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Nurses' Career Adaptability and Work Engagement: The Mediating Role of Cultural Intelligence

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ABSTRACT

In the dynamic and increasingly diverse healthcare environment, career adaptability is a recognized predictor of work engagement. This study investigated the mediating effect of cultural intelligence as an underlying mechanism on the relationship among nursing professionals. Primary data were collected from a sample of nurses (N=271) using validated self-report questionnaires that assessed the three focal constructs: career adaptability, cultural intelligence, and work engagement. To test the proposed hypotheses and examine the structural relationships among the variables, Structural Equation Modeling (SEM) was utilized. The findings revealed a significant positive direct relationship between career adaptability and work engagement. Crucially, the analysis confirmed that cultural intelligence exerts a significant mediating effect on this relationship: career adaptability positively predicts cultural intelligence, which, in turn, enhances work engagement. Highly adaptable nurses are better equipped to develop cultural intelligence, thereby improving their overall work engagement. Healthcare administrators should prioritize professional development programs that foster both career adaptability and cultural intelligence to sustain nurse engagement and improve patient care. Cultivating these critical psychosocial resources can effectively sustain nurses' work engagement, reduce turnover intentions, and ultimately improve patient care outcomes in diverse healthcare settings.

Keywords: Career adaptability, Nurses work engagement, Cultural intelligence, Caring performance, Well-being

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In today's world, healthcare settings are characterized by rapid transformations, escalating complexities, and unprecedented demographic diversity. Positioned at the frontline of the health system, healthcare practitioners must possess substantial psychological resources and profound interpersonal skills to provide high-quality care. Because the work quality of clinical staff has a direct bearing on patient recovery, a significant body of research are dedicated to improving their occupational quality and relationship with caring service (Wei et al., 2023). Notably, improvements in work quality can be achieved by cultivating greater work engagement among nurses (Al-Fuqaha et al., 2025; Kim & Seo, 2021). Specifically, nurses who exhibit higher levels of work engagement tend to experience lower rates of burnout and demonstrate superior performance in their caregiving duties (Al-Ahmari & Kattan, 2024; García-Sierra, Fernández-Castro & Martínez-Zaragoza, 2016).

Enhancing work engagement is closely linked to the diverse personal attributes that nurses bring to their work environment. Among these characteristics, various studies have identified career adaptability as a robust predictor of job outcomes, noting its inherent association with fundamental individual traits such as personality and self-concept. Although career adaptability is increasingly associated with improved nursing outcomes (Chan & Mai, 2015; Walden, 2020), the mechanisms that bridge adaptability and perceived care quality are rarely explored. While varying types of intelligence may influence this clinical dynamic, the specific mediating role of cultural intelligence has been critically neglected in most current nursing research. Hospitals serving patients from various regions must be better equipped to understand the diverse cultures involved in patient care. Specifically, hospitals in Karaj typically serve patients from many regions across Iran, bringing a wide variety of languages and cultural backgrounds.

To address a gap in the literature, this study examined how cultural intelligence mediates the link between career adaptability and work engagement among nurses. This study contributes to the theoretical development of nursing well-being and work outcomes by clarifying how their inputs to job and career adaptability foster engagement and enhance cultural intelligence.

Furthermore, these outcomes provide valuable tools for clinical managers who wish to use empowerment-based approaches to simultaneously increase workplace participation, improve retention rates, and enhance care quality.

Review of Literature

Career Adaptability and Work Engagement

Defined as a positive, fulfilling, and work-related state of mind, work engagement is characterized by three core dimensions: vigor, dedication, and absorption (Schaufeli & Bakker, 2004). It serves a vital function in reducing job burnout (Wei et al., 2023) and elevating the quality of patient care (Kim & Seo, 2021). Specifically, vigor denotes high energy levels, mental resilience, and a willingness to invest effort despite challenges. Dedication involves a profound sense of enthusiasm, pride, inspiration, and significance, while absorption reflects a state of being so deeply engrossed in one's work that time passes rapidly. Ultimately, work engagement manifests as elevated organizational participation and deep commitment (Xu et al., 2024). It captures nurses' attachment to their roles, peers, and institutions, driving their motivation to pursue professional development and achieve optimal clinical performance. When engaged,

nurses find distinct meaning in their work and psychologically identify with their profession (Gómez-Salgado et al., 2019), which directly translates to superior patient care.

