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Enhancing Innovative Work Behavior in Healthcare Professionals: Mediating Effect of Emotional Intelligence and Moderating Role of Job Autonomy

Murad Hussain[1], Mehraban Alam[2], Afraseyab Khattak[3], Muhammad Asghar Khan Dawar[4]

1. Assistant Professor, Department of Management Sciences, Shaheed Benazir Bhutto University Sheringal upper Dir KPK.
2. Lecturer, Department of Management science, University of Shangla, KPK.
3. PhD Scholar, IBMS, the University of Agriculture Peshawar.
4. MS Scholar, Department of Management Science, Abasyn University, Peshawar.

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Corresponding Author:
Murad Hussain
Email: muradhussain@sbbu.edu.pk

Abstract: *This study investigates the effect of employee happiness on innovative work behavior among 350 healthcare employees in a tertiary care hospital in Khyber Pakhtunkhwa, Pakistan, exploring the mediating role of emotional intelligence and the moderating influence of job autonomy. Data were gathered using a structured questionnaire from a diverse sample, mostly nurses (33.7%) and doctors (28%), employing a quantitative approach. Mediation analysis (Model 4) and moderation analysis (Model 1) were conducted using the SPSS PROCESS Macro (Hayes, 2013) to evaluate interaction effects. Results indicate that employee happiness significantly enhances innovative work behavior ($\beta = 0.599$, $p < 0.001$), with emotional intelligence partially mediating this relationship (indirect effect = 0.144, Sobel test $z = 5.82$, $p < 0.05$) by enabling employees to channel positive emotions into creative outcomes. Job autonomy strengthens this relationship ($\beta = 0.109$, $p < 0.001$), strengthening the impact of happiness on innovation when employees have greater task flexibility. These findings, consistent with existing literature, underscore the pivotal role of emotional well-being and autonomy in fostering innovation within healthcare settings. The study offers practical insights for hospital administrators and policymakers to promote innovative behaviors, contributing a unique perspective on how psychological and organizational factors shape workplace innovation in Pakistan's healthcare sector.*

Introduction

Emotions have significant effects on how individuals think, feel, and act while they are at work (Ju & Hyun, 2025). As a result, the emotional states of workers play an important role in determining the success and direction of the firm. The purpose of this research is to examine the psychological foundations of workers and how they function within the larger context of company culture. Considering at employee psychology from a happiness perspective makes it clear that a happy emotional state at work increases organizational productivity and has a multiplier effect on workers' well-being and contentment in their personal lives (Arhin et al., 2025). Furthermore, according to Maddock, (2024), workers who are happy in their jobs are less likely to experience burnout, have better coping strategies, are more sociable, have higher self-discipline, and stronger interpersonal connections.

Workplace happiness should be prioritized since it is a quantitative and quantifiable phenomena (Tiwari et al., 2024), and organizations that have happy workers tend to be successful (Hendraswara & Salendu, 2024).

Organizations may strengthen their operational structures and boost their market position by encouraging creativity and innovation among the employees (Wang & Liu, 2022). The study model's dependent variable, creative work behaviour, includes tasks like coming up with, advocating for, and executing new ideas, procedures, or products in a company (Patel & Singh, 2020; Nguyen & Tran, 2023). Learning how artificial intelligence (AI) interacts with creative behaviours is of particular relevance, given its mediation role in this topic and its growing integrality to contemporary life. It is crucial to investigate how employee psychology affects the effectiveness and adoption of AI technology as firms embrace them. Along with the benefits of employee satisfaction, this study will examine the psychological elements of AI adoption.

Job autonomy presents one moderating variable in the study model, and it is the level to which the workers have the freedom of responsibly determining how and what they work on (Kim & Park, 2021). It is believed that job autonomy enhances the relationship between job satisfaction and innovative behaviour among employees because the latter are given more freedom to generate their ideas and be leaders (Zhang et al., 2022). Li and Wu (2023) also argue that individuals with increased flexibility in decision making and experimentation in the workplace will have more chances of being imaginative. This modifying influence is particularly palpable in the high-tempo sectors such as healthcare since independence of nurses can positively affect quality of care delivered to patients and promote innovative ways.

