

The Relationship between Psychosocial Safety Climate, Work Fatigue, and Turnover Intention among Call Center Workers: A Cross-Sectional Study in Indonesia's Telecommunications Service Sector

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ABSTRACT

Background: Call-center work involves intensive customer interaction, electronic performance monitoring, time pressure, repetitive tasks, and shift schedules, creating substantial psychosocial demands. Psychosocial safety climate (PSC) reflects organizational commitment, priority, communication, and participation in psychological health and safety. **Objective:** This review synthesizes evidence on PSC, work fatigue, and turnover intention relevant to Indonesian call-center work, distinguishing direct Indonesian evidence from broader occupational-health research. **Methods:** A focused narrative review and conceptual synthesis were conducted using peer-reviewed studies, occupational-health guidance, and Indonesian regulatory sources cited in the manuscript. No new primary data were generated. **Results:** Indonesian studies indicate substantial psychosocial burden. Ismar et al. (2011) reported medium-to-high stress among 87.7% of 73 workers, while Tarigan et al. (2023) found very high mental workload in 71.4% and high job stress in 76.6% of 63 workers, with no significant correlation ($p = .563$). Handayani et al. (2018) identified role conflict, inflexible hours, static posture, slow computers, and angry customers as key stressors. Broader evidence supports PSC as an upstream factor related to fatigue, exhaustion, and turnover intention. **Conclusion:** Psychosocial climate, job demands/resources, fatigue, and withdrawal intentions appear interconnected, but direct evidence jointly testing PSC, chronic fatigue, and turnover intention among Indonesian call-center workers remains limited; therefore, causal claims are not warranted.

INTRODUCTION

Call centers are a core interface between telecommunications companies and customers, but the organization of call-center work can expose employees to a dense combination of psychosocial hazards. Agents may be expected to handle high interaction volumes, maintain prescribed emotional displays, meet quantitative service targets, follow scripts, and work under continuous or



near-continuous electronic performance monitoring. These demands may coexist with limited task control, repetitive work, customer hostility, variable schedules, and restricted recovery time. International guidance identifies excessive workload, inflexible or long hours, low job control, poor support, and harmful organizational culture as psychosocial risks, while ISO 45003:2021 recommends systematic management of psychological health and safety within occupational health and safety systems (WHO, 2022, 2024; ISO, 2021).

Evidence from Indonesian call-center settings confirms that psychosocial risk is not merely theoretical. In a cross-sectional study of 73 call-center workers, Ismar et al. (2011) reported that the career-development stressor had the highest prevalence of medium-to-high stress at 87.7%; subjective perception of noise was also associated with the responsibility-to-others stressor (adjusted OR 5.39, 95% CI 1.43–20.24). A risk-assessment study at an Indosat Ooredoo call center identified 15 job stressors and prioritized five: role conflict, inflexible working hours, static work posture, slow computer performance, and angry customers (Handayani et al., 2018). Tarigan et al. (2023), studying 63 workers at another Indonesian call center, found very high mental workload in 71.4% and high job stress in 76.6%; importantly, the correlation between mental workload and job stress was not statistically significant ($p = .563$). These findings show substantial exposure while also cautioning against assuming that one psychosocial factor automatically explains another.

Psychosocial safety climate (PSC) offers an upstream organizational perspective for interpreting these conditions. PSC refers to shared perceptions of organizational policies, practices, and procedures for protecting workers' psychological health and safety, particularly management commitment and priority, organizational communication, and employee participation (Hall et al., 2010). Dollard and Bakker (2010) positioned PSC as a precursor to job demands and resources. In a scoping review, Amoadu et al. (2023) screened 13,711 records and included 93 papers, finding evidence that PSC is related to job demands, job resources, social relations, health, safety, and performance. More recent reviews likewise identify PSC as a useful organizational framework for psychologically healthy workplaces (Amoadu et al., 2024; Dong et al., 2024).

Work fatigue and turnover intention are relevant downstream outcomes in call-center work. The Occupational Fatigue Exhaustion Recovery framework distinguishes chronic work-related fatigue, acute end-of-shift fatigue, and intershift recovery (Winwood et al., 2005, 2006). In call-center samples, burnout, emotional dissonance, work overload, customer-related stressors, and insufficient job resources have been associated with stronger turnover intention, whereas autonomy, supervisor support, and job satisfaction may be protective (Visser & Rothmann, 2008; Zito et al., 2018; Jabutay et al., 2023). Evidence from an Indonesian telecommunications workforce, although not restricted to call-center agents, also reported significant positive associations of work fatigue with job stress and turnover intention (Yulianti & Mulyana, 2026).

