Work Stress, Emotional Exhaustion, and Psychological Well-Being in Working Adults: An Indirect-Effect Analysis

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Abstract

Background. Work stress is among the most consequential occupational health challenges in contemporary labour markets, with documented associations with reduced employee psychological well-being. Emotional exhaustion — the core affective component of burnout — has been theorised as a central mechanism linking chronic occupational demands to compromised psychological health, yet formal indirect-effect models examining this pathway in general working-adult samples remain comparatively sparse.

Aim. The present study examined whether emotional exhaustion statistically accounts for part of the association between perceived work stress and psychological well-being in a sample of working adults.

Design and Sample. A cross-sectional online survey was administered to N = 109 working adults (M*age* = 36.3 years, SD = 9.3; 53.2% female; 84.4% full-time). Measures comprised the Perceived Work Stress Scale (PWSS; α = .94), the Emotional Exhaustion Scale (EES; α = .94), and the Psychological Well-Being Scale (PWBS; α = .92), all author-developed for this study.

Results. Perceived work stress was positively correlated with emotional exhaustion ($r = .68$, $p < .001$) and negatively correlated with psychological well-being ($r = -.53$, $p < .001$); emotional exhaustion was negatively correlated with well-being ($r = -.55$, $p < .001$). A bootstrapped indirect-effect analysis (PROCESS Model 4; Hayes, 2018; 5,000 resamples) yielded a significant indirect association of work stress with well-being through emotional exhaustion ($\beta = -.23$, 95% CI [−.39, −.10]), alongside a significant direct association ($\beta = -.30$, $p = .006$). The model accounted for 35% of the variance in psychological well-being. Critically, no confounders were measured or modelled — in particular, negative affectivity (trait neuroticism), which is known to inflate self-reported stress–strain associations — so every coefficient reported here is an unadjusted bivariate-level association whose magnitude is bounded by this omission.

Conclusion. Emotional exhaustion is associated with a substantial portion of the link between perceived work stress and reduced psychological well-being. Because the design is cross-sectional and all reported coefficients are unadjusted associations — no confounders (e.g., negative affectivity, occupational sector or level) were modelled — the indirect effect is interpreted as consistent with — but not confirmatory of — the hypothesised causal pathway. The findings corroborate a well-established occupational-health mechanism and point to emotional exhaustion as a practically informative intervention target.

Keywords: *work stress, emotional exhaustion, burnout, psychological well-being, indirect effect, cross-sectional*

1. Introduction

Consider a 38-year-old hospital administrator who arrives at work before her colleagues, answers emails during her lunch break, and lies awake at night mentally rehearsing the next day's tasks. Over two years in a restructured department with reduced staffing and escalating demands, she has come to feel that no matter how much effort she invests, the gap between what is required and what she can provide continues to widen. The work she once found engaging has become a source of dread. She is not yet clinically ill, but she is undeniably not well — a state that organisational psychologists would recognise as a constellation of work stress, emerging emotional exhaustion, and compromised psychological well-being.

Occupational stress is consistently identified as one of the leading threats to workforce health in European and global contexts (European Agency for Safety and Health at Work, 2022; Leka & Jain, 2010). Estimates from the World Health Organization indicate that stress-related mental health conditions — particularly depression and anxiety disorders — account for a substantial proportion of disability-adjusted life years and represent a major driver of healthcare costs and reduced workplace productivity (WHO, 2022). Across European labour markets, elevated rates of burnout and stress-related psychological distress have been documented among workers in multiple sectors, making occupational mental health a priority for both academic and applied psychology (Schaufeli et al., 2001).

The Job Demands–Resources (JD-R) model (Bakker & Demerouti, 2007) and Conservation of Resources (COR) theory (Hobfoll, 1989) provide complementary frameworks for understanding

the relationship between work stress and employee well-being. The JD-R model proposes that job demands — physical, psychological, social, or organisational features of the job that require sustained effort and are therefore associated with psychological costs — are linked to a health-impairment process that, when demands are sustained, is associated with the depletion of personal energy resources and the development of burnout. COR theory (Hobfoll, 1989) posits that individuals are motivated to acquire, retain, protect, and foster resources, and that strain arises when resources are threatened, lost, or fail to yield anticipated returns after investment.

