Association Between Burnout and Turnover Intention Among Healthcare Providers: A Systematic-Review and Meta-Analysis

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Abstract
Primary healthcare workers are the backbone of accessible medical and public health services, especially under the pressure of a vast population and escalating healthcare demands.(1) In recent years, the surge in demand for frontline care has led to a troubling rise in job burnout among these professionals. The strain of excessive workloads—exacerbated by the COVID-19 pandemic—has pushed many to their limits, resulting in high turnover rates that now threaten to derail the momentum of healthcare reform.(2,3)

INTRODUCTION

Job burnout is defined as the gradual erosion of emotional and physical energy caused by sustained exposure to workplace stress. It is a complex, multidimensional condition encompassing emotional exhaustion—where mental resources feel depleted—personality disintegration, which manifests as detachment from work and strained interpersonal relationships, and a diminished sense of accomplishment, where individuals feel incapable of performing tasks effectively.(4) The most widely accepted framework for understanding burnout comes from Maslach et al., who conceptualized it as a psychological syndrome triggered by chronic stressors, structured around these three core dimensions.(1,5)

Estimates of burnout prevalence remain inconsistent, largely due to varying definitions and divergent assessment methodologies.(6) Beyond its diagnostic ambiguity, burnout poses serious health risks. It often overlaps with symptoms of depression.(7) Moreover, it has been linked to cardiovascular conditions and other physical health issues.(8) On the professional front, burnout is associated with deteriorating job performance.(9) It also contributes to increased employee turnover, further straining organizational stability.(10)

Staff shortages caused by job burnout among primary medical staff has become a global problem esepcially after the COVID-19 pandemic.(11) One study estimated that the global shortage of medical providers, such as nurses and midwives, was 7.2 million in 2013, and predicted a sharp increase to 12.9 million by 2035.(12)

According to studies of healthcare professionals, turnover intention is one outcome of job burnout.(13,14) Turnover intention is an individual's deliberate desire to quit their current job within a certain time period, and is a strong precursor of departure.(12)

Although numerous studies have investigated the relationship between burnout and turnover intention, a notable variety in reported severity and prevalence are noted. This is true especially when considering that the scale of these studies covers China(14–28,29) and other Asian countries such as Japan(30); South Korea(31), Thailand(32), and Oman(33,34). Relevant reports from

European countries such as Belgium[35,36], Italy[37], Poland[38], Sweden[39,40], and the Netherlands[41,42] in addition to USA[43,44] and Africa[45].
Up to our knowledge, no systematic-review and meta-analysis have previously investigated the association between burnout and turnover intentions among healthcare providers as a whole. A 2022 meta-analysis dedicated to nurses was published which explored and stressed on the association between burnout and turnover intention.[46] The current systematic-review and meta-analysis aimed to explore the pooled severity and prevalence of burnout and turnover intentions and the association between them among healthcare providers.

METHODS

Study selection

We included quantitative observational studies that assessed the association between occupational burnout (exposure) and turnover intention (outcome) among healthcare workers (including nurses, physicians, resident physicians, and allied health professionals) in any clinical setting. Burnout had to be measured using a validated instrument, primarily the Maslach Burnout Inventory (MBI).[47] Turnover intention had to be measured using a validated scale (for example, the Turnover Intention Scale by Michael et al.[48] and its revisions by Li et al.'s[49] six-item tool, the Turnover Intention Scale)[50], or as an explicit binary intention-to-leave item. We imposed no restrictions on publication year, language, or study location. Both cross-sectional and cohort designs were eligible.
We excluded qualitative studies, interventional trials without relevant baseline observational data, case reports, reviews, editorials, conference abstracts without extractable data, and studies that did not report both burnout and turnover intention, or that used non-validated or ad-hoc measures without sufficient detail to appraise validity. For duplicate publications with overlapping data, we retained the most complete or most recent report.

Data sources and Search strategy

We searched PubMed and Scopus from database inception through 31 July 2025. The strategy combined controlled vocabulary and free-text terms related to burnout (e.g., "burnout," "Maslach Burnout Inventory"), turnover intention (e.g., "turnover intention," "intent to leave," "intention to quit"), and healthcare personnel (e.g., "nurs*," "physician*," "clinician*," "healthcare worker*"). No language or date restrictions were applied. The full search strings for each database are was as follows:
(("Health Personnel"[Mesh] OR "healthcare professional*" OR "health care professional*" OR "healthcare worker*" OR "health care worker*" OR "healthcare provider*" OR "health care provider*" OR "Healthcare staff" OR "Health care staff" OR "Health worker*" OR "Nurses"[Mesh] OR Nurse OR Nursing OR "Nursing Staff, Hospital"[Mesh] OR "Physicians"[Mesh] OR Physician* OR "medical specialist*")) AND (("burnout, professional"[Mesh] OR burnout[Title/Abstract])) AND (("turnover intention"[Title/Abstract] OR "intention to leave"[Title/Abstract] OR "intention to quit"[Title/Abstract] OR "intent to quit"[Title/Abstract] OR "intent to leave"[Title/Abstract] OR "staff turnover"[Title/Abstract]) OR ("job performance"[Title/Abstract] OR "work performance"[Title/Abstract] OR "employee performance"[Title/Abstract]))
All identified records were imported into Rayyan for de-duplication and screening. Screening was performed in two stages: first by title and abstract, followed by full-text review. At the full-text stage, studies were included if they met all predefined eligibility criteria. Reasons for

exclusion were recorded, including wrong population, wrong design, lack of validated measurement of burnout or turnover intention, or insufficient data. A PRISMA flow diagram summarizes the selection process (**Figure 1**). The current review included a total of 33 studies fullfiling our selection criteria.