However, cultivating this engagement depends on specific individual antecedents that interact with dynamic occupational processes. Chief among these is career adaptability, a critical predictor of job performance and associated work outcomes. Grounded in Career Construction Theory, career adaptability encompasses the readiness and psychological resources—namely concern, control, curiosity, and confidence—required to navigate occupational tasks, transitions, and both anticipated and unforeseen professional traumas (Savickas, 2013). Within the nursing profession, which is marked by rotating shifts, rapid technological advancements, and unpredictable crises such as pandemics, adaptability is indispensable. Studies on career adaptability show that highly adaptable nurses are significantly more capable of managing workplace stress. Therefore, those who better adapt to job requirements are more likely to develop autonomy and a sense of professional belonging (Nie et al., 2023). Because adaptable individuals frame changes as learning opportunities rather than threats, this cognitive appraisal acts as a direct catalyst for sustained vigor and dedication in the clinical environment.

H1: Nurses' career adaptability is positively associated with work engagement.

Career Adaptability and Cultural Intelligence

Career adaptability is conceptualized through four core dimensions: concern, curiosity, control, and confidence. career *concern* reflects a forward-looking orientation. Nurses exhibiting high levels of concern are inherently invested in preparing for the future. The high levels of concern for nurses, often characterized by empathy, compassion (Zarrinkolah et al., 2025), and a deep commitment to patient outcomes; are indeed intrinsically motivated to invest in preparing for the future of their patients, their profession, and healthcare systems. Consequently, they are more likely to harbor positive attitudes toward learning foreign languages and understanding different cultures, which manifests as elevated CQ. Motivated by this concern to navigate evolving workplace dynamics and an increasingly diverse patient demographic, they proactively seek to comprehend others. This forward-looking orientation naturally synergizes with *curiosity*. Driven by curiosity, these nurses actively invest effort into learning the intricate details and multifaceted dimensions of foreign cultures. Curiosity equips them to explore diverse perspectives, envision themselves functioning in various roles, and construct alternative future scenarios (Savickas & Porfeli, 2012). Consequently, highly curious nurses demonstrate a pronounced propensity to explore and comprehend cultural nuances in the clinical setting, paying meticulous attention to the cultural contexts of their patients and peers. These helps nurses to reach higher self efficacy which would be predictor of cultural intelligence (MacNab & Worthley, 2012).

The dimension of career *control* denotes the conviction that individuals are the primary architects of their own career trajectories (Savickas & Porfeli, 2012). It is therefore posited that nurses with a strong locus of career control will take personal responsibility for achieving effective cross-cultural interactions and mutual understanding. This proactive accountability directly fosters higher CQ, indicating a positive relationship between career control and cultural intelligence.

Finally, career *confidence* fosters the self-efficacy and perceived competence necessary to successfully execute the professional responsibilities (Ranta et al., 2020). This psychological assurance empowers nurses to trust their capabilities during cross-cultural engagements, significantly reducing avoidance behaviors. Furthermore, workers who have control and self-confidence typically feel less anxiety associated with cross-cultural ambiguity (Yamazaki & Toyama, 2024), allowing them to deploy highly adaptive cognitive and behavioral strategies. Extant literature confirms that such adaptive individual traits are foundational prerequisites for developing cultural intelligence in diverse settings (Presbitero, 2020).

Career adaptability is related to exposure to diverse opportunities, situations, challenges, values, and other factors. This implies exposure to different cultures. Therefore, Hypothesis 2 is formulated as follows:

H2: Nurses' career adaptability is positively associated with cultural intelligence.