Emotional exhaustion — conceptualised within Maslach's burnout framework (Maslach & Leiter, 2016) as the chronic depletion of emotional energy associated with sustained exposure to demanding interpersonal or organisational situations — is widely regarded as the core affective component of burnout and the most proximal psychological correlate of work stress. Cross-sectional and longitudinal studies have repeatedly documented positive associations between perceived work demands and emotional exhaustion, and negative associations between exhaustion and psychological well-being (Schaufeli & Bakker, 2004; Shirom, 2003). However, comparatively few studies have formally tested emotional exhaustion as an intervening variable in the specific pathway from perceived work stress to psychological well-being in general community samples of working adults — the focus of the present study.

The present study employs a cross-sectional design with N = 109 working adults and tests three hypotheses: (H1) perceived work stress is positively associated with emotional exhaustion; (H2) emotional exhaustion is negatively associated with psychological well-being; and (H3) the association between perceived work stress and psychological well-being is, in part, statistically accounted for by an indirect path through emotional exhaustion (i.e., a significant indirect effect), tested without assuming causal direction. The study’s contribution is one of consolidation and transparency rather than discovery, and is located specifically in its sample and reporting. Although the demand–exhaustion–well-being pathway is well established, the bulk of the supporting evidence derives from single-occupation or single-organisation samples (e.g., particular health-care, teaching, or service workforces); formal, bootstrapped indirect-effect tests of this specific pathway in heterogeneous, general community samples of working adults — spanning multiple sectors and occupational levels rather than one workforce — remain comparatively sparse. The present study addresses that gap by providing a formally tested

indirect-effect estimate in such a sample, with the full item content of all measures openly reproduced (Appendix A) and contemporary analytic methods applied transparently. This positioning is deliberately modest: the pathway is treated as confirmatory in substance, whereas the author-developed measurement model is treated as exploratory and provisional (Section 4.2). From an applied standpoint, evidence that emotional exhaustion is associated with much of the stress–well-being link would strengthen the rationale for treating exhaustion as a practically informative intervention target.

2. Theoretical Background

2.1 Work Stress: Conceptualisation and Theoretical Foundations

Perceived work stress refers to the subjective appraisal of occupational demands as exceeding one's available coping resources, resulting in a state of psychological strain with cognitive, affective, and somatic components (Lazarus & Folkman, 1984; Karasek, 1979). The construct is theoretically distinct from objective job demands in that it captures the individual's transactional evaluation of the fit — or misfit — between occupational requirements and personal resources. This distinction is practically significant: two individuals exposed to identical job demands may differ substantially in their stress appraisals as a function of differences in available resources, coping strategies, and dispositional characteristics.

Karasek's (1979) Job Demands–Control model was among the first systematic frameworks to articulate the conditions under which job demands are associated with psychological strain, proposing that high demands combined with low control constitute the most strain-prone configuration. Subsequent elaborations, including Karasek and Theorell's (1990) extension incorporating social support and Johnson and Hall's (1988) iso-strain model, have been tested across occupational groups and national contexts with broadly supportive findings. Siegrist's (1996) Effort–Reward Imbalance model offers a complementary perspective, locating occupational strain in the perceived imbalance between effort invested and rewards received, and has particular relevance for contemporary contexts characterised by rising productivity demands alongside stagnating wages and declining job security.

The JD-R model (Bakker & Demerouti, 2007) synthesises and extends these earlier frameworks through a dual-process account in which job demands are linked to a health-impairment process

(demands → strain → burnout → ill-health), while job resources are linked to a motivational process (resources → engagement → performance). Empirical tests across diverse organisational samples have consistently observed the demand–exhaustion association and have reported that emotional exhaustion statistically intervenes between job demands and health outcomes (Demerouti et al., 2001; Bakker & Demerouti, 2007; Llorens et al., 2006).

2.2 Emotional Exhaustion: The Core Burnout Component and Its Well-Being Correlates

Emotional exhaustion is conceptualised as the chronic depletion of emotional and physical energy associated with sustained exposure to demanding, emotionally laden, or interpersonally intensive work (Maslach & Leiter, 2016). Within the tripartite burnout framework it is distinguished from depersonalisation (cynical or distancing attitudes) and reduced personal accomplishment (diminished professional efficacy). Of the three dimensions, emotional exhaustion is most consistently associated with adverse health outcomes and has been proposed as the central component of the syndrome.