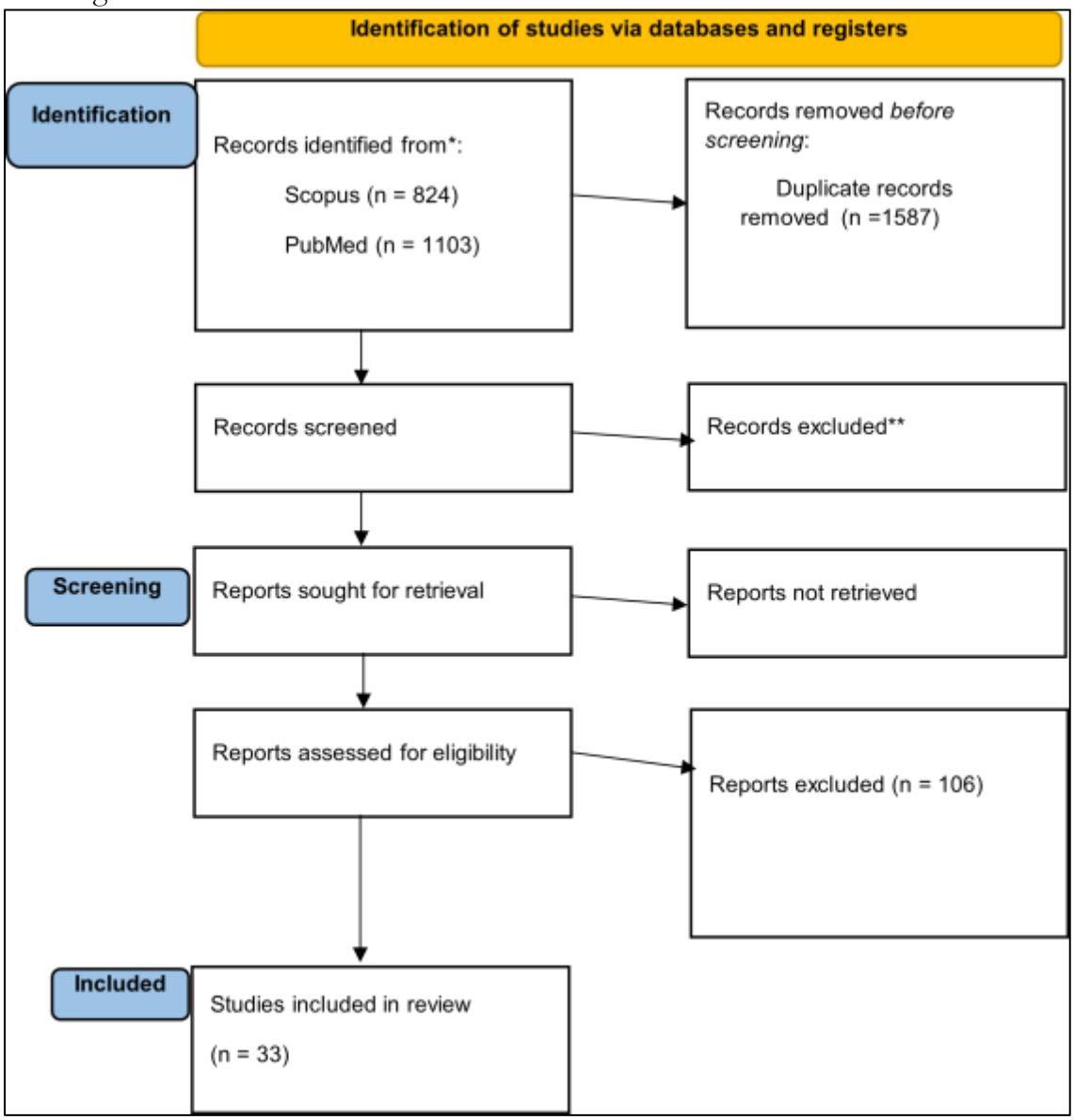

Figure 1: *PRISMA flow diagram of study selection process.*

Quality assessment

The NIH Quality Assessment tool for Cohort Studies was utilized for risk of bias (ROB) assessment. This tools evaluates a study's ROB in various aspects such as clearly specifyin the study population, the study time frame, and definition of measurements. All included studies had fair level of quality on assessment (**Supplementary Table S1**).

Data Synthesis and analysis

The current review features two main measurements: Burnout and Turnover intention. All included studies assessed burnout using validated versions of the Maslach Burnout Inventory (MBI). The scale has a varying number of questions which differs between validated versions.

As per MBI, burnout event (yes/no) is defined in terms of three domains: emotional exhaustion, depersonalization, and professional accomplishment. Each of these domains is scored from 7-points likert scale questions (range: 0 to 6 points) where high emotional exhaustion (yes/no), high depersonalization (yes/no), and low professional accomplishment (yes/no) are all required to define burnout (yes/no). As for turnover intention, included studies have utilized validated scales such as Micheal et al.,[48] Li et al.,[49] Turnover Intention Scale (TIS),[50] or single item questions for purposes of participant stratification.

Although all validated, the number of items as well as the scoring of each domain weren't globally unified. Validated, adapted versions of the same assessment tool may have different a varying number of items. Moreover, the total score of a domain have been calculated by either summation of individual items' grades or taking the mean of these grades. Such inconsistencies lead to technical difficulties regarding meta analysis. These challenges were successfully met by transforming all included scores into percentages (%) ranging from 0 to 100%. This simple solution was necessary in order to both allow for a statistically sound analysis and make the findings more convenient and intuitive for interpretation.

Severity scores of burnout domains as well as turnover intention have been extracted as mean and standard deviation (SD). The frequence of burnout events (yes/no) and turnover events (yes/no) were also extracted in relevance to the total sample size. The relative risk of having burnout (yes/no) as a risk factor for evident turnover intention (yes/no) was extracted from multiple papers. More commonly, Pearson's correlation coefficient between burnout severity scores and turnover intention score was reported and extracted. Effect sizes were all appropriately and clearly reported and no conversion in extracted statistics was performed. Our meta-analysis utilized a variety of effect sizes (pooled mean severity, pooled rate of burnout/turnover intention, pooled relative risk of burnout as a risk factor, and pooled correlation coefficients) in order to fulfill the research objectives. Tables and forest plots were used to present our findings. The I^2 statistic was utilized as an estimation of the between-study heterogeneity, with >50% representing substantial heterogeneity and >75% representing considerable heterogeneity. The Cochran's Q statistic was also used for heterogeneity assessment along with significance testing for heterogeneity. Tau^2 was utilized as an estimate of the between-study variance. Meta analysis was conducted via meta package, which is accessible by the R software for statistical computing version 4.2.1.[51,52]

RESULTS

The current review included data from 33 primary articles, summing up a total of 105,931 participants. **Table 1** shows a summary of included studies. The most frequent country of origin among included studies was China with nearly half the studies being conducted therre (n: 16/33). Asia, Europe, Africa, and North America are all represented in our sample. The largest scale study included was the one by Dall'Ora et al.[53] where more than 31 participants from 12 European countries were recruited. Notably high sample sizes also came from studies published in the USA[43] and Sweden.[40] These three studies alone represent more than 50% of all participants involved in all our 33 included studies. Except for a single study published in 1999,[42] included studies were published between 2011 and 2025. The general tone in the conclusions reported was stressing on the magnitude of burnout and turnover intention as well as the association between them. This is true irrespective of the research country, year of publication, or target healthcare provider population specialty.

Table 1. Summary of the included studies.

Study ID	Country	Study design	Sample size	Setting	Profession	Speciality	Type of patients	Age (mean ± SD)	Gender (M:F)	Conclusion
Taira (2025)	Japan	Cross-sectional	1754	Public Health Centers (PHCs) across Japan	Mixed: public health nurses (31.2%), clerical workers (35%), and others (physicians, pharmacists, veterinarian)	mixed	NA	41.9 ± 12.9	710:1044	Addressing burnout is essential to reduce job-quitting intentions among Japanese PHC staff members
Chen (2024)	China	Cross-sectional	1132	Township hospitals, village clinics, community health service centers, community health service stations, and outpatient departments	Physicians (51.7%), pharmacists (6.3%), nurses (21.6%), medical managers (20.5%)	Mixed	NA	39.9 ± 8.5	515:617	Social support and psychological capital reduce burnout and turnover intention, highlighting their role in improving staff retention
Feng (2023)	China	Cross-sectional	3236	Community health service institutions	General practitioners	Primary care / family medicine	NA	37.2 ± 7.6	1170:2066	Burnout and turnover intentions are prevalent among Chinese GPs; job satisfaction mediates the effects of burnout on turnover
Daghash (2022)	Belgium	Cross-sectional	293	Residential care centers	Licensed practical nurses (55%), registered nurses (23%), healthcare staff (22%)	Mixed	Elderly residents in Flemish residential care settings	35.7 ± 10.45	40:253	Higher workload was associated with increased turnover intention. Emotional exhaustion negatively impacted job satisfaction
Zhang (2021)	China	Cross-sectional	3236	Community healthcare institutions	General practitioners	Primary care / family medicine	NA	37.1 ± 7.1	1170:2066	Burnout had a direct positive effect on turnover intention. Professional identity had an indirect negative effect on turnover intention through the mediating effect of job satisfaction and burnout

