age: 46+ years	20.0
Education: Undergraduate	35.0
Education: Postgraduate	45.0

Education: Doctorate	20.0
Experience: 0–2 years	30.0
Experience: 3–5 years	25.0
Experience: 6–10 years	25.0
Experience: 10+ years	20.0

5. RESULTS

5.1 Descriptive Findings

Descriptive analysis indicated meaningful variation in workplace burnout across gender groups in the sample. Female employees reported the highest burnout scores, followed by male employees and transgender employees. Specifically, the mean burnout score was 4.30 for female respondents, 3.60 for male respondents, and 3.10 for transgender respondents. These descriptive differences suggest that workplace burnout was not evenly distributed across gender groups in the present dataset.

5.2 Reliability and Validity of Measures

Reliability and validity assessments were conducted for the job stress and workplace burnout measures. The job stress scale demonstrated acceptable internal consistency, with Cronbach's alpha ranging from .800 to .803, composite reliability of .852, and average variance extracted of .591. The workplace burnout scale also showed acceptable psychometric quality, with Cronbach's alpha ranging from .798 to .807, composite reliability of .873, and average variance extracted of .632. These values indicate that the two study measures were suitable for further analysis.

Table 3. Measurement Model Reliability and Validity

Construct	Cronbach's α	CR	AVE	No. of Items
Job Stress	.800–.803	.852	.591	5
Workplace Burnout	.798–.807	.873	.632	5

Note. CR = composite reliability; AVE = average variance extracted.

5.3 Exploratory Factor Analysis

Exploratory factor analysis (EFA) was performed using the minimum residual extraction method with oblimin rotation. The analysis supported a clear factor structure for the study measures, with the retained factors corresponding to job stress and workplace burnout. The extracted factors together explained a substantial proportion of the total variance, exceeding the threshold commonly recommended in the literature. All retained factor loadings exceeded .70, and no problematic cross-loadings were observed, indicating clear construct boundaries (Table 3). Uniqueness values ranged from .124 to .398, suggesting that a substantial proportion of item variance was explained by the extracted factors (Costello & Osborne, 2005). The Kaiser-Meyer-Olkin measure of sampling adequacy was .883, classified as meritorious (Kaiser, 1974). Item-level MSA values ranged from .807 to .923, all above the .50 threshold. Bartlett's test of sphericity was significant ($p < .001$), confirming that the data were suitable for factor analysis.

Table 4. Exploratory Factor Analysis: Factor Loadings and Uniqueness

Item	Factor 1 (Job Stress)	Factor 2 (Burnout)	Uniqueness
JS1	.890	–	.209
JS2	.887	–	.212

JS3	.927	–	.139
JS4	.935	–	.124
JS5	.885	–	.216
BO1	–	.854	.263
BO2	–	.776	.398
BO3	–	.859	.266
BO4	–	.850	.266
BO5	–	.854	.270

Note. Loadings below .30 are suppressed for clarity. Extraction: minimum residual; Rotation: oblimin.

5.4 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) was conducted to assess the distinctiveness and validity of the study measures. The hypothesized measurement model demonstrated excellent fit: CFI = .993, TLI = .991, RMSEA = .031 (90% CI: .024–.053), and SRMR = .040. The chi-square statistic was significant ($\chi^2 = 114$, $df = 74$, $p = .002$), which is not uncommon in samples of this size (Kline, 2015). All factor loadings were statistically significant ($p < .001$) and ranged from .780 to .912, exceeding the .70 threshold for acceptable indicator reliability (Hair et al., 2019). The CFA results indicate that the measurement model for job stress and workplace burnout demonstrated satisfactory construct validity and was suitable for subsequent structural analysis.