The mechanisms through which emotional exhaustion is linked to reduced psychological well-being are theoretically well articulated. COR theory (Hobfoll, 1989) frames exhaustion as a state of significant resource loss — specifically the loss of the energetic and emotional resources required for effective coping, meaningful engagement, and positive self-evaluation. Ryff's (1989) multidimensional model of psychological well-being — encompassing autonomy, environmental mastery, personal growth, positive relations, purpose in life, and self-acceptance — provides a comprehensive outcome framework within which the correlates of emotional exhaustion can be interpreted. Research has documented negative associations between emotional exhaustion and each of Ryff's dimensions, suggesting that exhaustion is associated with the full range of positive functioning rather than merely reduced hedonic affect.

Maslach and Leiter's (2016) updated conceptualisation situates emotional exhaustion within a broader framework of person–job fit, proposing that mismatches across six domains — workload, control, reward, community, fairness, and values — accumulate in association with chronic energy depletion. This framework carries organisational implications: it suggests that exhaustion is not simply a property of individual stress tolerance but is associated with systemic

person–environment misfit, indicating a role for both individual- and organisational-level intervention.

2.3 Psychological Well-Being and the Integrative Model

Psychological well-being, in the tradition of Ryff (1989) and in convergence with hedonic frameworks (Diener, 1984), encompasses positive affect, life satisfaction, and positive psychological functioning across multiple domains. In occupational contexts, well-being reflects the degree to which work and organisational experiences support or undermine positive self-experience, goal engagement, and interpersonal flourishing. The integrated model of the present study proposes that perceived work stress is associated with a depletion process indexed by emotional exhaustion, and that exhaustion is in turn associated with reduced psychological well-being. Work stress may also be associated with well-being through routes not captured by emotional exhaustion — including direct cognitive strain, heightened worry, and disrupted recovery — which would be reflected in a residual direct association alongside the indirect path.

On this basis, three hypotheses were formulated:

H1: Perceived work stress is positively associated with emotional exhaustion.

H2: Emotional exhaustion is negatively associated with psychological well-being.

H3: The association between perceived work stress and psychological well-being is, in part, statistically accounted for by an indirect path through emotional exhaustion (a significant indirect effect), without assuming causal direction.

3. Method

3.1 Study Design

The study employed a quantitative cross-sectional survey design. Data were collected simultaneously through a single online questionnaire administered to a community sample of working adults. This design supports the estimation of indirect effects via bootstrap methods (Hayes, 2018) for a theoretically specified construct ordering, but — as elaborated in the Limitations — it does not permit causal or temporal inference. All procedures were conducted in accordance with the Declaration of Helsinki (2013 revision).

3.2 Participants and Recruitment

Participants were recruited online from a community sample of working adults via social media platforms and professional networks. Eligibility required current employment (full- or part-time) or employment within the previous three months. The final sample comprised N = 109 working adults with a mean age of 36.3 years (SD = 9.3; range 18–56). Three implausible age entries (data-entry errors) were corrected prior to analysis; age was not included as a study variable. The gender distribution was 58 women (53.2%) and 51 men (46.8%). Employment status was full-time for 92 participants (84.4%) and part-time for 17 (15.6%). Completion was voluntary and anonymous and required approximately 15–20 minutes.

3.3 Measures

Perceived work stress. Perceived work stress was assessed with the Perceived Work Stress Scale (PWSS), a 10-item self-report measure **developed by the author for the present study** to capture the subjective experience of occupational demands, cognitive overload, and the sense of being overwhelmed by work requirements. Items were generated on the basis of transactional stress theory (Lazarus & Folkman, 1984) and the job-demands literature (Bakker & Demerouti, 2007; Karasek, 1979) and were refined for clarity prior to administration. Responses use a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). All items are listed in Appendix A. Internal consistency in the present sample was excellent (Cronbach's $\alpha = .94$, McDonald's $\omega = .94$; M = 3.58, SD = 0.90). A representative item is: “I feel overwhelmed by the demands of my job.”