Chen (2021)	China	Cross-sectional	1152	Community health centers, village clinics, and outpatient departments	Doctors (52.3%), nurses (21.1%), pharmacists (6.4%), and administrative staff (20.2%)	Mixed	NA	40.17 ± 8.46	520:632	The improvement of psychological capital and social support and the reduction of job burnout may play an important role in reducing turnover intention of primary medical staff
Yi (2024)	China	Cross-sectional	322	Tertiary hospitals	Registered nurses	General nursing (excluding administrative roles)	NA	32.04 ± 5.47	70:252	Moral resilience among nurses is negatively associated with turnover intentions, with this effect fully mediated by the depersonalization dimension of job burnout. Enhancing
Liu (2025)	China	Cross-sectional	744	Six Tertiary and six secondary hospitals	Registered nurses	Operating Room (OR) nursing	NA	34.62 ± 6.41	NA	Turnover intention among OR nurses was high and inversely associated with professional mission, identity, and burnout. Strengthening these factors may reduce intent to leave
Petrosino (2024)	Italy	Cross-sectional	160	Seven inpatient Critical Care Units (CCUs) in a university hospital	Registered nurses	Critical care (including ICU, Emergency Surgery, Emergency Medicine, Neonatal ICU, Post-op ICU, Cardiac ICU)	Critically ill inpatients	38.06 ± 10.73	73:87	Emotional exhaustion and poor work-related quality of life significantly increase nurses' intention to leave critical care units, with sleep disturbance partially mediating this relationship, especially in males
Yun (2023)	South Korea	Cross-sectional	1,981	Nationwide; training hospitals across South Korea	Physicians	Medical interns and residents (i.e., various specialties under training)	NA	NA	1102:879	Workplace violence, burnout, and depressive symptoms are strongly associated with thoughts of quitting medical training among interns and residents in Korea, with emotional exhaustion and worker-on-worker verbal abuse being key mediators
Ren (2023)	China	Cross-sectional	405	Five high-level tertiary hospitals	Nurses	General nursing (novice nurses, <3 years' experience)	NA	24.7 ± 1.79	50:355	Workplace bullying significantly increases novice nurses' turnover intention, with psychological empowerment and job burnout acting as key

									mediators
Malinowska (2023)	Poland	Cross-sectional	1,509	21 multi-profile, state-owned hospitals with 24-hour duty	Nurses	Mixed	Inpatients in internal medicine and surgical wards	43.99 ± 10.28	38:1471	Nearly 49% of nurses expressed an intention to leave their hospital job. Key predictors included younger age, shorter work experience, higher patient-to-nurse ratios, lower staffing, job dissatisfaction, and higher burnout, particularly emotional exhaustion
Sheng (2023)	China	Cross-sectional	474	One general hospital and one dental hospital	Nurses	Mixed	NA	27.00 ± 3.94	18:456	A supportive practice environment significantly reduces nurses' turnover intention through improved well-being and reduced burnout, especially when perceived organizational support is high
Zhang (2023)	China	Cross-sectional	536	Single hospital	Nurses	Mixed	Inpatients in internal medicine and surgical wards	32 ± 4.7	26:510	Contract employment, working in pediatrics or obstetrics, dissatisfaction with the organization, high burnout, and low wellbeing are significantly associated with higher nurse turnover intention
Bruyneel (2023)	Belgium	Cross-sectional	2,183	Intensive Care Units (ICUs) in acute general hospitals (including university hospitals)	Registered ICU nurses	72.2% were ICU specialist nurses	ICU patients during the 4th and 5th waves of COVID-19	35 ± 14.07	557:1626	After two years of the COVID-19 pandemic, ICU nurses in Belgium experienced high prevalence of burnout and intention-to-leave
Al Sabei (2022)	Oman	Cross-sectional	2,113	21 public and private hospitals	Registered nurses	Mixed	NA	34.9 ± 8.9	266:1818	Interprofessional teamwork significantly reduces nurses' turnover intention, both directly and indirectly, by enhancing job satisfaction and reducing burnout
Opoku (2022)	Ghana	Cross-sectional	375	Teaching Hospital (tertiary referral hospital)	Nurses	Mixed	NA	31.5 ± 5.0	58:317	All dimensions of burnout were significantly associated with intention to quit; addressing burnout may

										improve nurse retention
Sun (2022)	China	Cross-sectional	1,414	Ten training institutions	Medical residents	Mixed	NA	25.7 ± 2.3	573:841	Nearly half of Chinese medical residents in standardized training programs exhibited high or very high turnover intention
Lee (2021)	United States	Cross-sectional	77	Emergency Departments (EDs) — including acute care hospitals, freestanding EDs, and academic/other settings	Registered Nurses	Emergency Nursing	Emergency department patients	40.3 ± 11.2	11:65	Higher emotional exhaustion and lower personal accomplishment were significantly associated with increased intent to leave among emergency nurses
Al Sabei (2020)	Oman	Cross-sectional	207	A regional referral hospital	Nurses	Mixed	Inpatients	34.9 ± 7	13:194	Job satisfaction significantly moderates the relationship between work environment and turnover intention
Zhang (2019)	China	Cross-sectional	207	Tertiary university hospital	Registered Nurses	Mixed	NA	30.92 ± 6.56	NA	Spiritual climate significantly reduces job burnout and turnover intention among nurses, and positively influences job satisfaction
Duan (2019)	China	Cross-sectional	1,257	Nine tertiary public hospitals	Physicians	Mixed	NA	37.4 ± 8.5	674:583	Workplace violence is highly prevalent among Chinese physicians, particularly verbal violence, and is significantly associated with lower job satisfaction, higher burnout, and increased turnover intention
Liu (2018)	China	Cross-sectional	1,761	Nine tertiary public hospitals	Nurses	Mixed	NA	33.1 ± 8.77	60:1701	The turnover intention of Chinese nurses is high, and is significantly associated with workplace violence, burnout, low job satisfaction, and low perceived organizational support
Lu (2015)	China	Cross-sectional	856	20 tertiary and secondary hospitals	Registered Nurses	Mixed	Inpatients	28.5 ± 5.8	5:841	Higher patient–nurse ratios are significantly associated with increased job dissatisfaction and lower perceived quality of care

										among nurses
Nantsupawat (2017)	Thailand	Cross-sectional	1,351	Five hospitals	Registered nurses	Mixed	Inpatients	34 ± 0.27	35:1320	Better nurse work environments were significantly associated with lower rates of job dissatisfaction, intention to leave, and emotional exhaustion among hospital nurses in Thailand
Lagerlund (2015)	Sweden	Cross-sectional	7,412	80 acute care hospitals in Sweden	Registered nurses	Cancer care	Adult inpatients with cancer	40.3 ± 11.0	446:6966	About one-third of cancer care nurses in Swedish hospitals intended to leave their jobs, mainly due to burnout, poor leadership, and insufficient cancer care training. Strong leadership and proper education reduced this risk
Zhang (2014)	China	Cross-sectional	9,698	181 comprehensive hospitals	Nurses	Mixed	Inpatients	Mean ~29.07	283:9415	Better hospital work environments are significantly associated with lower odds of nurse burnout, job dissatisfaction, and intention to leave
Dall'Ora (2015)	12 European countries	Cross-sectional	31,627	Hospitals (medical and surgical units) in each participating country; at least 30 hospitals per country	Registered nurses	Mixed	Inpatients	Mean ~38	2472:29,155	Shifts of ≥12 hours were significantly associated with higher odds of burnout (emotional exhaustion, depersonalization, and reduced personal accomplishment), job dissatisfaction, dissatisfaction with schedule flexibility, and intention to leave. Shorter shifts (<8 h) were linked to more favorable outcomes
Lindqvist (2015)	Sweden	Cross-sectional	11,015	72 acute-care hospitals (medical and surgical departments)	Registered Nurses	Mixed	Adult inpatient (medical and surgical units, not pediatric or outpatient)	Mean ~40.2	701:10,192	Hospital size, not university status or urban location, was modestly associated with better nurse-reported work environment and care quality. However, overall differences were small and of limited practical significance