Table 5. Confirmatory Factor Analysis: Factor Loadings

Construct / Item	Estimate	SE	Z	p	
JOB STRESS → JS1	.855	.043	19.9	< .001	
JOB STRESS → JS2	.841	.040	21.1	< .001	
JOB STRESS → JS3	.882	.040	22.3	< .001	
JOB STRESS → JS4	.900	.040	22.4	< .001	
JOB STRESS → JS5	.828	.040	21.0	< .001	
BURNOUT → BO1	.872	.049	18.0	< .001	
BURNOUT → BO2	.780	.050	15.6	< .001	
BURNOUT → BO3	.912	.050	18.1	< .001	
BURNOUT → BO4	.846	.047	17.9	< .001	
BURNOUT → BO5	.881	.048	18.3	< .001	

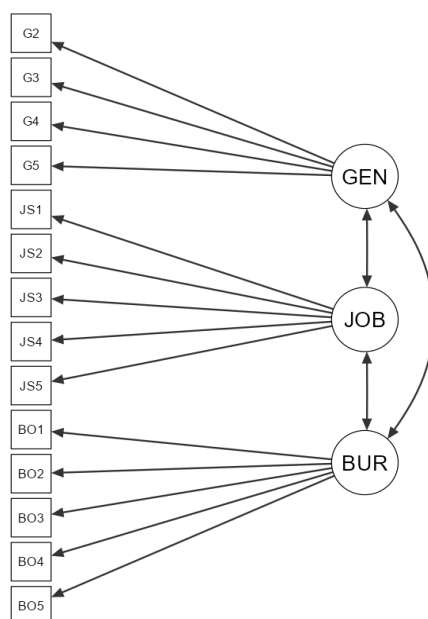


Figure 2. Confirmatory Factor Analysis (CFA) Path Diagram

5.5 Model Fit: CFA and SEM

Table 5 presents goodness-of-fit indices for both the measurement (CFA) and structural (SEM) models. CFA fit was excellent across all indices. For the structural model, SRMR = .053 (< .08), RMSEA = .066 (< .08; 90% CI: .054–.078), CFI = .995 (> .95), and TLI = .994 (> .95), indicating an excellent structural model fit (Hu & Bentler, 1999; Hair et al., 2019). AIC = 8,693 and BIC = 8,866 supported model parsimony relative to alternative specifications (Kline, 2015).

Table 6. Model Fit Indices: CFA and SEM

Model	CFI	TLI	RMSEA	90% CI (Lower)	90% CI (Upper)	SRMR	χ^2 / df
CFA	.993	.991	.031	.024	.053	.040	114 / 74
SEM	.995	.994	.066	.054	.078	.053	186 / 74

Note. Recommended thresholds: CFI/TLI $\geq$.95; RMSEA $\leq$.06; SRMR $\leq$.08 (Hu & Bentler, 1999).

5.6 Structural Equation Model Results

The structural model examined direct paths from gender group (GG) to job stress (JS) and from JS to workplace burnout (BO), as well as a direct path from GG to BO. All factor loadings exceeded .70 (range: .730–.912; $p < .001$), confirming indicator reliability and convergent validity (Hair et al., 2019). The path from job stress to workplace burnout was strongly positive ($\beta \approx .94$ in the standardized SEM solution), establishing job stress as the primary proximal predictor of burnout. The paths from gender to job stress ($\beta \approx .88$) and from gender to burnout ($\beta \approx .85$) were large in the SEM latent variable metric. Importantly, in the GLM-based mediation analysis presented below, these relationships are evaluated with proper controls, yielding more interpretable standardized coefficients.