Emotional exhaustion. Emotional exhaustion was assessed with the Emotional Exhaustion Scale (EES), a 9-item self-report measure **developed by the author for the present study** to index the affective–energetic depletion component of burnout. The EES items were written de novo for the present study to operationalise this standard, narrowly defined construct domain, the definition of which derives from Maslach’s burnout framework (Maslach & Leiter, 2016). To establish provenance unambiguously: no proprietary or copyrighted instrument — including the Maslach Burnout Inventory (MBI) — was licensed, administered, or reproduced, in whole or in part, at any stage of this research, and the EES is therefore an independent operationalisation rather than a relabelled MBI subscale. Because the affective–energetic depletion domain is itself well established, the EES and canonical exhaustion subscales necessarily converge at the level of

construct content; the EES items were nonetheless deliberately worded so as not to reproduce the item phrasing of those instruments. The full EES item set is reproduced in Appendix A so that readers can verify both its construct coverage and its independence of wording directly, and the scale makes no claim to psychometric novelty beyond the structural evidence reported in Section 4.2. Responses use a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). All items are listed in Appendix A. Internal consistency was excellent (α = .94, ω = .94; M = 3.41, SD = 1.00). A representative item is: "After a typical workday, my emotional reserves feel completely spent."

Psychological well-being. Psychological well-being was assessed with the Psychological Well-Being Scale (PWBS), an 8-item self-report measure **developed by the author for the present study** to index positive psychological functioning across the domains most relevant to working adults. Item content was informed conceptually by Ryff's (1989) eudaimonic model of well-being (e.g., self-acceptance, environmental mastery, purpose), with original wording used for each item. Responses use a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). All items are listed in Appendix A. Internal consistency was good (α = .92, ω = .92; M = 3.29, SD = 0.89). A representative item is: "I feel positive about myself and my future."

Note on scale provenance and validation. Because all three instruments were author-developed, evidence for their structure and discriminant validity is reported in Section 4.2 (confirmatory factor analysis, average variance extracted, and heterotrait–monotrait ratios) rather than relying solely on internal-consistency coefficients. The full item sets in Appendix A are provided so that readers can evaluate item content and potential overlap directly. Because the three scales were revised in their wording and re-administered in a fresh data collection, the descriptive statistics, reliability coefficients, and inter-correlations reported here differ in detail from values obtained with earlier versions of these instruments; the present figures derive from the current item set and sample and supersede, rather than contradict, any previously circulated estimates.

3.4 Construct Validity and Common Method Variance

Prior to hypothesis testing, the measurement model was evaluated through confirmatory factor analysis (CFA) using maximum-likelihood estimation. A three-factor model (PWSS, EES, PWBS) was specified, with each item loading on its intended latent factor. Model fit was

assessed using the comparative fit index (CFI), Tucker–Lewis index (TLI), root-mean-square error of approximation (RMSEA) with its 90% confidence interval, and standardised root-mean-square residual (SRMR), interpreted against conventional benchmarks (CFI/TLI ≥ .90–.95; RMSEA ≤ .06–.08; SRMR ≤ .08; Hu & Bentler, 1999). Although a confirmatory model was specified, the present sample size relative to the number of estimated parameters is well below the level at which CFA yields stable, confirmatory evidence; the analysis is therefore reported and interpreted as exploratory and provisional, intended to screen the assumed measurement structure rather than to confirm it (see Section 4.2).

Given the strong zero-order correlation between perceived work stress and emotional exhaustion (r = .68), discriminant validity was examined explicitly. The hypothesised three-factor model was compared with a constrained two-factor model in which PWSS and EES items were forced to load on a single common factor; a significantly better fit of the three-factor model would indicate that the two constructs are empirically separable. Discriminant validity was further evaluated using the average variance extracted (AVE) with the Fornell–Larcker criterion (Fornell & Larcker, 1981) and the heterotrait–monotrait ratio of correlations (HTMT; Henseler et al., 2015), applying the conservative HTMT threshold of .85.

Common method variance (CMV) was assessed because all constructs were measured by self-report within a single instrument. Harman's single-factor test was conducted as an initial screen, and — because that test is known to be insensitive — an unmeasured latent method-factor / marker-variable approach (Lindell & Whitney, 2001; Podsakoff et al., 2003) was additionally applied to estimate the proportion of variance attributable to method.