Kutney-Lee (2013)	United States (Pennsylvania)	Retrospective cohort study	15,302	137 acute care hospitals	Registered Nurses	Acute care	General adult acute care patients	NA	NA	Improvements in nurse work environments were significantly associated with reductions in burnout, intention to leave, and job dissatisfaction among hospital nurses over time
Liu (2012)	China	Cross-sectional	1,104	21 general hospitals	Nurses	Mixed	Adult inpatients	28.55 ± 6.17	24:1078	Better nurse work environments are associated with lower burnout and job dissatisfaction
Meeusen (2011)	Netherlands	Cross-sectional	882	Nationwide; Dutch hospitals and private clinics	Nurse anesthetists	Anesthesia	NA	Mean ~41.5	451:431	Nurse anesthetists' intention to leave their job is significantly predicted by burnout and job satisfaction, which are in turn shaped by work climate, social environment, and certain personality traits
Janssen (1999)	Netherlands	Cross-sectional	156	One general hospital	Nurses (registered nurses, head nurses, nurse aids, and student nurses)	Mixed	NA	34 ± 8.91	14:142	High job content quality reduced turnover intentions, while unmet career expectations and emotional exhaustion increased them

Pooled severity and rate of burnout and turnover intention are presented in **Table 2**. On unified percentage scales, from 0 to 100%, pooled emotional exhaustion had a mean severity of 47.73% (95% CI: 41.3% to 54.2%; **Supplementary Figure S1**) while depersonalization was less pronounced (pooled mean severity: 30.06%; **Supplementary Figure S2**). Professional accomplishment had a pooled mean value of 61.63% (95% CI: 52.5% to 70.75%; **Supplementary Figure S3**). Interestingly, turnover intention had a higher pooled mean value (56.68%; 53.74% to 59.61%; **Figure 2**) than any of the burnout-defining domains. Over all, the pooled prevalence rate of burnout (yes/no) among recruited studies was as high as 29.4% (95% CI: 17.3% to 45.3%; **Figure 3**). Emotional exhaustion was estimated to be significantly affected in 44.2% of all involved participants, compared to 25.4% with depersonalization, and 48.8% suffering a sense of poor professional accomplishment (**Supplementary Figures S4-S6**). The pooled rate of turnover intention was 34.3% (95% CI: 24.3% to 458%; **Figure 4**). It is also notable that a wide range of reported severity levels is noted upon examining visual representation of data. For example, burnout prevalence rate among included studies varies from 2% up to 60% and turnover intentions similarly ranges from 5% to 71%. These findings are to be interpreted with extreme caution due to presence of substantial heterogeneity as indicated by statistically significant Cochrane Q test (p-value: <0.05) and high I^2 estimates (>0.95).

Table 2: *Pooled mean scores and event rates of outcomes (n: 105931 participants, k: 33 studies).*

Outcome	Random model (95% CI)	Q (p-val)	tau2 (95% CI)	I2
Emotional Exhaustion Mean (%)	47.73 (41.28 to 54.19)	8055.368 (<0.01)	205.064 (116.77 to 452.8)	0.998
Depersonalization Mean (%)	30.06 (23.38 to 36.73)	11062.782 (<0.01)	184.595 (100.42 to 447.02)	0.999
Professional accomplishment Mean (%)	61.63 (52.5 to 70.75)	92188.964 (<0.01)	346.065 (188.47 to 830.43)	1.000
Turnover Score Mean (%)	56.68 (53.74 to 59.61)	970.197 (<0.01)	32.984 (17.41 to 85.7)	0.986
Outcome	**Random model (95% CI)**	**Q (p-val)**	**tau2 (95% CI)**	**I2**
Burnout Events	29.4 (17.3 to 45.3)	2869.555 (<0.01)	1.217 (0.64 to 4.96)	0.997
Emotional Exhaustion Events	44.2 (35.7 to 53)	2785.614 (<0.01)	0.258 (0.13 to 1.22)	0.997
Depersonalization Events	25.4 (14.5 to 40.6)	2865.12 (<0.01)	0.505 (0.22 to 9.38)	0.999
Professional accomplishment Events	51.2 (25.6 to 76.2)	6471.472 (<0.01)	1.291 (0.55 to 23.96)	1.000
Turnover Event	34.3 (24.3 to 45.8)	10060.868 (<0.01)	1.272 (0.78 to 2.8)	0.998

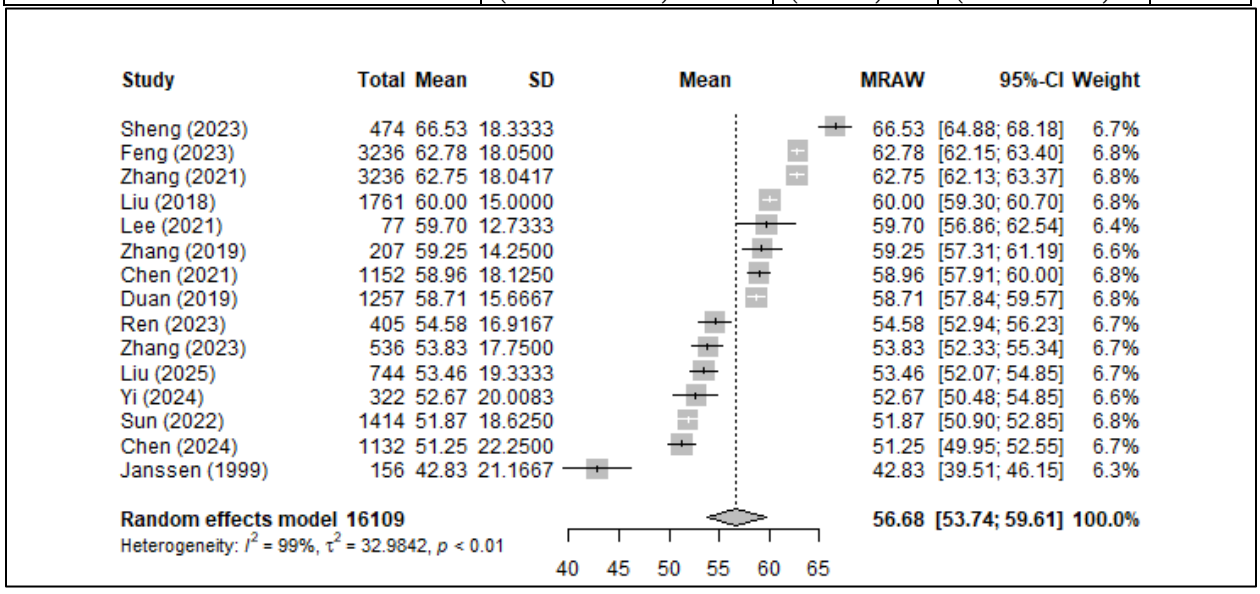

Figure 2: *Forest plot showing pooled mean turnover intetion score (n: 16109, k: 15 studies).*