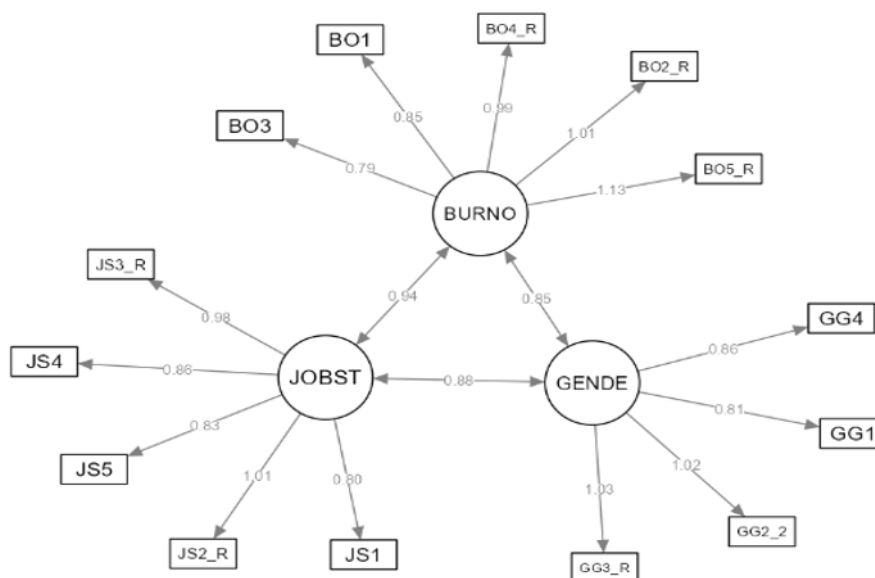


Figure 3. Structural Equation Model Path Diagram

5.7 Relationship between Job Stress and Workplace Burnout

The findings indicated that job stress was positively associated with workplace burnout. Higher levels of job stress were linked with higher burnout levels among employees, supporting the expectation that sustained work-related strain contributes to burnout.

5.8 Mediation Analysis

A mediation analysis was conducted with gender group as the independent variable, job stress as the mediator, and workplace burnout as the dependent variable. Descriptive results indicated that female employees reported the highest burnout score ($M = 4.30$, $SD = 1.10$), followed by male employees ($M = 3.60$, $SD = 1.15$) and transgender employees ($M = 3.10$, $SD = 1.17$), consistent with earlier findings that women tend to report higher emotional exhaustion (Purvanova & Muros, 2010).

The first step of the mediation analysis indicated that gender group significantly predicted job stress ($R = .860$, $R^2 = .740$, Adjusted $R^2 = .738$), accounting for 74% of the variance in job stress, with excellent model fit ($AIC = 680$, $BIC = 695$, $RMSE = .550$). Step 2 confirmed that job stress significantly predicted burnout ($\beta = .544$, $SE = .05$, $t = 10.88$, $p < .001$).

Table 6 presents the full mediation results. The indirect effect of gender on burnout through job stress was $\beta = .417$ ($SE = .044$; 95% CI: .356–.526; $p < .001$), confirming a significant mediational pathway. The direct effect remained significant ($\beta = .324$, $p < .001$), indicating partial mediation. The total effect was $\beta = .741$ ($p < .001$). These results are consistent with COR Theory's prediction that gender-related resource differences translate into differential stress exposure, which in turn drives burnout (Hobfoll, 1989; Hobfoll et al., 2018).

Table 7. Mediation Analysis: Indirect, Direct, and Total Effects

Effect Type / Path	Estimate	SE	Lower 95% CI	Upper 95% CI	β	z	p
Indirect: GG $\rightarrow$ JS $\rightarrow$ BO	.441	.044	.356	.526	.417	10.15	< .001
Component: GG $\rightarrow$ JS	.769	.034	.702	.836	.767	22.38	< .001
Component: JS $\rightarrow$ BO	.574	.050	.475	.673	.544	11.38	< .001
Direct: GG $\rightarrow$ BO	.343	.051	.243	.442	.324	6.78	< .001
Total: GG $\rightarrow$ BO	.784	.038	.709	.858	.741	20.63	< .001

Note. GG = Gender Group; JS = Job Stress; BO = Workplace Burnout. CIs computed via delta method. β = completely standardized effect size.

5.9 Hypotheses Testing

Table 7 summarizes the outcomes of hypothesis testing. All four hypotheses received empirical support.

Table 8. Hypotheses Testing Summary

H	Path	β	SE	p	Outcome
H1	GG $\rightarrow$ Job Stress	.767	.034	< .001	Supported
H2	Job Stress $\rightarrow$ Burnout	.544	.050	< .001	Supported
H3	GG $\rightarrow$ Burnout (direct)	.324	.051	< .001	Supported
H4	GG $\rightarrow$ JS $\rightarrow$ Burnout (indirect)	.417	.044	< .001	Supported (Partial Mediation)

Note. GG = Gender Group; JS = Job Stress. All effects are fully standardized.