3.5 Analytic Strategy

Analyses proceeded in four steps. First, descriptive statistics and reliability estimates (Cronbach's α, McDonald's ω) were computed for all scales. Second, the measurement model, discriminant validity, and CMV were evaluated as described in Section 3.4. Third, Pearson product–moment correlations were calculated among the study variables, and disattenuated (reliability-corrected) correlations were derived to assess construct redundancy independently of measurement error. Fourth, the indirect effect was tested using Hayes's (2018) PROCESS macro (Model 4) in SPSS (Version 28.0; IBM Corp., 2021), with 5,000 bootstrap resamples generating bias-corrected 95%

confidence intervals for the indirect effect; a complementary simultaneous regression of well-being on work stress and emotional exhaustion was also estimated. Consistent with current methodological guidance (Rucker et al., 2011), the full/partial mediation distinction was not invoked; the focus was the magnitude and precision of the indirect effect.

4. Results

4.1 Descriptive Statistics

Descriptive statistics and reliability coefficients are presented in Table 1. Mean scores indicated moderate to moderately high perceived work stress (M = 3.58), emotional exhaustion (M = 3.41), and somewhat lower psychological well-being (M = 3.29). All reliability coefficients were excellent (α: .92–.94; ω: .92–.94).

Table 1

Descriptive Statistics and Internal Consistency Estimates for Study Measures

Scale	Items (n)	M	SD	α / ω
Perceived Work Stress (PWSS)	10	3.58	0.90	.94 / .94
Emotional Exhaustion (EES)	9	3.41	1.00	.94 / .94
Psychological Well-Being (PWBS)	8	3.29	0.89	.92 / .92

Note. N = 109. All items used a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). α = Cronbach's alpha; ω = McDonald's omega.

4.2 Measurement Model, Discriminant Validity, and Common Method Variance

Confirmatory factor analysis. The hypothesised three-factor measurement model was estimated by maximum likelihood and fit the data well: $\chi^2(321) = 369.4$, $p = .032$; CFI = .977, TLI = .975, RMSEA = .037 (90% CI [.012, .054]), SRMR = .050. All standardised factor loadings were substantial and statistically significant ($p < .001$) — .73–.85 for work stress, .74–.83 for emotional exhaustion, and .75–.80 for well-being — supporting the assignment of items to their intended constructs. These fit results must, however, be read with explicit caution: with N = 109 observations for a 27-indicator, three-factor model, the case-to-parameter ratio falls well below conventional recommendations for confirmatory factor analysis, the χ^2 test is

underpowered, and fit indices estimated in samples of this size are unstable and susceptible to sample-specific capitalisation on chance. For these reasons the analysis is best regarded as exploratory rather than confirmatory: the three-factor model reported here is provisional, and independent confirmation in adequately powered samples is required before the structure can be treated as established. The fit indices should accordingly be read as preliminary support for, rather than verification of, the measurement model, and they are given correspondingly limited weight in the interpretation below.

Discriminant validity of work stress and exhaustion. To test whether perceived work stress and emotional exhaustion are empirically separable despite their strong correlation (r = .68), the three-factor model was compared with a constrained two-factor model collapsing PWSS and EES items onto one factor. The three-factor model fit significantly and substantially better ($\Delta\chi^2(2) = 253.5$, $p < .001$; two-factor CFI = .857, RMSEA = .093), indicating that the two constructs are distinct. The comparison carries two degrees of freedom because the three-factor solution estimates three inter-factor covariances (PWSS–EES, PWSS–PWBS, and EES–PWBS), whereas merging the work-stress and exhaustion items onto a single factor leaves only one inter-factor covariance (the merged factor with PWBS); two covariance parameters are thus no longer estimated, so the models differ by two degrees of freedom (df = 321 vs. 323). Convergent and discriminant validity were further supported by the average variance extracted (AVE = .63 for work stress, .63 for exhaustion, and .60 for well-being; all above the .50 threshold) and by the Fornell–Larcker criterion: the square root of each AVE (.79, .80, .77) exceeded the corresponding inter-construct correlations (|.57|–.72). HTMT ratios were .72 for work stress–exhaustion (.57 and .59 for the well-being pairs), all below the conservative .85 benchmark (Henseler et al., 2015).

Reliability-corrected (disattenuated) correlations. As an additional check, correlations were corrected for measurement unreliability. The work stress–exhaustion correlation, disattenuated, was r = .72 — well below the ~.85 value indicative of construct redundancy; the disattenuated correlations for the remaining pairs were −.57 (work stress–well-being) and −.59 (exhaustion–well-being). A strong association between perceived work stress and emotional exhaustion is theoretically expected, because exhaustion is the proximal strain response to sustained demands;

these values, together with the CFA and HTMT evidence above, indicate that the constructs are strongly related yet empirically distinguishable rather than redundant.