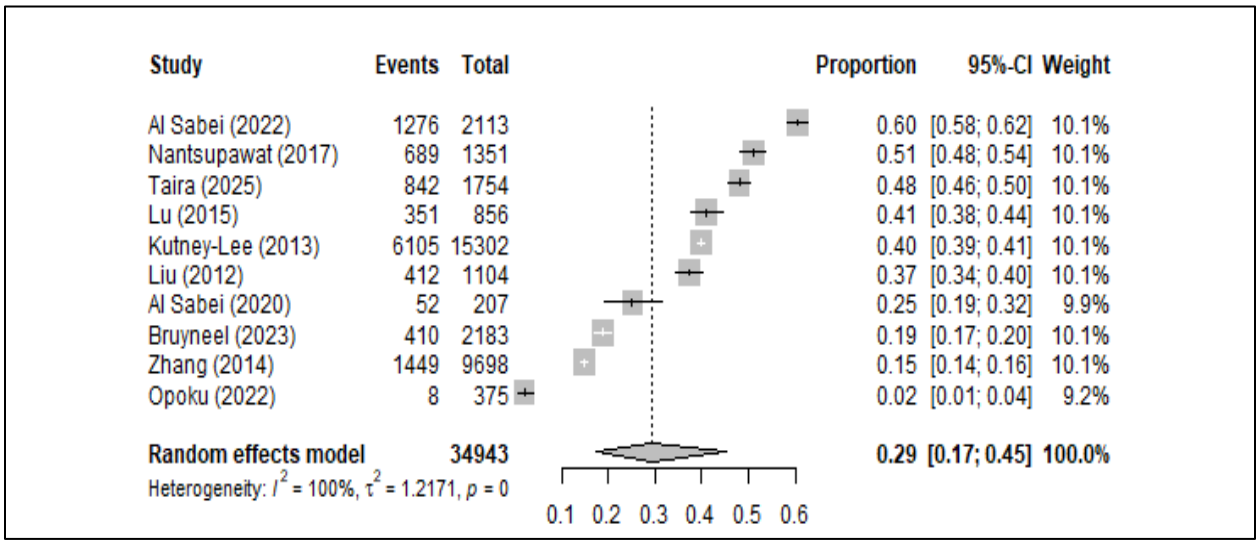

Figure 3: *Forest plot showing pooled rate of burnout (n: 34943, k: 10 studies).*

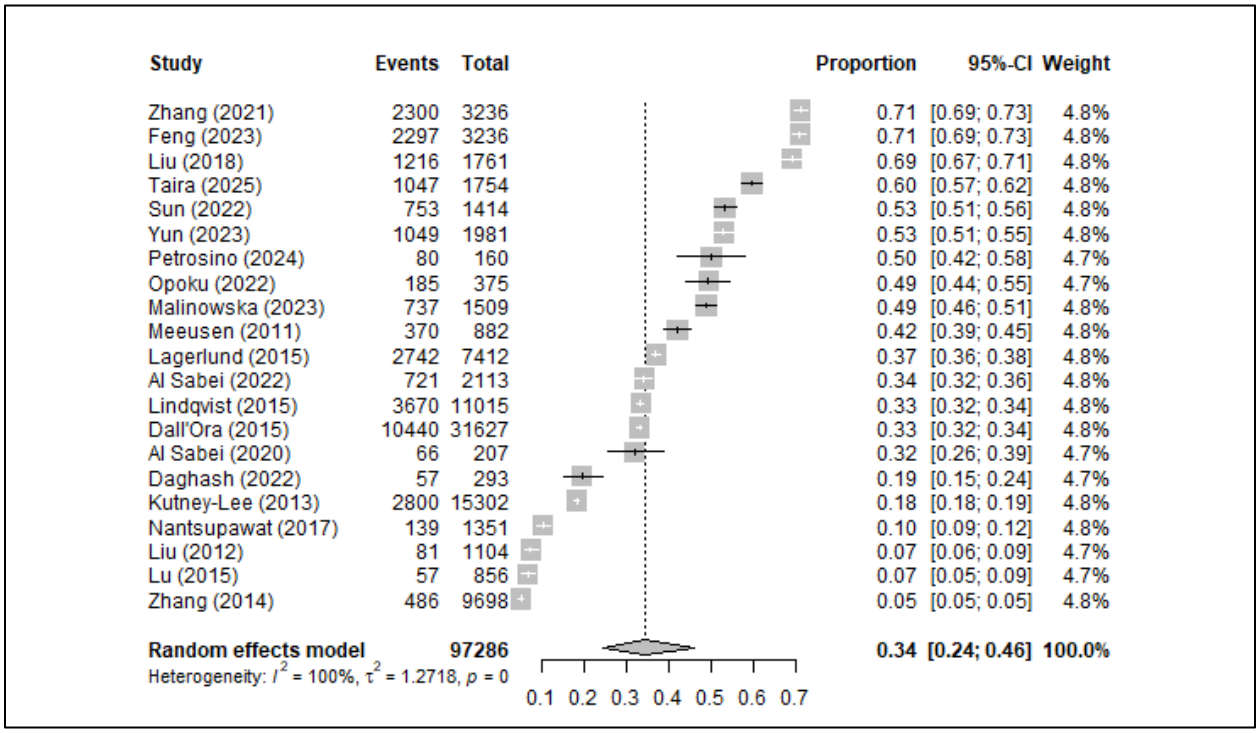

Figure 4: *Forest plot showing pooled rate of turnover intention (n: 97286, k: 21 studies).*

Table 3 highlights pooled estimations of association between burnout and turnover intention. Having burnout (yes/no) is associated with a 2.13 times higher relative risk of having a turnover intention. Hence, data points out to burnout as a risk factor significantly associated with higher odds of turnover (relative risk 95% CI: 1.15 to 3.11). As for direct Pearson's correlation between more severe burnout scores and higher tendency towards turnover, statistically significant correlations were evident. Higher total MBI score was correlated with more severe turnover tendency as per the pooled Pearson's correlation coefficient of 0.36 (95% CI: 0.3 to 0.43). Similarly, turnover intentions correlated with emotional exhaustion (coefficient: 0.41; 0.3 to 0.52) and depersonalization (coefficient: 0.31; 0.23 to 0.39). In

contrast, pooled correlation between professional accomplishment and turnover intentions were not statistically significant (95% CI: -0.28 to 0.03; **Figure 5**).

Table 3: *Pooled hazard ratio and correlation between outcomes.*

Outcome	Random model (95% CI)	Q (p-val)	tau2 (95% CI)	I2
Relative risk	2.13 (1.15 to 3.11)	40.832 (<0.01)	0.754 (0.14 to 14.02)	0.927
Burnout and Turnover	0.36 (0.3 to 0.43)	179.424 (<0.01)	0.012 (0.01 to 0.04)	0.928
Emotional exhaustion and Turnover	0.41 (0.3 to 0.52)	86.314 (<0.01)	0.023 (0.01 to 0.11)	0.919
Depersonalization and Turnover	0.31 (0.23 to 0.39)	84.971 (<0.01)	0.009 (0 to 0.05)	0.941
Personal accomplishment and Turnover	-0.12 (-0.28 to 0.03)	338.476 (<0.01)	0.04 (0.01 to 0.22)	0.982