The Relationship of Cultural Intelligence and Work Engagement

According to Ang et al. (2006) cultural intelligence is defined as an individual's capability to function effectively in culturally diverse settings. This competency has been investigated and validated in further research concerning job performance (Gu et al., 2022; Rahimaghaee & Mozdbar, 2017; Subramaniam et al., 2011). Nurses who possess the ability to communicate appropriately, both verbally and non-verbally, can not only share knowledge effectively with their colleagues but also establish successful interactions with patients (Ahanchian et al., 2012; Baratipour et al., 2021; Wanko Keutchafo et al., 2022). Consequently, this capability fosters a greater sense of belonging and motivation toward the profession, which can serve as a precursor to enhanced work engagement. Encompassing metacognitive (ability to monitor and control cognitive process confronting other cultures), cognitive (knowledge of the norms, values, and social systems of various cultures), motivational (intrinsic interest and drive to interact with individuals from other cultures), and behavioral dimensions (capability to properly adapt verbal and non-verbal behaviors in cross-cultural interactions), (Ng & Earley, 2006; Thomas, 2006) CQ empowers nurses to deliver culturally sensitive care devoid of bias, grounded in a profound understanding of patients' cultural backgrounds.

High cultural intelligence can exert a direct, positive impact on work engagement. Drawing upon the Job Demands-Resources (JD-R) model, cultural conflicts and communication misunderstandings with patients or colleagues function as draining "job demands" that precipitate stress. Conversely, cultural intelligence acts as a critical "personal resource" that buffers against these demands and mitigates environmental friction. A nurse equipped with the skills to communicate effectively with a patient from a different culture experiences a heightened sense of competence, success, and autonomy. This feeling of efficacy bolsters the individual's intrinsic motivation, directly leading to increased absorption and vigor at work; the core components of work engagement (Hemberg & Vilander, 2017; Ličen & Prosen, 2023). Furthermore, individuals with high cultural intelligence are able to handle the intricacies of diverse work environments (Khan & Jin, 2024), so they are more likely to engage in interaction,

collaboration, and career advancement within culturally diverse work environments. Therefore, it can be hypothesized that:

H3: Nurses' cultural intelligence is positively associated with work engagement

Mediating Role of Cultural Intelligence Between Career Adaptability and Work Engagement

By integrating the preceding arguments, a cohesive chain mechanism emerges. Career adaptability functions as a foundational psychological resource, empowering nurses to effectively cope with complex and volatile environments (Awad et al., 2024; Zhao et al., 2025). Nevertheless, in culturally diverse healthcare settings, this generalized adaptability requires integration with a context-specific skill to achieve maximal efficacy (Theodosopoulos, 2025). In this theoretical framework, cultural intelligence represents the missing link and acts as the crucial mediating variable.

Specifically, highly adaptable nurses capitalize on their adaptive capacities to cultivate their cultural intelligence—thereby acquiring the cognitive frameworks and intrinsic motivation necessary for cross-cultural interactions. This well-developed cultural intelligence enables them to navigate interactions with international patients and colleagues successfully, buffering against the stress typically induced by cultural friction (Earley & Ang, 2003). As a result, they can preserve and channel their energy and enthusiasm, maintaining peak levels of work engagement. This logical sequence is corroborated by recent literature demonstrating that basic psychological resources translate into positive organizational outcomes through the intermediary development of communicative and cultural competencies (Chen & Zhang, 2023).

Consequently, it is hypothesized that cultural intelligence mediates the relationship between career adaptability and work engagement in the nursing workforce.

H4. Nurses' cultural intelligence mediates the relationship between career adaptability and work engagement.

Method

This descriptive-correlational study was conducted in 2024 among clinical personnel working in hospitals affiliated with the University of Medical Sciences in Karaj, Iran. A convenience quota sampling method was utilized, with data collected from public and private hospitals in an equal 50% ratio. The participants comprised healthcare staff, specifically nurses, supervisors, and resident physicians.