Direct Indonesian evidence that simultaneously examines PSC, chronic work fatigue, and turnover intention among call-center workers remains limited. Accordingly, this article does not present a proposed survey or simulated empirical results. Its purpose is to synthesize the available literature, separate direct Indonesian call-center findings from evidence obtained in other sectors or countries, and develop an evidence-based interpretation of how organizational psychosocial climate, fatigue, and turnover intention may be connected in call-center work.

The synthesis therefore focuses on three questions: what psychosocial risks have been documented in Indonesian call centers; what the broader PSC literature shows about organizational climate, demands, recovery, and fatigue; and how fatigue or related strain outcomes are connected with turnover intention in call-center and telecommunications work.

METHODS

1. Review Design and Scope

This article uses a focused narrative review and conceptual synthesis rather than a new empirical survey. The evidence base consists of the peer-reviewed studies, occupational-health standards, public-health guidance, and Indonesian regulatory sources cited in this manuscript. Priority was given to studies that directly examined call-center or telecommunications workers and to foundational or review studies that clarify PSC, fatigue/recovery, and turnover intention. The review is not intended to be an exhaustive systematic review and no pooled effect estimate was calculated.

2. Evidence Extraction and Classification

For empirical studies, the synthesis extracted the study setting, sample size, design, and principal findings relevant to psychosocial risk, fatigue or exhaustion, and turnover intention. Evidence was classified into three levels: direct Indonesian call-center evidence; Indonesian telecommunications evidence not restricted to call-center agents; and international evidence from call-center or other occupational populations. This distinction was used to avoid treating findings from other sectors or countries as if they were direct estimates for Indonesian call-center workers.

3. Synthesis Approach

Findings were organized into three domains: (1) psychosocial hazards and stress in Indonesian call centers; (2) PSC as an upstream organizational factor shaping job demands, resources, recovery, and health; and (3) fatigue, burnout or emotional exhaustion in relation to turnover intention. Numerical results are reported only when they could be traced to the cited source. Contradictory or non-significant findings were retained rather than harmonized into a single directional claim.

4. Ethics and Data Availability

No primary participants were recruited and no new participant-level dataset was created for this review; therefore, new research-ethics approval was not required for the manuscript itself. All numerical information summarized here is derived from the cited published sources.

RESULTS

1. Psychosocial Risk Evidence from Indonesian Call Centers

Ismar et al. (2011) examined 73 call-center workers who had been employed for at least six months. The highest prevalence of medium-to-high stress was reported for the career-development stressor (87.7%). Work tenure was associated with the quantitative-workload stressor (adjusted OR 0.22, 95% CI 0.05–0.90; $p = .03$), while subjective perception of noise was associated with the



responsibility-to-others stressor (adjusted OR 5.39, 95% CI 1.43–20.24; $p = .01$). These results demonstrate that both organizational and environmental conditions may contribute to the stress profile of call-center work.

Handayani et al. (2018) used a risk-assessment approach in an Indosat Ooredoo call center and identified 15 job stressors. Five were prioritized as the most serious: role conflict, inflexible working hours, static work posture, slow computer performance, and angry customers. This pattern is consistent with a work system in which psychosocial, ergonomic, technological, and customer-interaction demands occur simultaneously rather than as isolated hazards.

Tarigan et al. (2023) studied 63 call-center workers using a cross-sectional design. Forty-five workers (71.4%) were classified as having very high mental workload and 49 workers (76.6%) had high job stress. Nevertheless, the Spearman analysis did not identify a statistically significant relationship between mental workload and job stress ($p = .563$). This result is important because it shows that high exposure prevalence and high outcome prevalence do not necessarily establish a direct association between the two variables in a given sample.

2. Evidence on Psychosocial Safety Climate

Hall et al. (2010) developed the PSC-12 from an initial 26-item pool in a pilot sample of 78 participants, producing a 12-item, four-factor measure centered on management commitment, management priority, organizational communication, and participation. In longitudinal education-worker data, Dollard and Bakker (2010) examined samples ranging from 209 to 288 workers nested within 18 schools over 12 months and found that PSC preceded changes in job demands/resources and psychological health outcomes. Although these populations were not call-center workers, the studies establish the organizational-level logic of PSC.

Garrick et al. (2014) extended this evidence using 61 Australian school teachers who completed repeated five-day diaries on three occasions, yielding 915 daily observations. PSC moderated the relationships of job demands and recovery with fatigue and work engagement, suggesting that a stronger psychosocial safety climate can buffer adverse demand effects and amplify the benefits of recovery. Amoade et al. (2023) later synthesized a much broader evidence base: 13,711 records were identified and 93 papers were included in their scoping review. The review linked PSC with job demands, job resources, social relations at work, health, safety, and performance. These findings support PSC as an upstream organizational construct, but they should not be interpreted as direct prevalence estimates for Indonesian call centers.