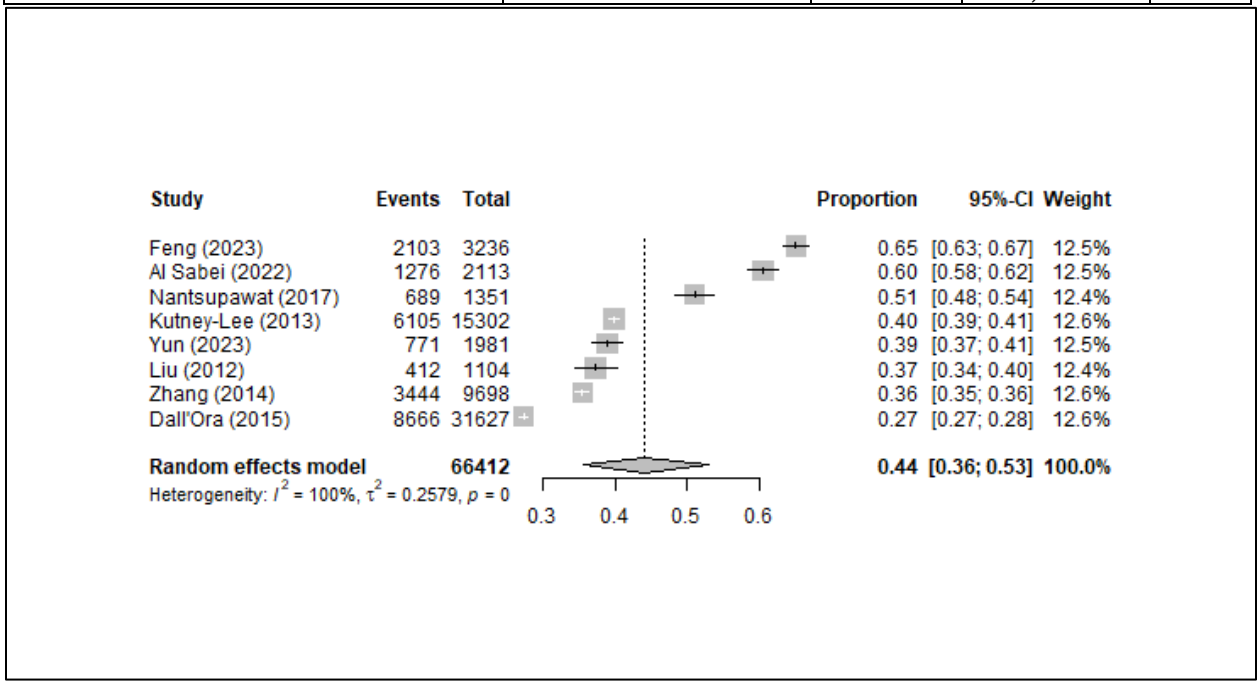

Figure 5: *Forest plot showing correlation between professional accomplishment and turover intention (n: 17176, k: 7 studies).*

DISCUSSION

Findings of the current meta-analysis shed a spotlight on the magnitude of association between burnout and turnover. Although reports from primary research articles are indeed varying and show notable heterogeneity, pooled overall estimated suggest high rates of burnout and even

more frequent turnover tendency. The fact that turnover intention is consistently estimated to be more severe and more common than burnout suggest that burnout is not the sole contributor to turnout intention. However, burnout remains correlated with and a significant risk factor of healthcare providers turnover intentions.

An interesting finding was the lack of a significant correlation between professional accomplishment and turnover intentions in spite of both emotional exhaustion and depersonalization being correlated with turnover intentions. Two possible interpretations come in mind regarding this. One may be explained by the heterogeneity in professional accomplishment severity scores reported by different studies which renders burnout as a whole (yes/no) associated with turnover intentions regardless of the career status of the healthcare provider. This suggests that burnout doesn't show a certain tendency towards specific professional designations among healthcare providers but it rather hits as it goes making its staff loss unpredictable. The other explanation may be assuming that professional accomplishment is not associated with turnover intentions in anyway and thus the higher risk of turnover seen among healthcare providers with burnout may be totally attributed to emotional exhaustion and depersonalization.

Previously published articles point out that the higher risk of turnover seen when burnout is evident may be considered a trans-professional note. Burnout has long been a research interest in other fields and was established as a risk factor for worse turnover intentions among teachers,[53] child welfare workers,[54] and professionals in the hotels and hospitality industry.[55] Regarding healthcare providers, the factors which may explain some of the heterogeneity noted in the current meta-analysis remain to be discovered. A study published in 2022 compared the cultural/geographical background as a potential moderator for healthcare providers' response to burnout (as indicated by turnover intention). Author reports that the relationship between burnout and turnover seem to follow a cultural pattern. Moreover, job satisfaction and organizational commitment also seemed to play a role in determining the healthcare providers' turnover intention.[56]

Compared to the most relevant systematic-review and meta-analysis,[46] the current study offers a better-specification of the inclusion criteria and a wider target population scope. Nonetheless, number of studies fulfilling our selection criteria is smaller but the number of healthcare providers involved is larger than the nurse-specific meta-analysis. This reflects the higher standards of our included studies and the greater external validity of our conclusions.

Future efforts should be directed towards identifying moderator variables which may promote or decelerate the correlation between burnout and turnover. Moreover, such factors may help explain some of the heterogeneity noted between different primary research articles. Cultural background and staff shortages of each target population should be considered as candidate moderator variables. Healthcare policy should further investigate the burnout-turnover phenomena and intervene in accordance to the presence or absence of other factors related.