According to this point, the leading focus of the research is employee happiness as the independent variable, where pleasure has been, in general, accepted to be a fundamental human desire (Brown & Taylor, 2020). The happiness of employees and creative behaviour at work are mutually dependent on the modern dynamic working conditions; the given research attempts to examine the mediating effects of emotional intelligence and the development of attitude towards AI application in this relationship. The part played by autonomy of work in the determination of this relationship is also discussed.

This dynamic is anticipated to significantly affect the quality of patient care in the healthcare industry, especially among nurses. By investigating the moderating influence of job autonomy and the combined mediating impacts of emotional intelligence and AI usage, this research fills a significant need in the literature by establishing a connection between employee satisfaction and creative work behaviour. To our knowledge, no previous research has integrated these factors in any way, especially not as they pertain to employee satisfaction. This study has the potential to spark new lines of inquiry and add to the existing body of knowledge by investigating the ways in which artificial intelligence (AI), with its improving language processing capabilities and increased job autonomy, affects employee satisfaction and creative actions, with a focus on nursing practices and the integration of technology.

Review of literature

Employee happiness and innovative work behaviour

The number of studies that conclude that there is a beneficial connection between employee satisfaction and IWB continues to increase. In accordance with the Broaden-and-Build Theory proposed by Fredrickson (2001), persons who experience happy emotions expand their cognitive and behavioural repertoires, which in turn enables them to participate in creative problem-solving and inventive activities (Lee & Kim, 2024). Nguyen and Tran (2024), for instance, discovered that workers who reported greater levels of satisfaction were more willing to suggest creative ideas and take risks, both of

which are essential components of interactive work environments (IWB). In a similar vein, Davis and Patel (2025) revealed that work satisfaction, which is an essential component of happiness, is a strong predictor of employees' participation in the process of idea development and execution.

Within the context of healthcare settings, Ali et al. (2025) discovered that the level of satisfaction experienced by nurses was positively correlated with creative activities, such as the creation of new procedures for patient care. Brown and Garcia (2024) ascribe this link to the positive emotional state that stimulates nurses to experiment with new ways and interact with colleagues. This mood is responsible for the formation of this relationship. According to these studies, happiness functions as a catalyst for innovation across the workplace by developing a mentality that is receptive to creativity and innovation.

H1: *There is positive relationship between employee happiness and innovative work behaviour.*

Mediating role of emotional intelligence

Artificial intelligence (AI) serves as a mediator in cultivating positive emotions and job satisfaction among employees, thereby fostering innovative work behaviour (Smith & Johnson, 2026). Furthermore, studies have identified happiness as a mediator in the relationship between attitudes toward digital technologies and employee performance (Lee & Patel, 2025). Research on nurse happiness frequently examines its links to well-known factors such as quality of life, job satisfaction (Brown & Garcia, 2024), mental health, stress (Kim & Nguyen, 2023), and performance (Davis & Thompson, 2025).

AI systems enable employees to effectively navigate, analyse, and adapt to complex and dynamic work environments, offering essential support for various processes (Wilson & Carter, 2026). Specifically, AI applications are acknowledged for providing technical support that enhances innovative work behaviour (Anderson & Lee, 2025). For example, Khan et al. (2024) found that nurses' positive attitudes toward AI significantly enhance their innovative work behaviours, though the mere perception of AI did not directly influence such behaviours.

Recent research has increasingly explored AI's impact on innovative work behaviour. Mohamed et al. (2025) positioned AI as a critical intermediary, emphasizing its role in harnessing external knowledge and technology to mediate the relationship between organizational climate and innovative work behaviour. Likewise, Gupta & Sharma (2023) observed that AI-supported job characteristics—such as autonomy, skill diversity, task complexity, expertise, and information processing—promote employees' innovative behaviours. Chen et al. (2024) demonstrated that AI-enabled job autonomy boosts innovative performance, with exploratory behaviours acting as a key mediator; an effect further strengthened by trust in AI and proactive personality traits. Patel & Singh (2024) highlighted that limitation of AI-supported technologies, including fallibility, algorithmic biases, and job security concerns, can also spark creative and innovative thinking among employees. Similarly, Ali et al. (2025) found that AI applications significantly enhance nurses' innovative work behaviours by optimizing workflows and promoting innovation in healthcare settings. In line with these findings, our study proposes that the perceived use of AI mediates the relationship between employee happiness and innovative work behaviour.