The link between PSC and withdrawal-related outcomes is also supported outside the call-center sector. Huyghebaert et al. (2018) reported that PSC was negatively related to turnover intentions and work-family conflict through psychological need thwarting in a cross-sectional study, while a second cross-lagged study showed a longitudinal pathway involving psychological need thwarting and burnout. This strengthens the temporal plausibility of PSC-related pathways, although sector-specific replication remains necessary.

3. Fatigue, Exhaustion, and Turnover Intention

Direct call-center evidence consistently points to strain and job resources as important correlates of turnover intention. Zito et al. (2018) studied 318 call-center agents in an Italian

telecommunications company. Emotional dissonance was positively related to turnover intention and negatively related to job satisfaction, while autonomy and supervisor support contributed to job satisfaction and lower turnover intention. Visser and Rothmann (2008), in a sample of 146 call-center employees, found that work overload, lack of career opportunities, skill variety, and emotional labour were important predictors of burnout; burnout had a direct effect on turnover intention, with affective commitment partially mediating that relationship.

Jabutay et al. (2023) tested a stress-strain-outcome model in 605 Filipino call service representatives. Perceived customer unfriendliness predicted emotional exhaustion and emotional dissonance, and the model linked these strain processes with turnover intent. Together with the Italian and South African studies, this supports the view that emotionally demanding customer contact and depleted psychological resources are relevant to withdrawal intentions in call-center environments.

Indonesian telecommunications evidence provides additional, but not call-center-specific, support for the fatigue-turnover pathway. Yulianti and Mulyana (2026) studied 100 employees in the Digital H3i Division of PT Indosat Ooredoo Hutchison Semarang. The reported mean scores were high for workload (3.92), work fatigue (3.44), and job stress (3.51), while turnover intention was lower (2.56). Work fatigue was significantly associated with job stress ($t = 7.399$, $p < .001$) and turnover intention ($t = 3.851$, $p < .001$). The indirect effect of work fatigue on turnover intention through job stress was 0.274 ($t = 5.043$, $p < .001$). These findings are relevant to the telecommunications sector but should not be presented as direct estimates for Indonesian call-center agents.

4. Integrated Evidence Interpretation

Across the evidence base, the most defensible interpretation is an organizational pathway rather than a simple one-variable explanation. PSC may shape the level and management of job demands, resources, communication, participation, and recovery opportunities; these work conditions may influence fatigue, burnout, or emotional exhaustion; and persistent strain may contribute to turnover intention. However, the literature does not yet provide a single Indonesian call-center study that measures PSC, chronic fatigue, and turnover intention together. The synthesis therefore supports theoretical integration and organizational risk management, not a claim that the full pathway has already been empirically demonstrated in Indonesian call centers.

DISCUSSION

The reviewed evidence indicates that call-center psychosocial risk should be understood as a system of interacting organizational, emotional, technological, ergonomic, and temporal demands. Indonesian studies document substantial levels of stress and mental workload, but the findings are not interchangeable. Ismar et al. (2011) identified specific stressors and associated factors, Handayani et al. (2018) prioritized multiple sources of work pressure, and Tarigan et al. (2023) found high mental workload and high stress without a statistically significant association between them. This heterogeneity argues against reducing call-center psychosocial risk to a single exposure.

Broader call-center evidence reinforces the interpretation that psychosocial strain emerges from combinations of job demands and resources rather than from a single exposure. In five



Australian telephone call centres involving 480 operators, Deery et al. (2002) found that demanding customer interactions, high workload, and limited task variety were associated with emotional exhaustion, while emotional exhaustion was also associated with more frequent absence. Customer-related social stressors provide an additional pathway: Grandey et al. (2004), studying 198 call-center employees, reported frequent customer verbal aggression and found that both its frequency and stress appraisal were positively related to emotional exhaustion; Dormann and Zapf (2004), in a broader sample of 591 service employees, similarly showed that disproportionate expectations, verbal aggression, disliked customers, and ambiguous expectations predicted burnout beyond other work factors. These patterns are consistent with the Job Demands-Resources model, which proposes that sustained demands increase strain when adequate resources such as control, support, and recovery opportunities are insufficient (Bakker & Demerouti, 2007).

PSC is useful in this context because it shifts attention from individual resilience toward the organizational conditions that determine how psychosocial hazards are recognized and managed. Evidence from Dollard and Bakker (2010), Garrick et al. (2014), and the 93-study scoping review by Amoadu et al. (2023) consistently places management commitment, priority, communication, participation, job demands, and resources within the same organizational framework. Nevertheless, most PSC evidence summarized here comes from sectors other than Indonesian call centers. Its application to call-center work is theoretically plausible and supported by broader occupational evidence, but direct sector-specific testing is still needed.