An invitation to participate was initially distributed through the staff's social media channels, requesting them to access a provided link to join the study. Before accessing the questionnaire, which was hosted on the Porsline platform, respondents were assured of the confidentiality of their responses and informed that their data would be used exclusively for the purposes of this research. Questionnaires with more than 15% missing responses were excluded from the study. Ultimately, out of a total of 437 submitted questionnaires, only 271 valid responses were retained for the final analysis.

Instrument

Cultural intelligence: Cultural intelligence was measured using the 20-item Cultural Intelligence Questionnaire (CQS), developed by Ang et al. (2007) and subsequently adapted for the local context by domestic specialists. This instrument assesses four dimensions: metacognitive, cognitive, motivational, and behavioral. Higher scores indicate a greater level of cultural intelligence. Responses are scored on a five-point Likert-type scale, ranging from ‘Strongly agree’ to ‘Strongly disagree’.

The dimensions include: *Metacognitive:* 4 items (e.g., “I am conscious of the cultural knowledge I use when interacting with people from different cultural backgrounds”). *Cognitive:* 6 items (e.g., “I know the legal and economic systems of other cultures”). *Behavioral:* 5 items (e.g., “I use pauses and silence to suit different cross-cultural situations”). *Motivational:* 5 items (e.g., “I enjoy interacting with people from different cultures”).

The validity and reliability of Ang’s CQS have been confirmed in local studies, with reported reliability coefficients ranging from .82 to .89 (Hassani, 2015; Kamaliyan et al., 2014). In the present study, the Cronbach’s alpha coefficient was .88. To assess construct validity, a Confirmatory Factor Analysis (CFA) was conducted. As presented in Table 1, all model fit indices were above the recommended threshold of .90, except for the CFI (.89), which is acceptable.

Career adaptability: To assess nurses’ career adaptability, this study utilized the Persian version of the Career Adapt-Abilities Scale (CAAS; Savickas & Porfeli, 2012), validated by McKenna et al. (2016). This 24-item instrument with 6 items measures four core dimensions of career adaptability *Concern* (e.g., “Thinking about what my future will be like”), *Control* (e.g., “Making decisions by myself”), *Curiosity* (e.g., “Exploring my surroundings”), and *Confidence* (e.g., “Overcoming obstacles”). Respondents rated their development of these abilities on a 5-point Likert scale ranging from 1 (*Not strong*) to 5 (*Strongest*). A composite score was calculated by averaging the 24 items, where higher scores indicate greater career adaptability and stronger psychological readiness to cope with workplace challenges. The CAAS has excellent established reliability, with original developers reporting an internal consistency of $\alpha = .92$. In the current study, the scale yielded a Cronbach’s alpha of $\alpha = .93$ for the total scale, with subscale coefficients ranging from $\alpha = .84$ to $\alpha = .96$.

Work engagement: To measure the job involvement variable, the Job Involvement Questionnaire (Kanungo, 1982) was utilized. This questionnaire consists of 10 items, each scored on a 5-point scale from 1 (Strongly disagree) to 5 (Strongly agree). The validity of this questionnaire has also been confirmed in studies conducted in Iran (Zabani Shadabad & Ghasemzade, 2017). The results of the confirmatory factor analysis (CFA) demonstrated that this variable possesses adequate construct validity and reliability. According to the results presented in Table 1, the GFI, CFI, and NFI indices were all obtained above .90, indicating the structural confirmation of this variable. The reliability coefficient for this instrument in the present study was .88.

The mean scores for career adaptability, cultural intelligence, and job involvement among the studied nurses were 3.22, 2.96, and 2.88, respectively. The fitness indexes for measurement are presented in Table 1.

Table 1
Fitness Indexes for Measures

Variables	<i>M</i>	<i>SD</i>	<i>GFI</i>	<i>CFI</i>	<i>NFI</i>	<i>C.R</i>	Alpha
Career Adaptability (X)	3.22	1.32	.94	.91	.93	0.94	0.93
Cultural Intelligence (M)	2.96	1.19	.91	.89	.90	0.91	0.88
Work Engagement (Y)	2.88	1.31	.92	.90	.91	0.97	0.97

Data Analysis

Data were analyzed using SPSS software (version 24), with a significance level of $p < .05$. Demographic and personal characteristics were described using means and standard deviations.

