How AI Awareness Affects Workers' Depressive Symptoms through Job Insecurity and Burnout: A Serial Mediation Model

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Purpose

Workplace mental health has become a prominent global public health challenge, causing substantial economic and productivity losses annually. Against this backdrop, employees' perception of the impact of artificial intelligence (AI) on their career prospects—conceptualized as "AI Awareness" (AIA)—has gradually emerged as a novel psychological stressor. Research indicates that high AI awareness is significantly and positively correlated with depressive symptoms and emotional exhaustion. It may trigger job insecurity (i.e., the anticipation of job loss), subsequently leading to emotional exhaustion and adverse psychological outcomes.

Nevertheless, the existing literature predominantly focuses on technostress, and systematic empirical validation of the complete serial mediation pathway—"AI Awareness (AIA) → Job Insecurity (JIS) → Burnout (BO) → Depressive Symptoms (DS)"—remains lacking. Therefore, this study aims to test this serial mediation model to clarify the specific pathways through which AIA impacts mental health, thereby providing an empirical basis for mental health intervention and prevention strategies in the modern workplace.

Methods

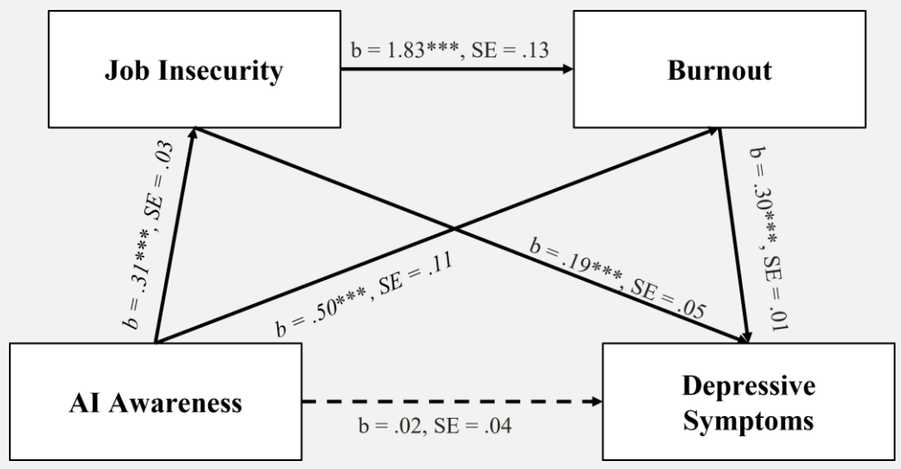
This study employed a cross-sectional research design targeting employed workers across various industries and job categories in Taiwan. The research instruments included the AI Awareness Scale, Job Insecurity Scale, Copenhagen Burnout Inventory (CBI), and the Center for Epidemiologic Studies Depression Scale Short Form (CES-D Short Form). Serial mediation analysis was conducted using SPSS PROCESS Model 6 to test the research hypotheses.

Results

	Effect	CI LLCI ~ ULCI
Total effect	0.40	.30 ~ .50
Direct effect	0.02	−.06 ~ .10
Indirect effects		
AIA → JIS → DS	0.06	.02 ~ .10
AIA → BO → DS	0.15	.08 ~ .23
AIA → JIS → BO → DS	0.17	.13 ~ .21

Note. Level of confidence is 95%. AIA = AI Awareness; JIS = Job Insecurity; BO = Burnout; DS = Depressive Symptoms. Confidence intervals not containing zero indicate significant indirect effects.

Results



Note. Solid lines represent statistically significant paths; the dashed line represents a non-significant direct path.

A total of 957 participants were recruited (433 males, 45.25%; 524 females, 54.75%), with a mean age of 34.92 years (SD = 10.16). The results of the serial mediation analysis revealed several critical pathways. First, AIA significantly increased depressive symptoms by elevating individuals' JIS (95% CI [0.02, 0.10]). Second, AIA significantly increased depressive symptoms through increased burnout (95% CI [0.08, 0.23]). Finally, the serial mediation pathway—AIA → JIS → Burnout → Depressive Symptoms—reached statistical significance (95% CI [0.13, 0.21]), indicating that workers with AIA first experienced higher JIS, which subsequently intensified burnout and ultimately led to elevated depressive symptoms.

Discussion

This study confirms a serial mediation pathway where AI Awareness (AIA) was associated with depressive symptoms through job insecurity (JIS) and burnout. It clarifies the psychological sequence of "Cognition (AIA) → Appraisal (JIS) → Response (Burnout) → Clinical Symptoms (Depressive Symptoms)," successfully integrating technological threats into workplace stress frameworks. These findings highlight that AI-related cognitions are critical emerging psychosocial stressors. For clinical psychology practitioners, this study emphasizes that "perceptions and cognitions regarding AI" should be regarded as critical emerging psychosocial stressors when assessing workplace depressive symptoms and burnout.

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I have no COI with regard to the presentation