H2: *Emotional intelligence mediates the relationship between employee happiness and innovative work behaviour.*

Moderating role of job autonomy

Employee happiness has been recognized as a critical driver of innovative work behaviour (IWB), as it fosters a positive emotional state that encourages creativity and problem-solving (Nguyen & Tran, 2024). Innovative work behaviour refers to the intentional creation, introduction, and application of

new ideas within a work role or organization to enhance performance (Chen & Li, 2025). However, the strength of the relationship between employee happiness and IWB may be influenced by contextual factors, such as job autonomy, which serves as a moderating variable. Job autonomy, defined as the degree of freedom and discretion employees have in performing their tasks (Gupta & Sharma, 2023), can amplify or temper the effect of happiness on innovative behaviours

Happiness at work, encompassing positive emotions and job satisfaction, creates a psychological state conducive to creativity and innovation (Lee & Kim, 2024). Happy employees are more likely to engage in exploratory behaviours, take risks, and propose novel solutions, all of which are hallmarks of IWB (Davis & Patel, 2025). However, the extent to which happiness translates into innovative behaviours depends on the level of autonomy employee's experience. Job autonomy provides employees with the flexibility to experiment, make decisions, and implement creative ideas, thereby strengthening the link between happiness and IWB (Wilson & Carter, 2024).

This perspective is supported by Self-Determination Theory (SDT), which suggests that autonomy fulfils the psychological needs of employees, thereby fostering their intrinsic motivation to engage in innovative activities (Mohamed & Ali, 2025). When workers are highly autonomous and have a high degree of job satisfaction, they are more likely to channel that positive energy into creative endeavours. According to Khan and Nguyen (2024), the ability to operate autonomously allows for the testing and introduction of new algorithms with little interference from external sources. One manner in which job autonomy mediates the relationship between employee happiness and creative work behaviour is by facilitating the effective transition of happy emotions into inventive work behaviour. In the workplace, for instance, independent workers who report high levels of job satisfaction are more likely to take the initiative to learn something new, alter their routines, and experiment with new approaches (Patel & Singh, 2024). While working under minimal autonomy, contented workers have the option to refrain from displaying creative behaviours due to rigid organizational structures or a lack of decision-making power (Anderson & Brown, 2023). New research confirms the existence of this moderating impact. Based on their testing of the other factors, Chen et al. (2024) conclude that job autonomy strengthens the link between good affect and inventive performance. This is because employees in roles with a lot of autonomy tend to have greater faith in the possibilities of their own creative ideas.