Harman's single-factor test was employed to examine potential common method bias. According to Podsakoff et al. (2012) and Ding et al. (2025), common method variance (CMV) is a concern when the total variance explained by a single factor exceeds 50%. In the present study, the single factor accounted for 35.62% of the cumulative variance, indicating that CMV was not a significant issue. Furthermore, Structural Equation Modeling (SEM) was conducted using AMOS to evaluate the overall model structure and assess mediating effects. Because all observed variables approximated a normal distribution, the Maximum Likelihood (ML) estimation method was utilized to estimate the model parameters.

Results

The mean age of the nurses was 29.2 years, with an average work experience of 8.6 years. The majority of the surveyed nurses were female (67%), married (72.5%), and held a bachelor's degree in nursing (82.4%).

Table 2 shows the correlations among the study variables employed to test hypotheses. As shown in Table 2, work engagement has a correlation with career adaptability and cultural intelligence, respectively $r = .47$, $p < .01$ and $r = .39$, $p < .01$. The correlation between career adaptability and cultural intelligence is also significant ($r = .51$, $p < .01$). Education has a positive correlation with all variables.

Table 2
Correlations among Study Variables

Variables	1	2	3	4	5	6
1. Age	--					
2. Gender	.09	--				
3. Education	.22**	.16**	--			
4. Career Adaptability	.19*	.12*	.23**	--		
5. Cultural Intelligence	.26**	.19**	.18**	.51**	--	
6. Work Engagement	.45**	.24**	.39**	.47**	.39**	--

Note. ** $p < .01$ * $p < .05$

An initial SEM was estimated using AMOS to assess the theorized relationships among the latent constructs prior to formal hypothesis testing. The structural model yielded satisfactory goodness-of-fit statistics ($\chi^2/df = 2.34$; CFI = .91; TLI = .92; RMSEA = .88), confirming that the hypothesized framework adequately represented the observed sample data.

Hypothesis 1 posits that *Career adaptability* will be positively related to *Work Engagement*. The results in Table 3 show that Career adaptability has a positive and significant relationship with work engagement ($B = .28, p < .01$). Therefore, H1 was supported.

The relationship between cultural intelligence as a mediator between career adaptability and work engagement is also supported. Career adaptability has a positive relationship with cultural intelligence ($B = .31, p < .001$), which supports H2. H3 is also supported by the significant relationship between cultural intelligence and work engagement ($B = .25, p < .001$).

Hypothesis 4 posited an indirect relationship wherein cultural intelligence serves as an underlying mechanism between career adaptability and work engagement. The specific indirect effect of career adaptability on work engagement via cultural intelligence was found to be statistically significant ($\beta = .08, t = 1.91, p = .029$). These findings confirm the mediating mechanism, thereby supporting Hypothesis 4.

Table 3
Hypothesis Test Results

Hypothesis	Influence	Coefficient	<i>t</i>	<i>p</i>	Information
H1	<i>Career adaptability (X) -> Work Engagement (Y)</i>	0.28	2.73	0.004	Accepted
H2	<i>Career adaptability (X) -> Cultural intelligence (M)</i>	0.31	3.04	0.001	Accepted
H3	<i>Cultural intelligence (M)-> Work Engagement (Y)</i>	0.25	3.01	0.001	Accepted
H4	<i>Career adaptability (X) -> Cultural intelligence (M) -> Work engagement (Y)</i>	0.08	1.91	0.029	Accepted

Conclusion

The present study aimed to investigate the relationship between career adaptability and work engagement among nursing professionals, with a specific focus on the mediating role of cultural intelligence. The empirical results yielded three primary conclusions: first, career adaptability exerts a significant and positive direct effect on nurses' work engagement; second, cultural intelligence acts as a partial mediating mechanism in this relationship; and third, the magnitude of the direct effect of career adaptability on work engagement is substantially larger than the indirect effect channeled through cultural intelligence.