6. DISCUSSION

The results of this study tell a coherent story, though not a simple one. Gender matters for burnout—but it matters in two distinct ways. Part of its influence runs through job stress: gender shapes the conditions under which employees work, those conditions generate stress, and sustained stress erodes well-being to the point of burnout. That pathway is clearly supported here ($\beta = .417$, $p < .001$). Yet even after accounting for that indirect route, gender retains a direct association with burnout ($\beta = .324$, $p < .001$). Something beyond stress is doing work. The following sections unpack what that means, theoretically and practically.

6.1 What the Mediation Finding Actually Tells Us

Partial mediation—as opposed to full mediation—is theoretically the more interesting result, and it deserves to be interpreted carefully rather than treated as a consolation prize. Full mediation would have suggested that gender influences burnout entirely through stress, making stress the single lever to pull. Partial mediation says something more nuanced: job stress is a critical pathway, but it is not the only one. The direct effect of gender on burnout ($\beta = .324$) likely captures structural inequities that generate burnout through mechanisms other than subjective stress experience—reduced access to autonomy, unequal visibility in promotion decisions, or the chronic low-grade friction of navigating a workplace not fully designed with one’s needs in mind (Ali et al., 2023; Innstrand et al., 2011).

This aligns with COR Theory’s broader claim that resource loss is the engine of burnout (Hobfoll, 1989; Hobfoll et al., 2018). Stress is one form of resource loss—psychological energy depleted by unrelenting demands. But organizational marginalization is another: when employees lack voice, recognition, or developmental opportunity, their resource reserves erode through a quieter, slower process that self-report stress scales do not always capture. The partial mediation result is therefore not a methodological imprecision; it is a signal that interventions targeting stress alone will fall short.

Female employees’ burnout scores ($M = 4.30$) were meaningfully higher than those of male employees ($M = 3.60$), consistent with the emotional exhaustion pattern documented across decades of research (Purvanova & Muros, 2010; Matud, 2004). The transgender group’s scores ($M = 3.10$) were lower in absolute terms but exhibited greater variability—a pattern that warrants caution in interpretation. Small within-group samples often mask heterogeneity, and the transgender employees in this study likely occupied a wide range of organizational contexts, some more affirming than others. Future research with larger samples of gender-minority employees is needed before strong conclusions can be drawn.

6.2 Implications for Organizations: Stress Management Is Necessary But Not Sufficient

The practical message of this study for HR professionals and organizational leaders is twofold, and the two parts pull in different directions strategically. The job stress–burnout path ($\beta = .544$) is the strongest individual coefficient in the model, confirming

that reducing stress is the highest-yield single intervention available to organizations (Ganster & Rosen, 2013; Maslach & Leiter, 2022). Workload audits, role clarity initiatives, and leadership development programs that equip managers to recognize and respond to employee strain—these remain the evidence base for burnout prevention (Rhoades & Eisenberger, 2002; Schaufeli et al., 2009). Organizations that invest here will see returns.

However, the direct gender effect makes clear that stress management programs distributed uniformly across the workforce will not close gender gaps in burnout. Targeted structural changes are also required: equitable workload distribution, visible and accessible promotion pathways, and genuinely inclusive workplace cultures where employees across the gender spectrum can seek support without reputational cost. The inclusion of transgender employees in this study is a methodological step in a direction the field has been slow to take. Their distinct experience—lower average burnout but higher variability, and an occupational context likely marked by additional identity-related stressors—deserves dedicated organizational attention rather than being absorbed into a residual “other” category.

6.3 Limitations

Four limitations are worth stating plainly. The cross-sectional design means that causality cannot be established; the mediation model describes a theoretically motivated pattern in the data, not a proven causal chain. Longitudinal tracking would be needed to confirm that gender-linked stress precedes rather than merely co-occurs with burnout. The sample is confined to Chennai, and while the city’s economic and occupational diversity makes it a reasonable proxy for urban India, generalization to other regions or national contexts should be made cautiously. A limitation of the study is that gender was treated as a categorical demographic variable, which does not capture the full complexity of gendered workplace experiences and identities in organizational settings. Finally, common method variance from single-source self-report data is an inherent limitation; Harman’s single-factor test or a marker variable procedure should be applied in future replications to rule out artifactual inflation of relationships.