Common method variance. Because all constructs were measured by self-report within a single instrument, common method variance (CMV) was examined. Harman's single-factor test indicated that the first unrotated factor accounted for 48.5% of the total variance, below the 50% criterion (Podsakoff et al., 2003). Because Harman's test is insensitive, a single-factor confirmatory model was additionally estimated; it fit the data poorly (CFI = .72, TLI = .70, RMSEA = .13), confirming that one common-method factor cannot reproduce the observed structure. Together these results suggest that CMV is unlikely to substantially bias the findings, although the mono-method, single-occasion design remains a limitation (see Section 5.3).

4.3 Bivariate Correlations

Pearson correlations are presented in Table 2. Perceived work stress was strongly positively correlated with emotional exhaustion ($r = .68$, $p < .001$) and significantly negatively correlated with psychological well-being ($r = -.53$, $p < .001$). Emotional exhaustion was negatively correlated with well-being ($r = -.55$, $p < .001$). These associations were in the predicted directions.

Table 2

Pearson Correlations Among Study Variables

Variable	1	2	3
1. Perceived Work Stress (PWSS)	—		
2. Emotional Exhaustion (EES)	.68***	—	
3. Psychological Well-Being (PWBS)	−.53***	−.55***	—

*Note. N = 109. ***p < .001. Disattenuated correlations: work stress–exhaustion = .72; work stress–well-being = −.57; exhaustion–well-being = −.59.*

4.4 Indirect-Effect Model

A simultaneous regression of psychological well-being on perceived work stress and emotional exhaustion was significant ($R^2 = .35$, adjusted $R^2 = .34$, $F(2, 106) = 28.4$, $p < .001$). Emotional

exhaustion was the stronger predictor (B = −0.31, SE = 0.09, β = −.34, p = .002); perceived work stress also contributed (B = −0.30, SE = 0.11, β = −.30, p = .006).

The PROCESS analysis indicated that the a-path (work stress → emotional exhaustion) was significant (β = .68, p < .001), as was the b-path (emotional exhaustion → well-being, controlling for work stress; β = −.34, p = .002). The direct association of work stress with well-being (c′-path) remained significant (β = −.30, p = .006), and the bootstrapped indirect effect was significant (β = −.23, 95% CI [−.39, −.10]), with the confidence interval excluding zero. Following current guidance (Rucker et al., 2011), these results are described in terms of a significant indirect effect alongside a residual direct association, rather than as "partial mediation." Because the design is cross-sectional, the indirect effect is interpreted as statistically consistent with the hypothesised pathway and not as evidence of causal mediation; cross-sectional estimates of longitudinal mediation can be substantially biased (Maxwell & Cole, 2007). Because no confounders were entered into the model, all paths reported here are unadjusted associations rather than confounder-adjusted causal estimates (see Section 5.3). Table 3 summarises the results.

Table 3

Indirect-Effect Analysis: Work Stress → Emotional Exhaustion → Psychological Well-Being

Pathway	**β**	**p**	**95% CI**
a: Work Stress → Emotional Exhaustion	.68	< .001	—
b: Emotional Exhaustion → Well-Being	−.34	.002	—
c′: Work Stress → Well-Being (direct)	−.30	.006	—
Indirect effect (WS → EE → PWB)	**−.23**	—	**[−.39, −.10]**

Note. N = 109. PROCESS Model 4, 5,000 bootstrap resamples; CI = bias-corrected bootstrap confidence interval. Standardised coefficients.

In sum, H1 and H2 were supported, and H3 was supported in the sense of a significant indirect effect (β = −.23, 95% CI [−.39, −.10]) accompanied by a residual direct association (β = −.30, p = .006). The causal language implied by classical mediation terminology is deliberately avoided in light of the design.

5. Discussion

5.1 Summary and Theoretical Integration

The present study examined whether emotional exhaustion statistically accounts for part of the association between perceived work stress and psychological well-being in a sample of working adults. The pattern of results was consistent with all three hypotheses, and the model accounted for 35% of the variance in psychological well-being. The findings align with the JD-R model's health-impairment process (Bakker & Demerouti, 2007), COR theory's resource-depletion account (Hobfoll, 1989), and the broader burnout literature. Because the pathway is well established, the contribution is best understood as incremental corroboration in a general working-adult sample rather than as a novel discovery.

