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The impact of high involvement work systems on nurses team creative performance in the public service industry of Pakistan

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The public service industry is capturing greater concentration and contributing to many countries' economic development. However, the public service industry, especially in hospitals, faces issues regarding human resource management and creative performance. Considering the lack of studies, this study seeks to examine the relationship between high-involvement work systems (HIWS) and nurses' team creative performance (TCP) in the public service industry of Pakistan. Moreover, the moderating role of work demand has also been studied by introducing cognitive workload theory in the nurse's TCP context. This study employs a quantitative research approach and survey design. Data were collected from 432 employees in public hospitals in Pakistan through a structured questionnaire. Except for personal information, items in the questionnaire were drawn from established scales used in previous studies. The present study used AMOS and SPSS (MODPROBE) to analyze the measurement and structural models. Results indicate a significant positive association between HIWSs, including power, information, and reward, with nurses' TCP. However, an insignificant positive relationship was found between knowledge and the nurse's TCP. Moreover, workload (WL) and well-being (WB) negatively moderate the relationship between reward, information, and knowledge with nurses' TCP. Results also provide evidence of cognitive workload theory (CWT) in this study. Considering the results, it is mandatorily recommended to emphasize more on the workload in the hospital industry. HIWSs should be promoted to increase nurses' TCP. The study provides practical and effective guidance for hospitals to adopt HIWS that promotes innovation and creativity. This will improve team performance and contribute to broader sustainable development goals.

Keywords High-involvement work systems, Nurses' team creative performance, Workload, Well-being, Cognitive workload theory

In this modern era, organizations compete in the global market. A country's healthcare industry significantly impacts its economy and overall health. The business environment has changed dramatically in developed and developing countries in recent years. Countries are trying to transform the public service industry, especially the healthcare industry. However, as an integral part of the country's economy, the service industry has been growing at a slower pace in developing countries such as Pakistan[1]. According to the World Factbook, Pakistan's service industry contributes 58.6% of its GDP, indicating that the service industry is a fast-growing industry and a core pillar of Pakistan's successful economic improvement[2]. The public service industry, especially hospitals, needs creative workers to provide better service quality and to maintain long-term growth[3]. Therefore, considerable attention has been given to exploring the factors influencing creativity, e.g., empowered leadership, employee motivation[4], work environment, and organizational support[5]. There is a growing awareness of nurses'

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well-being in the workplace and its impact on nurses' productivity and efficiency[6,7], which ultimately affects the performance of healthcare organizations. The healthcare industry plays a vital role in society as it meets the basic needs of the well-being and health of individuals[8]. With health issues becoming increasingly serious in rural and urban areas, public hospitals are important for everyone. According to Mastrangelo et al.[9], the effectiveness of an organization, primarily a hospital, depends on the performance of its employees. In hospitals, it is recognized that the tasks of nurses are essential to provide appropriate healthcare to all patients[9]. Pakistan's healthcare industry is booming, with new technologies, innovations, and even new practices emerging every day. Nurses are involved in all types of clinical practice and play a more important role than any other medical professional in providing 80% of patient care[8]. Nurses in healthcare organizations can communicate effectively with each other, thereby improving and managing their work through team building. Through teamwork, they provide the best care to their patients. The effectiveness of teamwork is a key factor in making important decisions in the hospital system.

However, most of the earlier studies related to hospitals focused on individual performance outcomes rather than team performance. Modern healthcare companies prioritize employee engagement in nurse team creative performance (TCP) to foster innovative outcomes[10]. In the healthcare industry, nursing team creative performance (TCP) holds significant importance, particularly because nurses' expertise serves as the foundation for patient treatment and decision-making[11]. Modern human resource management (HRM) systems and high-involvement work systems (HIWSs) are successful ways to encourage healthcare workers' participation in TCP, as evidenced by studies conducted by Zhang, et al.[12] and Bos-Nehles and Veenendaal[13]. Therefore, it is necessary to evaluate the factors influencing creative performance in hospitals as providing creative products and services has become essential to meet increasing nurses' demands[14,15]. Hospitals are an important part of the public service industry and contribute enormously to the global economic growth. However, creativity is not triggered only by individuals but is derived from team efforts[16]. The service-based industries have captured more attention in recent decades, providing more employment opportunities and contributing to countries' GDP globally. Significant growth in Asian service-based industries is contributing one-third of total output. However, the growth of service-based industries is slower than the manufacturing industry due to the lack of competitive HRM practices[17]. To become a competitive and productive organization, it is necessary to focus on both individual and team performance. Developing high-performing and innovative teams is a critical issue that needs to be addressed. The debate about maximizing and sustaining business performance has divided scholars around two models, which include the best practice model (universalistic) and the best-fit model (contingency approach). According to the universalistic approach, some human resource practices are valuable, transferable, and validated universally, that is, in any circumstances, their adaptability by an organization creates a significant positive impact on business performance[18]. These kinds of practices are termed "High involvement work systems" (HIWSs) by Mehmood, et al.[19].