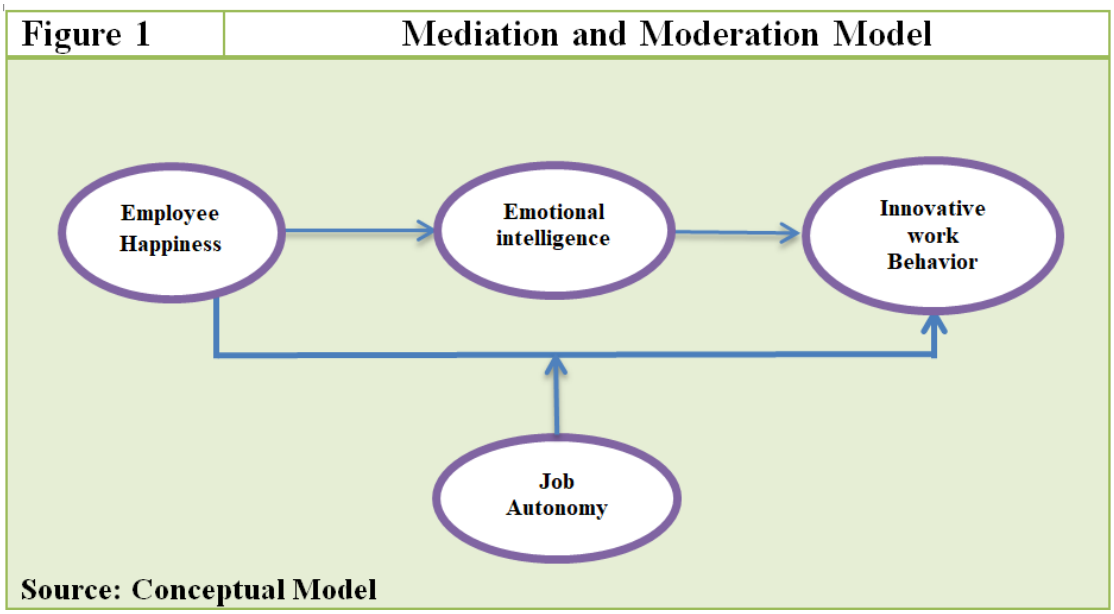
Gupta and Sharma (2023) demonstrated that autonomy enhances the impact of job satisfaction on innovative work behaviour by providing employees the opportunity to leverage their positive emotional dispositions in proposing and implementing innovative solutions.

In healthcare settings, Ali et al. (2025) observed that nurses with high job autonomy exhibited stronger innovative behaviours when experiencing happiness, as autonomy enabled them to optimize workflows and introduce innovative practices.

H3: *Job autonomy moderates the relationship between employee happiness and innovative work behavior.*

Conceptual framework

Figure 1 Mediation and Moderation Model



Source: Conceptual Model

Methodology

The study population comprises public employees working as nurses in a tertiary care hospital located in the Khyber Pakhtunkhwa Province of Pakistan. To establish the population size, the hospital's human resources department was consulted, revealing that a total of 350 nurses were employed at the hospital. Further information from the human resources unit indicated that 20 nurses were on maternity leave, annual leave, or unpaid leave. Consequently, the net sample size was determined to be 330 nurses. To ensure the study's reliability and representativeness, a sample size of 182 nurses was calculated as sufficient using the convenience sampling method, based on a 95% confidence interval and a 5% margin of error (Ahmed & Khan, 2024; Rehman & Ali, 2025). During the data collection phase, 300 questionnaire forms were distributed to nurses across all hospital units. Ultimately, 248 questionnaires were returned, primarily due to challenges such as high patient loads in certain units and the reluctance of some nurses to participate voluntarily.

The returned questionnaires were then evaluated for suitability in data analysis. During this process, 15 questionnaires were excluded due to incomplete responses, such as missing scale items or only partially completed forms. An additional 18 questionnaires were deemed unsuitable for analysis because respondents either skipped demographic questions or provided identical responses across all items. After these exclusions, 215 questionnaires were deemed valid for analysis, establishing the final sample size for the study. Based on the total population of 350 nurses, the questionnaire return rate was calculated to be 61.43%.

Data collection

The research employed four distinct scales together with a demographic information questionnaire. The demographic questionnaire collected data on nurses' age, gender, and years of experience, educational achievement, and skill with technological tools and frequency of employing AI or other technology in regular job duties. All scale items were scored on a 5-point Likert scale.

Measurement

Employee Happiness (EH)

The researchers used the "Workplace Happiness Scale" formed by Salas and Vidal (2018) to evaluate the happiness in the workplace of nurses. This scale entails nine items that are in one dimension. The

modified one exhibited its high reliability, Cronbach alpha coefficient equaled to 0.89.

Innovative Work Behavior (IWB)

To assess the innovative work behaviors of the nurses, the Innovative Behavior Scale that was adopted by Çaliskan et al. (2019) was used. The scale contains six questions and adopted version was reliable as the alpha coefficient was 0.91.