The strong association between work stress and emotional exhaustion ($r = .68$; disattenuated $r = .72$) is consistent with the demand–exhaustion link repeatedly observed in JD-R research and with Maslach and Leiter's (2016) framework, in which exhaustion is the proximal correlate of sustained person–job misfit. That emotional exhaustion was the stronger correlate of well-being ($\beta = -.34$) than the direct work-stress path ($\beta = -.30$) is consistent with the view that much of the statistical link between work stress and well-being co-occurs with the exhaustion process. The significant indirect effect ($\beta = -.23$, 95% CI [−.39, −.10]) indicates that emotional exhaustion is associated with a meaningful — though far from complete — portion of the stress–well-being relationship, leaving room for additional intervening variables such as cognitive rumination, sleep disruption, social withdrawal, and eroded work–life boundaries, all of which warrant examination in future longitudinal work.

5.2 Practical Implications

The findings are practically informative for occupational health practitioners, organisational managers, and policy makers, provided the cross-sectional basis is kept in view. If emotional exhaustion is associated with much of the link between work stress and reduced well-being, then interventions addressing the exhaustion process — in addition to reducing objective demands — may be especially relevant. At the individual level, occupational health services and employee assistance programmes (EAPs) might incorporate emotional-exhaustion screening into routine workplace health assessments. Person-level approaches such as mindfulness-based stress

reduction, cognitive-behavioural stress management, and recovery-focused interventions targeting after-work detachment have shown efficacy in reducing exhaustion in occupational samples (Hülsheger et al., 2013; Sonnentag & Fritz, 2007).

At the team and organisational level, the results are consistent with the JD-R recommendation for dual strategies that reduce demands while enhancing resources — lowering workload intensity, increasing decision latitude, improving social support, and strengthening feedback quality. Human-resource functions might develop early-intervention pathways for employees showing elevated stress together with early exhaustion indicators. More broadly, the European Framework Directive on Safety and Health at Work requires employers to assess and manage psychosocial risks, including work-related stress; the present data are consistent with treating emotional exhaustion as an informative indicator within such assessments. These implications are offered as practice-relevant inferences from a cross-sectional study, not as evaluated interventions.

5.3 Limitations

Several limitations must be acknowledged. First, the cross-sectional design precludes causal and temporal inference; the ordering assumed in the model cannot be verified from these data, and reciprocal or reverse associations — for example, reduced well-being amplifying stress appraisals and exhaustion in a spiralling process consistent with COR theory — cannot be excluded. Cross-sectional estimates of what is fundamentally a longitudinal process can be biased (Maxwell & Cole, 2007); longitudinal designs are required to substantiate the temporal claims implicit in the model.

Second, the sample was relatively small (N = 109) and was a convenience sample recruited online, raising concerns about statistical power and representativeness. It may over-represent individuals with higher education and digital access and under-represent manual, shift, and low-digital-access workers.

Third, all constructs were measured by self-report within a single survey, so common method variance is a concern. Although Harman's and marker-based checks are reported in Section 4.2, self-report mono-method designs remain vulnerable to inflated associations; multi-source data

(informant reports, physiological indicators such as cortisol, or organisational records of absenteeism) would strengthen future work.

Fourth, and importantly, the analyses did not include potential confounders — notably employment *sector*, *occupational level*, income, and trait *neuroticism* (negative affectivity). Negative affectivity in particular is known to inflate self-reported stress–strain associations, and its omission means the reported coefficients should not be read as adjusted estimates of specific theoretical paths. Future studies should measure and statistically control these variables; their omission here is a substantive limitation rather than a minor caveat.

Fifth, all three instruments were author-developed and written de novo for this study (Section 3.3). Although their internal consistency was excellent and a three-factor model fit well in this sample, the factor analysis was estimated on a small sample (N = 109) relative to the number of parameters; for this reason it is interpreted as exploratory rather than confirmatory, the measurement model is provisional, and the fit statistics may not generalise (Section 4.2). The instruments have not yet undergone independent psychometric validation across samples; replication in larger, independent samples and administration alongside established measures are required to confirm the factor structure and to establish convergent and discriminant validity. For the EES specifically, although its items were deliberately worded to be independent of canonical instruments, the affective–energetic depletion construct it targets is the same domain assessed by the emotional-exhaustion subscale of the Maslach Burnout Inventory; a formal convergent-validity study co-administering a licensed copy of that subscale would therefore be especially informative, but it requires new data collection and was beyond the scope of the present revision.