Considering the situation, studies linking HIWSs and business performance, especially nurses' TCP, are insufficient[4]. Earlier studies indicated a causal link between HIWSs and TCP as a part of system theory. System theory explains the concept of "Wholeness," where overall system performance depends on subsystems[20]. Industries need desired work results, and the desired results depend on inputs, TCP is a crucial indicator of performance, which depends on strong input resources such as HIWSs[21]. Moreover, nurses' TCP leads to multiple benefits, and it has become a competitive instrument for organizations. Also, Martinaityte, et al.[22] explained that competitive tools are an essential part of organizations that determine to explore creative work experiences. But the fact is that organizations are ignoring nurses' team creative performance (TCP) surprisingly. Tight work schedules, work-family conflict, and lack of learning atmosphere have a significant role in influencing nurses' TCP. The relationship between HIWSs and nurses' TCP can be influenced by workload and well-being, which is a hot issue in HRM nowadays, however, it is rarely discussed in the public service industry. Previous studies have related TCP with the role of traditional HRM practices, high-performance work systems[23], high-commitment work systems, and team characteristics, e.g., team diversity, team proactivity, and team motivation. However, the majority of the studies ignored the importance of HIWSs, such as power, reward, information, and knowledge. Moreover, their focus was on the individual level performance, if employees were exposed to different HRM practices, they responded differently due to their characteristics[22]. However, team-level performance was ignored. Therefore, investigating these gaps, this study follows a two-level approach by introducing workload and well-being as moderators in the HIWSs and nurses' TCP link. Also, this study intends to examine the moderating effect of work demand between HIWSs and nurses TCP in the public service sector, especially in the hospital sector.

The objective of the study is to examine the influence of HIWS on nurses' TCP in the hospitals of Pakistan. Therefore, based on the accumulated knowledge, this study needs to strengthen the relationship between HIWS and TCP with workload (WL) and well-being (WB) as moderators. This study focuses on a key issue in the service industry in Pakistan and points out that HIWS affects nurses' TCP by WL and WB as moderators of the relationship between HIWS and nurses' TCP. Moreover, this study focuses on a critical issue in the hospital industry in Pakistan and addresses these research questions: How does the influence of HIWS on nurses' TCP in the hospitals of Pakistan? To what extent do the workload (WL) and well-being (WB) moderate the relationship between HIWS and nurses TCP? This study has both theoretical and practical implications. Firstly, it is based on cognitive workload theory (CWT), which is an established theory applied in many fields, including ergonomics, human factors, and neurology[24]. During the performance of a specific task, cognitive workload describes an employee's system cognitively. This study suggests that employees are being assigned to specific tasks through HIWSs; however, the increasing workload and well-being can disturb their effectiveness in performing particular tasks. Therefore, an overload of work can decrease individual performance, which leads to minimizing their contribution toward team performance. However, the application of CWT in HRM research is limited, and the causal investigation between HIWSs and nurses' TCP is also not widely discussed. Secondly, this study will be

helpful for management to develop a strategy that could enhance team creativity and performance. This study is structured as follows: Section 2 comprehensively reviews the literature and proposes hypotheses as well as the research model. Section 3 explains our research methodology and measures, and Sect. 4 presents the statistical analysis and findings. Section 5 discusses the results, draws conclusions, describes the practical implications drawn from our findings and the limitations of our study, and then proposes future research directions.

Literature and hypotheses

Cognitive workload theory (CWT)

Cognitive workload theory suggests that individuals have limited cognitive resources and become overloaded when tasks require excessive mental effort or multitasking. The theory studies the relationship between task demands and cognitive resource capacity and their effects on performance, attention, decision-making, and learning[25,26]. CWT offers a unique perspective that emphasizes the cognitive demands of tasks and how they are managed in real-time, which differs from the educational focus of cognitive load theory (CLT) and the broader behavioral framework of social cognitive theory (SCT). Disparate CWT focuses on the cognitive demands of tasks, and SCT focuses more on social and environmental influences on learning and behavior. In contrast, CLT is more professional in terms of learning and instruction. In contrast, CWT provides a framework for understanding and managing mental effort during task performance[27,28]. Cognitive workload theory emphasizes that individuals' cognitive resources are limited. In the context of HIWP, where employees may be involved in a variety of tasks or decision-making processes, it is crucial to understand how cognitive demands influence team creative performance[29]. In the team environment of HIWP, it becomes critical to understand the cognitive workload of each team member. Balancing workload among team members to avoid cognitive fatigue while maximizing creative input is critical to sustained performance. There is currently little conceptualization and empirical research on the potential interactions between HIWP, WB, and nurses TCP. Furthermore, early studies used social exchange theory and the theory of planned behavior to explain the relationship between HIWP and various employee outcomes[30,31]. Few studies have used CWT to explain the relationship between HPWP and employee outcomes. Based on CWT, this article links and proposes the latest perspective on the relationship between HIWPs, WL, WB, and nurses TCP.