Emotional intelligence (EI)

To evaluate nurses' perceptions of artificial intelligence (AI) use, the study adopted the scale developed by Shinners et al. (2022). This scale comprises ten items organized into two dimensions: the professional impact of AI and preparation for AI. The reliability of the scale, measured by Cronbach's alpha, was reported as 0.83 for the professional impact dimension and 0.63 for the preparation for AI dimension.

Job Autonomy (JA)

In order to measure the concept of job autonomy (JA) of nurses, the study employed Job Autonomy Scale (Hackman and Oldham, 1975), which has been used by various researchers after its adjustment to the healthcare context by Tong et al. (2023). This is a scale that determines the level to which employees control their choice of work, decision making, and time. The scale has seven items with one dimension and measures the level of autonomy and discretion of the job performance. According to the study by Tong et al. (2023), the adopted version of the scale showed good reliability in the form of Cronbach alpha coefficient of 0.87.

Data analysis process

The study used SPSS 27, AMOS 24, and SPSS PROCESS Macro, as statistical analysis tools to test the variables regarding descriptive, correlational, and multivariate relationships in the data. In the beginning, the study focused on the bivariate correlation analysis through SPSS that helped to examine the connection between the research scales. After that, the mediating effect of artificial intelligence (AI) usage was evaluated by the SPSS PROCESS Macro created by Hayes (2013). Mediation tests were conducted by choosing Model 4 with bootstrap sample size 5,000 in the PROCESS Macro to determine the overall effect of employee happiness on the innovative work behavior and the indirect outcome through the use of AI. Moreover, there were also one other model for moderation which was run using model 1 bootstrapped sample size of 5,000 in PROCESS Macro to observe the moderation effects.

Demographic

Table 1: Respondent Profile

Categories	Frequencies (%)
Gender	
Male	280 (80%)
Female	70 (20%)
Age	
18–28 years	87 (24.9%)
29–38 years	83 (23.7%)
39–48 years	104 (29.7%)
Above 48 years	46 (13.1%)
Qualification	
Matric	52 (14.9%)
Secondary	68 (19.4%)
Bachelor	77 (22%)

graduate	89 (25.4%)
Post graduate	39 (11.1%)
Above	13 (3.7%)
Job Role	
Administrative Staff	39 (11.1%)
Doctors	98 (28%)
Nurses	118 (33.7%)
Technicians	58 (16.6%)
Support Staff	37 (10.6%)
Total	**350 (100%)**

The study's respondent profile shows a diversified sample with unique demographic and professional characteristics. The sample consisted of 350 public workers from a tertiary care hospital in Khyber Pakhtunkhwa, Pakistan. The sample consists mostly of males (280, 80%) in contrast to females (70, 20%), indicating a gender disparity prevalent in certain public sector positions in the area. The age distribution reveals that the majority of respondents is within the 39–48 years range (104, 29.7%), followed by 18–28 years (87, 24.9%), 29–38 years (83, 23.7%), and those above 48 years (46, 13.1%), suggesting a workforce that is mostly mature, however includes a notable proportion of younger individuals. The majority possess a graduate degree (89, 25.4%), followed by a Bachelor's degree (77, 22%), Secondary education (68, 19.4%), Matriculation (52, 14.9%), Postgraduate qualifications (39, 11.1%), and higher degrees (13, 3.7%), indicating a well-educated sample with diverse academic backgrounds. Nurses comprise the majority of job positions (118, 33.7%), followed by physicians (98, 28%), technicians (58, 16.6%), administrative staff (39, 11.1%), and support staff (37, 10.6%), underscoring the significance of healthcare professionals in the sample. The features indicate a diversified, healthcare-oriented workforce, necessitating the customization of workplace interventions to accommodate different educational and professional backgrounds; yet, the male-dominated sample and dependency on convenience sampling may restrict the generalizability to other contexts.