Job control, supervisory support, and the way performance monitoring is implemented appear especially relevant to the PSC interpretation. Holman (2002), in a survey of 557 customer service representatives, found that higher control over work methods and procedures, lower levels of monitoring, and supportive team leadership were among the work characteristics most strongly associated with better employee well-being. A related study of 347 call-center agents showed that monitoring was not uniformly harmful: monitoring that provided clear performance information or served a developmental purpose was positively related to well-being, whereas high perceived monitoring intensity was negatively associated with well-being; job control and supervisory support also moderated some monitoring-well-being relationships (Holman et al., 2002). This distinction is important for PSC because it suggests that the organizational meaning, purpose, and intensity of monitoring may matter as much as the presence of monitoring itself.

The fatigue-turnover component has stronger direct support in call-center research. Zito et al. (2018), Visser and Rothmann (2008), and Jabutay et al. (2023) collectively show that emotional dissonance, work overload, customer unfriendliness, burnout or exhaustion, job resources, job satisfaction, and affective commitment are connected with turnover intention. Yulianti and Mulyana (2026) add Indonesian telecommunications evidence showing statistically significant associations of work fatigue with both job stress and turnover intention, including an indirect pathway through job stress. Because that study was not limited to call-center agents, it should be used as supporting telecommunications-sector evidence rather than treated as direct call-center evidence.

Evidence based on behavioral outcomes further strengthens the retention argument. Goodwin et al. (2011) linked call-center employees' reports of emotional-labor strategies with supervisor-rated performance and organizational turnover records nine months later; surface acting was directly related to both emotional exhaustion and subsequent turnover, whereas deep acting

was not linked to those outcomes. At the organizational level, Batt (2002), using a nationally representative call-center sample, reported lower quit rates and higher sales growth in establishments that emphasized employee skills, participation in decision making and teams, and human-resource incentives such as relatively higher pay and employment security. Together, these findings indicate that withdrawal is shaped not only by individual fatigue or emotional strain but also by modifiable work-design and employment practices.

For occupational-health practice, the literature supports organizational-level prevention alongside individual support. WHO guidance emphasizes modifying working conditions and psychosocial risks (WHO, 2022, 2024), while ISO 45003:2021 provides a framework for integrating psychosocial risk management into occupational health and safety systems. A recent scoping review identified 28 health-promoting intervention studies for contact-centre employees published since 2002; most reported favorable primary outcomes, but relatively few assessed acceptability or feasibility, and the authors highlighted major evidence gaps in low- and middle-income countries (Bell et al., 2024). In call centers, practical priorities may therefore include realistic staffing and performance targets, predictable scheduling, protected recovery periods, supervisor support, clear escalation procedures for abusive customer interactions, reliable work technology, employee participation in work-design changes, and confidential reporting of psychosocial hazards. These measures are also consistent with the Indonesian requirement to consider psychological factors within workplace-environment control.

Measurement remains important for future Indonesian empirical studies. PSC-12 provides a four-domain measure of psychosocial safety climate (Hall et al., 2010), the OFER framework distinguishes chronic fatigue, acute fatigue, and intershift recovery (Winwood et al., 2005, 2006), and TIS-6 is a validated short measure of turnover intention that has demonstrated predictive validity for actual turnover (Bothma & Roodt, 2013). Before these instruments are used for definitive Indonesian call-center inference, appropriate language adaptation and psychometric evaluation in the target workforce are needed.

This review has limitations. It is a focused narrative synthesis rather than a systematic review, so it does not claim exhaustive retrieval of all call-center or PSC studies. The included studies differ in country, occupation, design, measurement, and outcome definitions, which limits direct comparison. Several key PSC studies were conducted outside call centers, while the Indonesian telecommunications fatigue-turnover study was not restricted to call-center agents. These boundaries are important: the current evidence supports a coherent organizational interpretation, but not a causal or population-specific estimate of the complete PSC-fatigue-turnover pathway in Indonesian call centers.

CONCLUSIONS

Published evidence shows that Indonesian call-center workers face important psychosocial demands, including career-development concerns, role conflict, inflexible hours, customer hostility, technological constraints, high mental workload, and high job stress. Broader occupational evidence supports PSC as an upstream organizational factor that can shape job demands, resources, recovery, and fatigue, while call-center studies consistently connect emotional strain, burnout or exhaustion, and limited job resources with turnover intention. The available literature therefore supports an



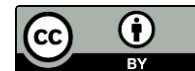
integrated organizational approach to psychosocial risk management. At the same time, no cited study directly tests PSC, chronic work fatigue, and turnover intention together in an Indonesian call-center population; conclusions should remain associative and evidence-bounded until such sector-specific research is available.

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