The robust direct relationship between career adaptability and work engagement aligns with the theoretical framework of Career Construction Theory (Savickas, 2013) and the Job Demands-Resources (JD-R) model (Schaufeli & Taris, 2014). The nursing profession is inherently characterized by high emotional demands, acute workplace stressors, and a rapidly evolving healthcare landscape. Career adaptability, encompassing the psychosocial resources of concern, control, curiosity, and confidence, equips nurses with the crucial self-regulatory capacities necessary to navigate these occupational challenges. When nurses possess high adaptability, they are better positioned to manage workplace adversity and align their professional roles with their personal values. This profound sense of control and preparedness

directly translates into higher levels of vigor, dedication, and absorption, which are the fundamental dimensions of work engagement (Johnston et al., 2013; Xie et al., 2016).

Furthermore, this study contributes to the literature by illuminating the mediating role of cultural intelligence. In modern, diverse healthcare settings, nurses frequently interact with patients, families, and interdisciplinary team members from varying cultural backgrounds.

Nurses with higher levels of cultural intelligence are better able to understand cultural customs and traditions and establish effective communication with others. Consequently, they can devote greater ability and focus to their work, while expending less cognitive energy resolving cultural challenges, compared with individuals who possess lower levels of such capabilities. Nurses with higher cultural intelligence demonstrate a conscious capacity to recognize, purposefully identify, analyze, and learn about other cultures during interactions (Thomas, 2006). As a result, they are better able to understand the customs and practices of patients and colleagues and communicate more effectively both verbally (e.g., speech and conversational style) and nonverbally (e.g., facial expressions and physical gestures), displaying behaviors that are appropriate for culturally diverse contexts (Bücker et al., 2014).

Among individual characteristics which are predicting the cultural intelligence (MacNab & Worthley, 2012) career-adaptable nurses, driven by professional curiosity and confidence, are intrinsically more likely to develop cultural intelligence—the capability to function effectively in culturally diverse contexts (Ang et al., 2007). Elevated cultural intelligence empowers nurses to bridge communication gaps, comprehend culturally specific patient needs, and mitigate intercultural misunderstandings. By reducing cultural friction and enhancing the quality of interpersonal interactions, cultural intelligence serves as a vital psychological conduit through which adaptability translates into deeper job involvement and engagement (Lin et al., 2012).

Interestingly, the statistical finding that the direct effect of career adaptability significantly overshadows the indirect effect via cultural intelligence offers a highly nuanced understanding of nursing occupational psychology. While cross-cultural competence is undeniably vital for patient care in contemporary healthcare, the core psychological resource of career adaptability remains the primary engine of work engagement. This indicates that the fundamental, overarching ability to proactively manage one's career trajectory, cope with unpredictable shifts in healthcare protocols, and maintain professional resilience exerts a much more profound influence on a nurse's intrinsic engagement than the specific application of intercultural skills alone. Consequently, while cultural intelligence is a valuable supplementary pathway that refines how engagement is expressed in diverse settings, adaptability forms the foundational bedrock of a nurse's overall occupational well-being.

From a practical perspective, healthcare administrators and nursing managers must prioritize the cultivation of both career adaptability and cultural intelligence to combat systemic burnout and promote work engagement. Interventions such as continuous professional development, structured mentorship programs, and resilience training can effectively bolster career adaptability. Simultaneously, integrating cross-cultural communication training into nursing curricula and hospital onboarding processes can enhance cultural intelligence, providing an additional, synergistic boost to work engagement (Ulenaers et al., 2021).

Despite its contributions, this study acknowledges certain limitations, notably its cross-sectional design, which precludes the establishment of definitive causal inferences. Future research should employ longitudinal or experimental designs to track how temporal changes in career adaptability and cultural intelligence affect the trajectory of work engagement. In conclusion, this conceptual model offers critical practical implications for healthcare management, highlighting that alongside efforts to bolster general adaptability, strategic investments in targeted cultural intelligence training are essential for maximizing the work engagement of healthcare professionals.

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Conflict of Interests

No, there are no conflicting interests.

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