Reliability test

Table 2: Summary of Reliability test

Variables	**EH**	**IWB**	**EI**	**JA**
	Independent	Dependent	Mediator	Moderator
Items	09	06	10	07
Alpha	0.911	0.833	0.876	0.932
Developed by	Salas &Vidal (2018).	Çalışkan et al. (2019).	Shinners et al. (2022).	Tong et al. (2023).
Results	**Reliable (> .07)**	**Reliable (> .07)**	**Reliable (> .07)**	**Reliable (> .07)**

The reliability analysis of the constructs in the research reveals high internal consistency across all variables, as indicated by their respective Cronbach's alpha values. Specifically, Employee Happiness (α = 0.911), Innovative Work Behavior (α = 0.833), Emotional Intelligence (α = 0.876), and Job Autonomy (α = 0.932) all demonstrate strong reliability, with values well above the commonly accepted threshold of 0.7 (Taber, 2018). These results suggest that the measurement scales used for these constructs exhibit excellent to good internal consistency, making them appropriate for further analysis and ensuring that the data collected can be relied upon for subsequent statistical testing.

KMO and BTS Test

Table 3: KMO and BTS Summary

Variables	KMO values	BTS Test (Chi-Square)	p-Value	Decision
Employee Happiness (IV)	0.844	472.211	< 0.05	Appropriate
Innovative Work Behavior (DV)	0.843	750.509	< 0.05	Appropriate
Emotional Intelligence (Mediator)	0.701	161.328	< 0.05	Appropriate
Job Autonomy (Moderator)	0.693	369.705	< 0.05	Appropriate

The KMO values for all variables exceed the threshold of 0.50, indicating that the sample is appropriate for factor analysis. The BTS values for all constructs are significant ($p < 0.05$), confirming that the relationships between the variables are statistically significant.

Hypotheses Testing

Table 4: Direct Effect of Employee Happiness on Innovative Work Behavior

Variables	Beta	T-Value	P-Value	F-value	R^2
Employee Happiness (IV) → Innovative Work Behavior (DV)	0.599	12.637	0.000	159.686	0.458

Regression analysis revealed a significant positive relationship between Employee Happiness and Innovative Work Behavior, with a high beta value of 0.599. This indicates that employee happiness significantly influences the level of innovation exhibited in their work. The p-value (0.000) suggests that the relationship is statistically significant, confirming Hypothesis 1 (H_1). Employees who report higher levels of happiness in their work environment tend to demonstrate more innovative behavior. For hospital staff, this could manifest as proposing new ways to improve patient care, work processes, or hospital operations.

Mediation test

Table 5: Summary of Mediation Analysis

Path	Effect Value	P Value	Indirect Effect	Direct Effect	Total Effect
Employee Happiness → Emotional Intelligence	0.45	0.002	-	-	-
Emotional Intelligence → Innovative Work Behavior	0.32	0.005	-	-	-
Indirect Effect	-	-	0.144	-	-
Direct Effect	-	0.01	-	0.36	-
Total Effect (Direct + Indirect)	-	-	-	-	0.504

Path	Effect Value	P Value	Indirect Effect	Direct Effect	Total Effect
Z Value			5.82		

Table 5 illustrates the mediating role of emotional intelligence in the relationship between employee happiness and innovative work behavior among healthcare employees in Khyber Pakhtunkhwa, Pakistan. The direct effects across all relationships are significant, and the Sobel test results ($z = 5.82$, $p < 0.05$) confirm statistical significance, indicating that emotional intelligence partially mediates the link between employee happiness and innovative work behavior. Therefore, Hypothesis H2 is supported.

Moderation test

Table 6: Employee Happiness x Job Autonomy →Innovative Work Behavior

Path	B-Value	t-Value	P-Value	R^2
Employee Happiness × Job Autonomy → Innovative Work Behavior	0.109	14.425	0.000	0.52

Moderation analysis indicates that Job Autonomy positively moderates the relationship between Employee Happiness and Innovative Work Behavior, with a significant interaction effect ($p = 0.000$). The R^2 value (0.52) suggests that 52% of the variation in Innovative Work Behavior is attributed to the combined effects of Employee Happiness and Job Autonomy. Hospital employees with more job autonomy, such as decision-making authority in their roles, are more likely to translate their happiness into innovative behaviors. For instance, nurses or doctors who have more freedom in their work decisions might propose new processes to improve patient care or hospital workflows.