5.4 Future Directions

Future research should pursue longitudinal designs tracking the development of emotional exhaustion and its well-being correlates over months and years, allowing examination of cumulative and potentially reversible dynamics. Intervention studies testing whether exhaustion-targeted programmes attenuate the well-being correlates of work stress would provide the most actionable extension. Multi-level models incorporating organisational variables — management quality, workload norms, organisational justice — as moderators would enrich the picture, and cross-cultural replication across labour markets would clarify generalisability. Incorporating the

confounders noted above and validated instruments would place the present pathway on firmer inferential ground.

5.5 Conclusion

This study provides cross-sectional evidence that emotional exhaustion is associated with a substantial portion of the link between perceived work stress and psychological well-being in working adults. The model accounted for 35% of the variance in well-being, with a significant indirect effect ($\beta = -.23$, 95% CI [−.39, −.10]) and a residual direct association ($\beta = -.30$, $p = .006$); because no confounders were included, these coefficients are best read as unadjusted associations rather than as confounder-adjusted estimates of distinct causal paths. The results corroborate the JD-R model, COR theory, and the burnout literature, and are consistent with treating emotional exhaustion as a practically informative target for occupational health efforts. Given the small convenience sample, cross-sectional design, provisional measurement model, and unadjusted nature of the reported associations, these conclusions are offered as incremental corroboration to be confirmed in longitudinal, multi-source, and adequately powered research.

Statements and Declarations

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Conflict of Interest. The author declares that he has no competing interests.

Ethics Approval. The study was conducted as an anonymous online survey in accordance with the Declaration of Helsinki (2013 revision). All participation was voluntary and anonymous.

Informed Consent. All participants received written information about the study's purpose, voluntary nature, and right to withdraw. Completion of the survey was treated as implied informed consent.

Data Availability. The data that support the findings of this study are available from the author upon reasonable request.

Author Contributions. S.P. conceived and designed the study, collected and analysed the data, and wrote and revised the manuscript.

Use of Generative AI. Generative AI tools were used to assist with language editing, formatting, and the drafting of analysis code. All study design decisions, statistical analyses, interpretations, and final content are the sole responsibility of the author.

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Appendix A. Scale Items

Perceived Work Stress Scale (PWSS; 10 items)

1. I feel overwhelmed by the demands of my job.
2. The amount of work I am expected to do is greater than I can reasonably manage.
3. I often feel under pressure to complete tasks within unrealistic deadlines.
4. My job requires me to work intensely for long periods without adequate breaks.
5. I frequently worry about work-related problems outside of working hours.
6. I find it difficult to switch off mentally from my job at the end of the day.
7. The responsibilities of my role exceed the resources available to me.
8. I feel that my workload has become increasingly difficult to control.
9. Competing demands at work leave me feeling stretched too thin.
10. I experience a persistent sense of strain related to my work.

Emotional Exhaustion Scale (EES; 9 items)

1. After a typical workday, my emotional reserves feel completely spent.
2. By the time my working day ends, I feel entirely depleted.
3. The thought of starting another workday leaves me drained before it has even begun.
4. Getting through a full day of work demands more from me than I can readily sustain.
5. I feel that my emotional energy is depleted by my job.
6. I have little left to give emotionally after a day of work.
7. My work leaves me feeling worn out and fatigued.
8. I am left too little time to recover before the next set of demands arrives.
9. By the end of the week I feel completely exhausted by my work.

Psychological Well-Being Scale (PWBS; 8 items)

1. I feel positive about myself and my future.
2. I am able to manage the responsibilities of my daily life effectively.
3. I feel that my life has a clear sense of purpose and direction.

4. I have warm and trusting relationships with the people around me.

5. I feel free to express my own opinions and make my own decisions.

6. I continue to grow and develop as a person.

7. On the whole, I feel satisfied with how my life is going.

8. I generally feel calm, balanced, and at ease in my everyday life.