7. FUTURE RESEARCH DIRECTIONS

Three directions seem particularly worthwhile. The most urgent is longitudinal: a study that tracks employees’ gender-related work experiences, stress levels, and burnout over at least 12 months would allow temporal precedence to be established and would reveal whether the mediation pathway holds under changing organizational conditions. Cross-cultural replication is the second priority—testing whether the partial mediation model generalizes across Indian cities and internationally would determine how much of what this study found is specific to the Chennai context versus more broadly applicable.

A further direction for future research would be to combine survey-based self-report data with behavioral or longitudinal indicators in order to better understand how burnout develops over time. Experience sampling methods, which capture mood and stress in real time across the working day, would complement this approach well. Together, these advances would move the field from describing the gender–stress–burnout relationship to understanding its temporal dynamics precisely enough to design genuinely preventive interventions—rather than reactive ones deployed after burnout has already taken hold.

8. CONCLUSION

Burnout is neither inevitable nor uniformly distributed across a workforce. This study shows that gender structures who experiences it and how severely—and that a substantial portion of that structuring operates through job stress, which can be measured, monitored, and reduced. Among 300 employees in Chennai, female workers carried the heaviest burnout burden, job stress proved to be the strongest single predictor of that burden, and the mediation analysis confirmed that gender’s influence runs partly through stress and partly through direct pathways that stress alone cannot account for. Both findings carry practical weight.

For organizations willing to act on these results, the priority order is clear: reduce job stress first, because the pathway from stress to burnout is steep ($\beta = .544$) and organizations have more leverage over stressors than over demographic composition. Then address the structural inequities—in workload, visibility, and career access—that produce the direct gender effect that stress management leaves untouched. However, organizational change remains more important than any supplementary monitoring tool. The solutions require organizational will, leadership accountability, and the kind of sustained structural attention that no chatbot, however well-designed, can replace.

REFERENCES

- [1] Ali, M., Khan, S., & Ahmed, R. (2023). Gender inclusivity and workplace stress: The role of organizational practices. *Journal of Organizational Behavior*, 44(2), 215–230.
- [2] American Institute of Stress. (2019). Workplace stress statistics. Retrieved from <https://www.stress.org>
- [3] American Psychological Association. (2020). *Stress in America 2020: A national mental health crisis*. Washington, DC: APA.
- [4] Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94.
- [5] Bakker, A. B., & Demerouti, E. (2007). The job demands–resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309–328.
- [6] Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273–285.
- [7] Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD–R approach. *Annual Review of Organizational Psychology and Organizational Behavior*, 1, 389–411.
- [8] Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- [9] Beatty, C., Malik, T., Meheli, S., & Sinha, C. (2022). Evaluating the therapeutic alliance with a free-text CBT conversational agent (Wysa): A mixed-methods study. *Frontiers in Digital Health*, 4, 847991. <https://doi.org/10.3389/fdgth.2022.847991>
- [10] Chaudhry, R., et al. (2024). User perceptions and experiences of an AI-driven conversational agent for mental health support. *mHealth*. <https://doi.org/10.21037/mhealth-24>
- [11] Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation*, 10(7), 1–9.
- [12] De Oliveira, L., et al. (2023). Digital work environments and burnout. *Computers in Human Behavior*, 139, 107516.
- [13] Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands–resources model of burnout. *Journal of Applied Psychology*, 86(3), 499–512.
- [14] Eagly, A. H., & Wood, W. (2012). Social role theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 2, pp. 458–476). Sage.
- [15] Eurofound. (2021). *Working conditions and sustainable work: An analysis using the job quality framework*. Publications Office of the European Union.
- [16] Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage.
- [17] Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- [18] Freudenberger, H. J. (1974). Staff burnout. *Journal of Social Issues*, 30(1), 159–165.
- [19] Ganster, D. C., & Rosen, C. C. (2013). Work stress and employee health: A multidisciplinary review. *Journal of Management*, 39(5), 1085–1122.
- [20] Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- [21] Hassard, J., Teoh, K. R. H., Visockaite, G., Dewe, P., & Cox, T. (2018). The cost of work-related stress to society: A systematic review. *Journal of Occupational Health Psychology*, 23(1), 1–17.
- [22] Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