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Supplementary data

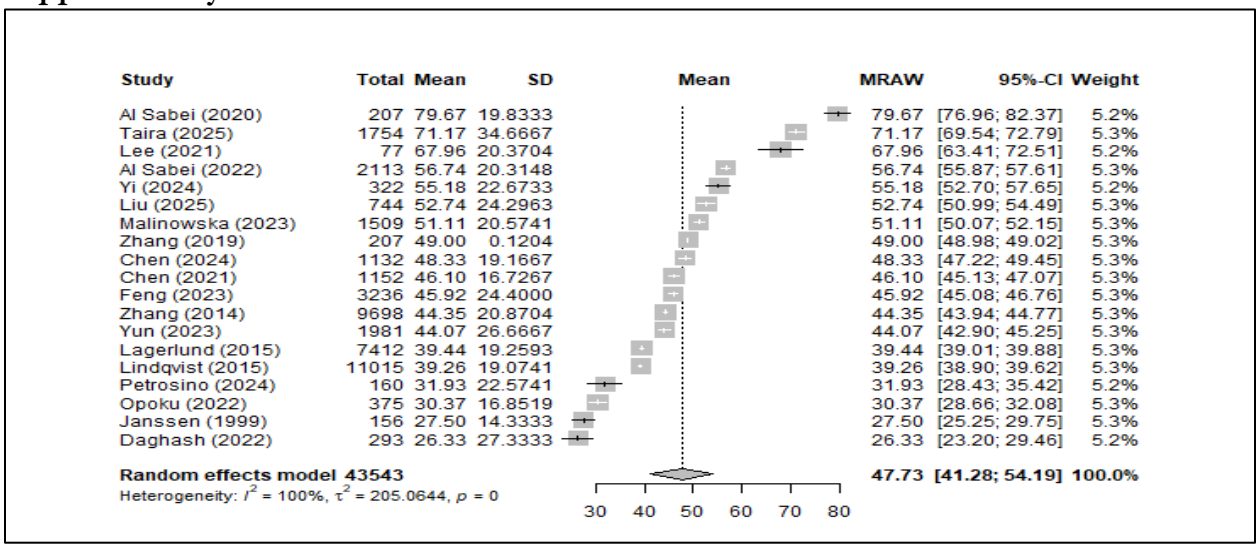

Figure S1: *Forest plot showing pooled mean emotional exhaustion score*

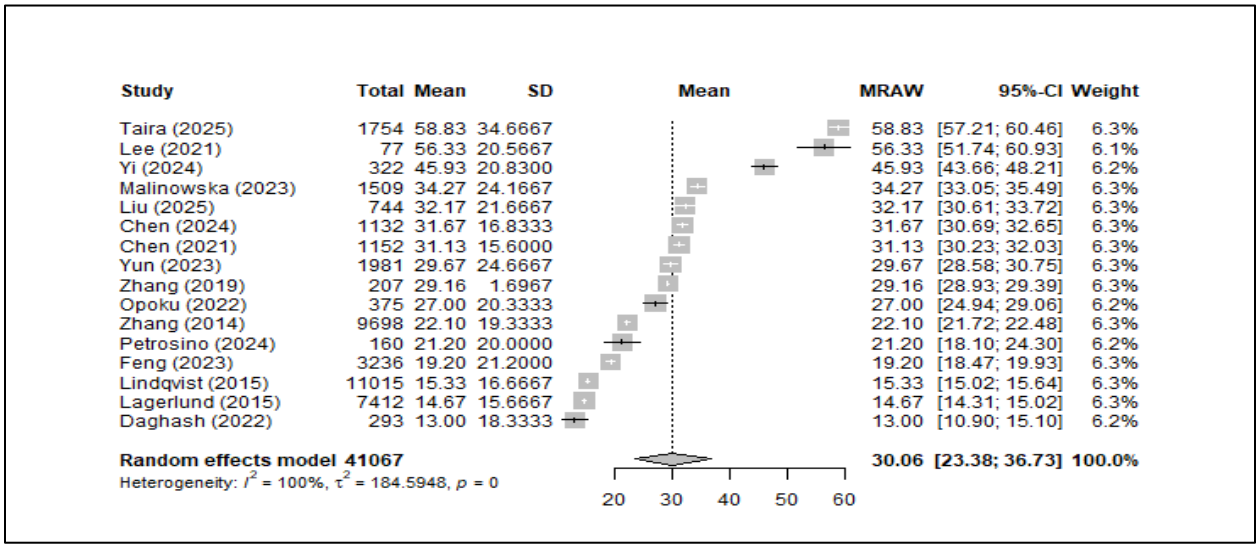

Figure S2: *Forest plot showing pooled mean depersonalization score*

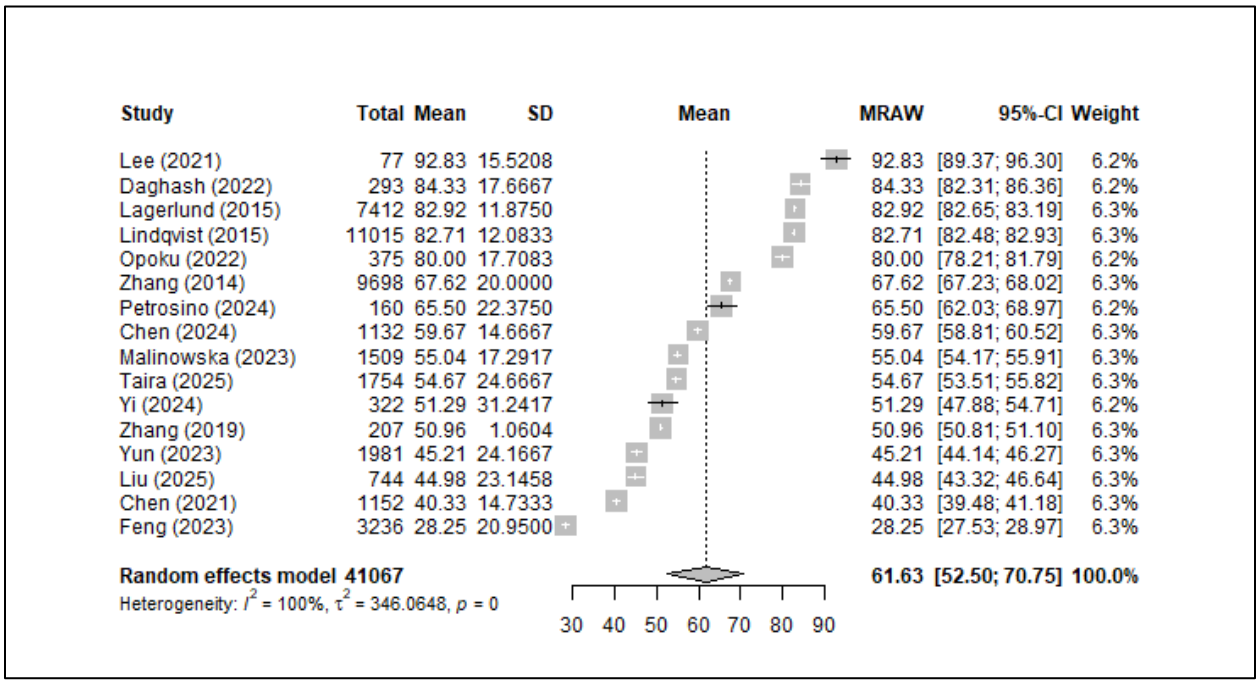

Figure S3: *Forest plot showing pooled mean personal accomplishment score*

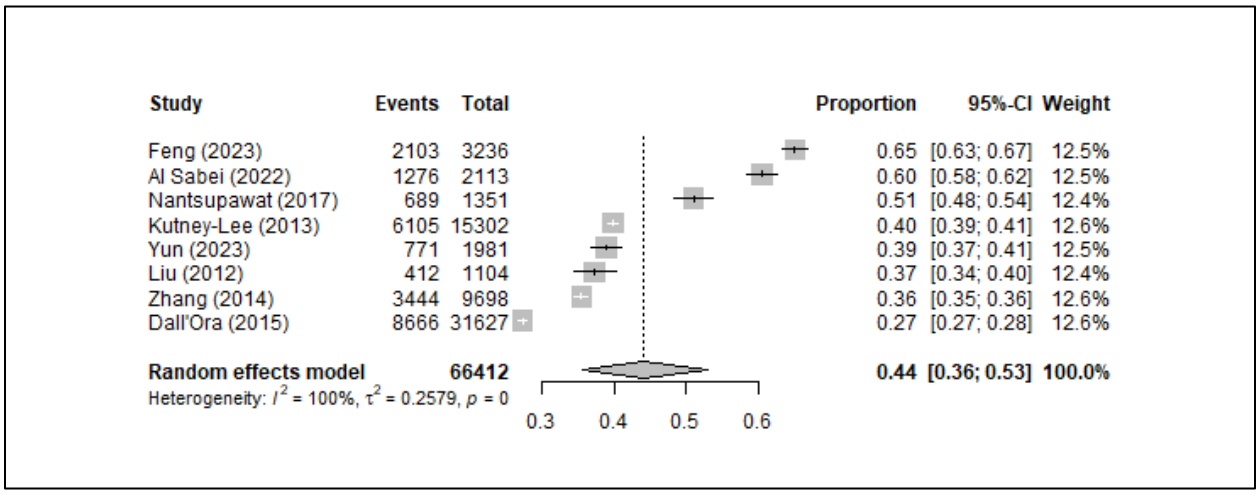

Figure S4: *Forest plot showing pooled rate of emotional exhaustion.*

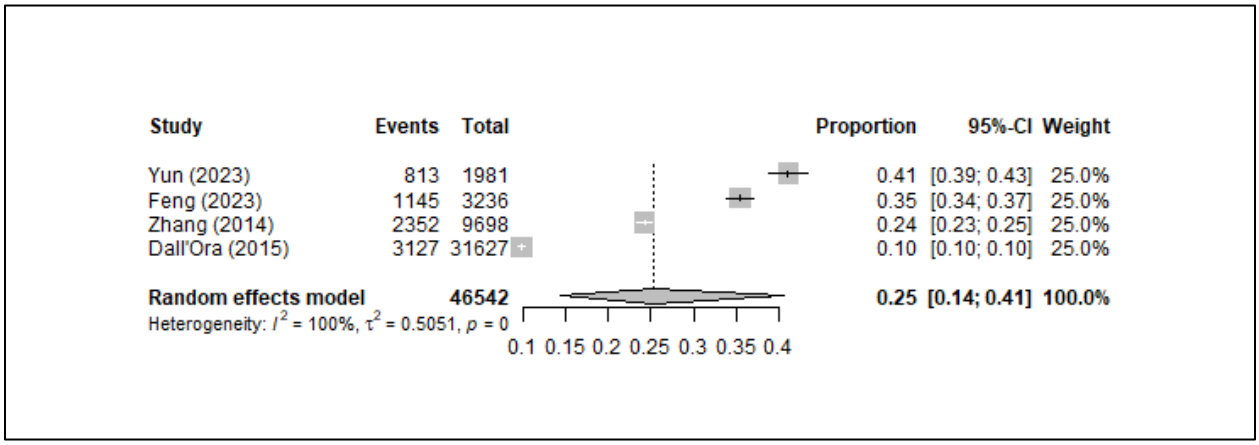

Figure S5: *Forest plot showing pooled rate of depersonalization.*

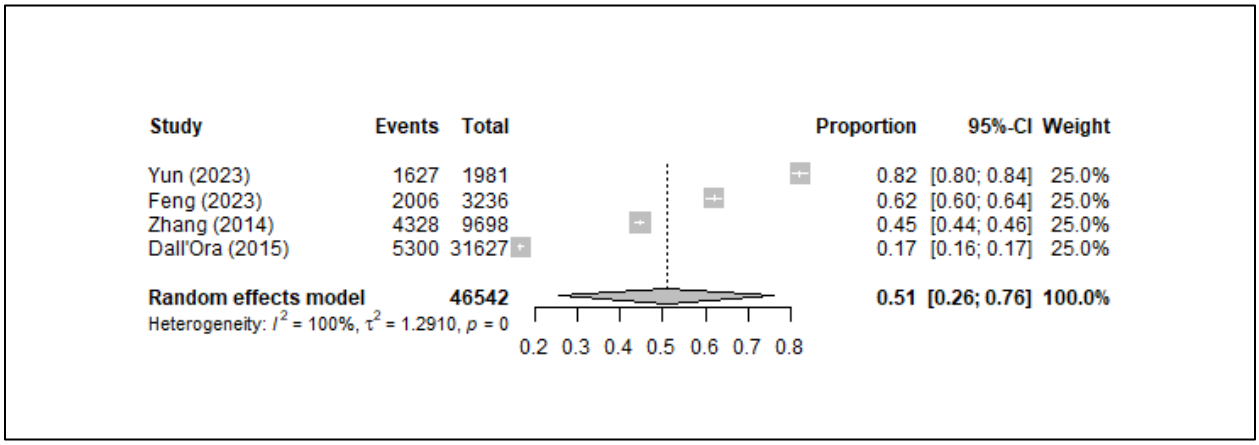

Figure S6: Forest plot showing pooled rate of professional accomplishment.

Supplementary Table S1. Quality assessment of cohort and cross-sectional studies.

NIH Quality Assessment tool for Cohort Studies															
Study ID	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**	**Q10**	**Q11**	**Q12**	**Q13**	**Q14**	**Score**	**Quality**
Taira (2025)	Yes	Yes	No	Yes	NR	NA	NA	No	Yes	No	Yes	NA	NA	Yes	6	Fair
Chen (2024)	Yes	Yes	Yes	NR	NR	NA	NA	Yes	Yes	No	Yes	NA	NA	Yes	7	Fair
Feng (2023)	Yes	Yes	Yes	Yes	NR	NA	NA	Yes	Yes	No	Yes	NA	NA	Yes	8	Fair
Daghash (2022)	Yes	Yes	Yes	Yes	NR	NR	NR	Yes	No	Yes	Yes	NR	NA	Yes	8	Fair
Zhang (2021)	Yes	Yes	Yes	Yes	Yes	NR	NR	Yes	Yes	No	Yes	NR	MA	Yes	9	Fair
Chen (2021)	Yes	Yes	Yes	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Yi (2024)	Yes	Yes	NR	Yes	Yes	NA	NA	Yes	Yes	No	Yes	No	NA	No	7	Fair
Liu (2025)	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	9	Fair
Petrosino (2024)	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	yes	No	Yes	No	NA	Yes	9	Fair

Yun (2023)	Yes	Yes	No	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	No	6	Fair
Ren (2023)	Yes	Yes	Yes	Yes	NR	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	9	Fair
Malinowska (2023)	Yes	Yes	Yes	Yes	NR	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Sheng (2023)	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	9	Fair
Zhang (2023)	Yes	Yes	Yes	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Bruyneel (2023)	Yes	Yes	No	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	7	Fair
Al Sabei (2022)	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	No	Yes	No	NA	yes	8	Fair
Opoku (2022)	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	9	Fair