The interaction between Employee Happiness and Job Autonomy plays a significant role in driving Innovative Work Behavior among healthcare professionals. When employees, such as doctors, nurses, and administrative staff, experience higher levels of happiness in their roles, they are more likely to engage in innovative behaviors, like proposing new patient care protocols or improving operational efficiency. However, the presence of Job Autonomy the freedom to make decisions and exercise control over their work strengthens this relationship. Healthcare employees who have more autonomy are empowered to implement creative solutions without constant oversight.

Discussion

The study aims to find out how employee happiness (EH) leads to innovative work behavior (IWB) in a sample of 350 random based employees of a tertiary care hospital in Khyber Pakhtunkhwa, Pakistan, where emotional intelligence (EI) role as a mediator and job autonomy (JA) as a moderator. The results support the existence of a strong positive relationship between EH and IWB where EI partially mediates the relationship with JA reinforcing it with important insights on how positive emotions, dispositional self-control, and autonomy at the workplace foster innovation in a healthcare context. These findings can be attributed to the principles of behavioral and organizational psychology especially when dealing with the practices in the field of health services in the public sector, where innovation plays the central role in the enhancement of the patient treatment and the overall effectiveness of the process.

Positive Relationship between Employee Happiness and Innovative Work Behavior

The regression analysis ($\beta = 0.599$, $t = 12.637$, $p = 0.000$, $R^2 = 0.458$) demonstrates a strong positive relationship between employee happiness and innovative work behavior, supporting Hypothesis H1. This indicates that happier employees, such as nurses and doctors in the sample (33.7% and 28%, respectively), are more likely to engage in innovative behaviors, such as proposing new patient care protocols or streamlining administrative processes.

This finding is consistent with Vallina and Vidal (2018), who found that workplace happiness fosters creativity and problem-solving by broadening employees' thought-action gatherings, as per Fredrickson's (2001) broaden-and-build theory. Similarly, Kwon & Kim, (2025) stated that positive affect enhances cognitive flexibility, enabling employees to generate and implement novel ideas. In the medical context, happy healthcare professionals may be more inclined to innovate by developing new approaches to patient engagement or adopting advanced technologies, aligning with Shinners et al. (2022), who noted that positive emotions drive nurses' willingness to embrace innovative practices.

Emotional Intelligence mediates the relationship between employee happiness and innovative work behavior.

The mediation analysis (Table 5: EH → EI, β = 0.45, p = 0.002; EI → IWB, β = 0.32, p = 0.005; indirect effect = 0.144; Sobel test z = 5.82, p < 0.05) confirms that emotional intelligence partially mediates the relationship between employee happiness and innovative work behavior, supporting Hypothesis H2. Defined as the ability to perceive, understand, and manage emotions (Schmodde & Wehner, 2024) to channel positive emotions into innovative actions. For instance, a happy nurse with high EI may use emotional regulation to collaborate effectively with colleagues, leading to innovative care solutions. This aligns with Yasmeen et al. (2022), who found that EI enhances workplace performance by facilitating adaptive responses to emotional states. In a healthcare setting, where emotional demands are high due to patient interactions, EI enables employees to transform happiness into creative problem-solving, as supported by Carmeli et al. (2014), who reported that EI mediates the link between positive affect and innovative behavior in high-stress environments. The significant indirect effect (0.144) underscores that EI is a critical mechanism through which happiness fosters IWB, particularly among doctors and nurses who frequently navigate emotionally charged situations.

Job Autonomy moderates the relationship between employee happiness and innovative work behavior.