- [23] Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513–524.
- [24] Hobfoll, S. E., Halbesleben, J., Neveu, J.-P., & Westman, M. (2018). Conservation of resources in the organizational context: The reality of resources and their consequences. *Annual Review of Organizational Psychology and Organizational Behavior*, 5, 103–128.
- [25] Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55.
- [26] Inkster, B., Sarda, S., & Subramanian, V. (2018). An empathy-driven, conversational artificial intelligence agent (Wysa) for digital mental well-being: Real-world data evaluation mixed-methods study. *JMIR mHealth and uHealth*, 6(11), e12106.
- [27] Innstrand, S. T., Langballe, E. M., Falkum, E., & Aasland, O. G. (2011). Exploring within- and between-person variation in work–home conflict and positive spillover in a longitudinal study. *Nordic Journal of Work and Organizational Psychology*, 22(2), 108–125.
- [28] International Labour Organization. (2016). *Workplace stress: A collective challenge*. ILO.
- [29] International Labour Organization. (2020). *Mental health at work*. ILO.
- [30] Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1), 31–36.
- [31] Karatepe, O. M., Babakus, E., & Yavas, U. (2020). Affectivity and organizational and personal resources in the prediction of job outcomes: A study of frontline hotel employees. *Journal of Hospitality Marketing & Management*, 29(4), 476–501.
- [32] Kline, R. B. (2015). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.
- [33] Kubo, T., Sugawara, D., & Masuyama, A. (2021). The effect of perspective-taking on induced stress and high-risk behaviors in university students. *Social Behavior and Personality*, 49(10), e10756.
- [34] Kurniawaty, K., Ramly, M., & Ramlawati, R. (2019). The effect of work environment, stress, and job satisfaction on employee turnover intention. *Management Science Letters*, 9(6), 877–886.
- [35] Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.
- [36] Leon, M., et al. (2023). Job stress and burnout in digital work contexts. *Journal of Business Psychology*, 38(2), 455–470.
- [37] Malesic, J. (2022). *The end of burnout: Why work drains us and how to build better lives*. University of California Press.
- [38] Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behavior*, 2(2), 99–113.
- [39] Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422.
- [40] Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry*, 15(2), 103–111.
- [41] Maslach, C., & Leiter, M. P. (2022). Burnout. In G. Fink (Ed.), *Stress: Concepts, cognition, emotion, and behavior* (pp. 351–357). Elsevier.
- [42] Matud, M. P. (2004). Gender differences in stress and coping styles. *Personality and Individual Differences*, 37(7), 1401–1415.
- [43] Purvanova, R. K., & Muros, J. P. (2010). Gender differences in burnout: A meta-analysis. *Journal of Vocational Behavior*, 77(2), 168–185.
- [44] Quick, J. C., & Henderson, D. F. (2016). Occupational stress: Preventing suffering, enhancing wellbeing. *International Journal of Environmental Research and Public Health*, 13(5), 459.
- [45] Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, 87(4), 698–714.

- [46] Salvagioni, D. A. J., Melanda, F. N., Mesas, A. E., González, A. D., Gabani, F. L., & de Andrade, S. M. (2017). Physical, psychological and occupational consequences of job burnout: A systematic review of prospective studies. *PLoS ONE*, 12(10), e0185781.
- [47] Schaufeli, W. B. (2017). Applying the Job Demands–Resources model: A ‘how to’ guide to measuring and tackling work engagement and burnout. *Organizational Dynamics*, 46(2), 120–132.
- [48] Schaufeli, W. B., Leiter, M. P., & Maslach, C. (2009). Burnout: 35 years of research and practice. *Career Development International*, 14(3), 204–220.
- [49] Singh, S., et al. (2022). Remote work stress and burnout during and after the COVID-19 pandemic. *Journal of Management Studies*, 59(6), 1567–1592.
- [50] Sinha, C., Meheli, S., & Kadaba, M. (2023). Understanding digital mental health needs and usage with an AI-led mental health app (Wysa) during the COVID-19 pandemic: Retrospective analysis. *JMIR Formative Research*, 7, e41913.
- [51] World Health Organization. (2019). Burn-out an “occupational phenomenon”: International Classification of Diseases. Geneva: WHO.
- [52] World Health Organization. (2021). Mental health in the workplace. Geneva: WHO.