Sun (2022)	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	9	Fair
Lee (2021)	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	9	Fair
Al Sabei (2020)	Yes	Yes	No	Yes	Yes	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Zhang (2019)	Yes	Yes	Yes	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Duan (2019)	Yes	Yes	Yes	Yes	No	NA	Yes	Yes	Yes	No	Yes	No	NA	Yes	9	Fair
Liu (2018)	Yes	Yes	Yes	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Lu (2015)	Yes	yes	Yes	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Nantsupawat (2017)	Yes	Yes	Yes	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Lagerlund	Ye	yes	Ye	Ye	No	N	N	Ye	yes	No	Ye	No	N	Ye	8	Fair

(2015)	s		s	s		A	A	s			s		A	s		
Zhang (2014)	Yes	Yes	Yes	yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Dall'Ora (2015)	Yes	Yes	Yes	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	fair
Lindqvist (2015)	Yes	Yes	Yes	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Kutney-Lee (2013)	yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	NA	Yes	10	Good
Liu (2012)	Yes	Yes	Yes	Yes	No	NA	NA	Yes	Yes	No	Yes	No	NA	Yes	8	Fair
Meeusen (2011)	Yes	Yes	No	Yes	No	NA	CD	Yes	Yes	No	Yes	No	NA	Yes	7	Fair
Janssen (1999)	Yes	yes	Yes	Yes	No	NA	CD	Yes	Yes	No	Yes	No	NA	No	7	Fair

Q1. Was the research question or objective in this paper clearly stated ?
Q2. Was the study population clearly specified and defined ?
Q3. Was the participation rate of eligible persons at least 50% ?
Q4. Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants ?
Q5 Was a sample size justification, power description, or variance and effect estimates provided ?
Q6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured ?
Q7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed ?
Q8. For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable) ?
Q9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants ?
Q10. Was the exposure(s) assessed more than once over time ?
Q11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants ?
Q12. Were the outcome assessors blinded to the exposure status of participants ?
Q13. Was loss to follow-up after baseline 20% or less ?
Q14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?

Answer by (Yes=1), (No=0), or (*CD, cannot determine; NA, not applicable; NR, not reported=0)
Good = 10-14
Fair = 5-9
Poor = 0-4