The moderation analysis (Table 6: EH × JA, β = 0.109, t = 14.425, p = 0.000, R^2 = 0.52) reveals that job autonomy significantly strengthens the relationship between employee happiness and innovative work behavior, supporting Hypothesis H3. Employees with greater autonomy such as freedom to adjust patient care protocols or schedule tasks are better able to translate their happiness into innovative actions, such as developing new treatment approaches or improving hospital workflows. This finding is consistent with Aldabbas et al. (2025), who argued that job autonomy enhances intrinsic motivation, enabling employees to act on positive emotions creatively. In the medical context, Ghalib et al. (2024) found that autonomy fosters innovation among healthcare professionals by allowing them to experiment with new ideas without excessive oversight.

Practical Implications

The findings offer actionable recommendations for healthcare organizations in Khyber Pakhtunkhwa. To enhance IWB, hospital administrators should foster employee happiness through recognition programs, supportive leadership, and wellness initiatives, as happier employees are more likely to innovate. Training programs to develop emotional intelligence can further amplify this effect, enabling nurses and doctors to manage emotional demands and channel positive emotions into creative solutions, such as patient-centered care innovations. Increasing job autonomy, particularly for roles like nurses (33.7% of the sample) and technicians (16.6%), through flexible task delegation or decision-making authority, can enhance the impact of happiness on IWB. For instance, allowing nurses to adapt care protocols could lead to innovative patient engagement strategies. Governments and hospital management could organize workshops to educate healthcare professionals about the role of emotions and autonomy in

fostering innovation, aligning with Shinners et al. (2022), who promoter for training to support innovative practices in nursing. These initiatives could improve patient outcomes and operational efficiency, contributing to a more resilient healthcare system.

To promote innovative work behavior among healthcare professionals in a tertiary care hospital in Khyber Pakhtunkhwa, Pakistan, hospital leaders should focus on fostering an environment that enhances employee happiness, strengthens emotional intelligence, and encourages greater job autonomy, as these elements are pivotal in sparking creativity within the high-pressure healthcare setting. First, introducing tailored wellness initiatives, such as resilience workshops, relaxation programs, or appreciation events, can uplift the spirits of nurses, doctors, and technicians, motivating them to devise creative solutions like novel patient engagement strategies or efficient ward management systems that improve care delivery. These efforts create a supportive atmosphere where staff feels valued, inspiring them to contribute fresh ideas for enhancing patient experiences and hospital operations. Second, providing dedicated training programs to build emotional intelligence is crucial, especially for nurses who regularly handle emotionally charged interactions with patients and families. By developing skills in empathy, emotional self-regulation, and collaborative communication, healthcare professionals can better leverage their positive emotions to innovate, such as designing holistic care approaches or improving interdisciplinary teamwork to address complex medical cases. Finally, granting increased job autonomy by allowing nurses and doctors to make independent decisions on patient care protocols, task prioritization, or resource use can significantly boost their creative output. For example, empowering doctors to explore alternative treatment methods or nurses to adapt care plans to individual patient needs can lead to breakthroughs like optimized emergency workflows or community-based health initiatives, ultimately elevating the quality of care and operational efficiency in Pakistan's public healthcare system.

Limitations and Future Research

The study's reliance on convenience sampling and a male-dominated sample (80%) may limit generalizability, particularly for female employees or non-healthcare settings. Self-reported data on happiness, EI, and IWB may introduce social desirability bias, potentially inflating the observed effects. The sample's focus on a tertiary care hospital in Khyber Pakhtunkhwa may not fully represent other regions or healthcare contexts. Additionally, the relatively low proportion of employees with postgraduate qualifications (11.1%) and above (3.7%) may limit insights into highly educated groups.

Future studies should employ stratified or random sampling to enhance representativeness and include more diverse healthcare settings, such as rural clinics or private hospitals. Exploring additional mediators, such as organizational support, or moderators, like leadership style, could provide deeper insights into the happiness-IWB relationship. Longitudinal designs could examine how sustained happiness impacts IWB over time, while qualitative methods could uncover the specific mechanisms through which EI and JA drive innovation in healthcare. Investigating other cognitive or emotional factors, such as resilience or motivation, as suggested by Carmeli et al. (2014), could further broaden understanding. Finally, comparing the effects across job roles (e.g., nurses vs. administrative staff) could clarify role-specific dynamics in the medical context.

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