High involvement work systems (HIWSs)

The concept of HIWSs encourages employees to be skillful and competent task performers in industries. HIWSs provide an appropriate way to deal with complex tasks. Through these practices, decisions are formulated and implemented by the best option, which leads to achieving organizational goals. Prior literature suggests that high-involvement work systems (HIWSs) take specific apprehension as trial approaches. HIWS factors are not only increasing the industrial effects but also raising the morale of the workers[32]. More than twenty years ago, Lawler, et al.[33] argued regarding "high involvement management" to explain the phenomena of practices that contributed to the employees' involvement. HIWSs are interrelated with high-performance work systems (HPWS), however, the literature is filled with different other terms that are interconnected with HIWSs, such as participation, involvement, and commitment.

Later on, Boxall and Macky[34] conceptualized the relationship between HIWSs with work involvement and innovative work performance, which emphasizes that low involvement in work can limit performance. HIWSs developed a coherent set of practices that is reliable across the workplace and can also strengthen other aspects of administrators in industries. Lawler III, et al.[35] identified HIWP's industrial effects into four interconnected principles that help to make specific systems of effectiveness and create a positive impact on employee commitment. These four interlinked principles that explain the role of HIWSs are power (POW), Information (INF), Reward (RWD), and knowledge (KWD). Each of these principles is discussed in the following paragraphs.

Power

The terminology Power describes that employees have the empowerment to make decisions for a specific task, which is helpful for job performance and job efficiency[31]. However, power has a low level of emphasizing authority in the decision-making environment because it can mean the last authority and responsibility in decisions and their results. Power builds possible factors assigned to an organization, for example, creative plan and work purity, which promote the plan with each other and innovative job solutions. Factors of work performance can be measured and manipulated based on this assignment. Thus, each element has performed its part of the work to achieve effective team performance[36].

Information

Information based on an organization's complete data of work concerns the organization's aim, future implementation, policies, customer dealing method, and compensation process[31]. In a high-involvement work practice environment, a manager has a big challenge to create an information system for his organization that would provide all sorts of employee data, their performance, and work process, which can also help workers see the connection between their performance and reactions[37,38].

Reward

Employees' behavior, skill, capability, power, and attitude during work are identified from motivational performances. Due to such high involvement work systems (HIWSs) level performances, employees are rewarded by organizations[31,32]. On the other hand, the reward is significantly influenced by team creative performance (TCP) efforts[37,38]. These mutual performance rewards express a system that connects with compensation and awareness of employees' working performance[19,33].

Knowledge

Knowledge acts as a skill-building process of performance[37,38]. High-involvement work systems use knowledge in the decision-making procedure in the work environment. This procedure is positively influenced by team creative performance. Furthermore, knowledge contributes to spreading mutually interconnected experiences of teamwork[31] which enhances the employees' working knowledge. Organizations improve their employees' knowledge side by side through various training programs. So, the process of knowledge enhances the employees' skills capabilities by improving their techniques and developing skills. Organizations have an important role in employees 'development to promote the involvement of workers[28].

Team creative performance (TCP)

Performance is always an essential tool in the literature framework that is based on the team and its creativity, composition of such tools, effective for the work process, and successive results. Such a structure of team creative performance may lead to useful work findings[39,40]. Many researchers argued that the composition of teamwork has positive effects, outcomes, and factors (demographic range, personality range, and team outcomes)[41]. During a team performing a task, each employee has importance because their personality traits also reflect their performance. His personality attributes include individuality, disinclined risk, triumph, attachment, requiring command, and positive effect[42]. Throughout task work, team members share the same climate, goals, and leadership, but their perception of action would be different. But in collective work, employees show congregate observation of achieving combined desires[24].

Teamwork affords creative work behavior; innovative thinking and performance organizations are successfully challenging other workforces. The main focus of organizations is teamwork rather than the use of single-individual work because combined individuals' abilities are more creative in decision-making as compared to single-individual creativity. Creativity in teamwork is a mixture of old and new ideas, and these ideas explain new thinking in the context of early thoughts. Thus, team creative performance (TCP) pursues innovative awareness, methods, and skills to achieve a productive goal[20].

Work load (WL)

This topic has a vast span. Although researchers investigate workload in the Educational sector, it covers all organizations at a different level. In the workplace, organizations create a high level of work pressure climate for obtaining the desired results. This working pressure is called workload[43]. Organizations have high expectations from employees to perform on-time, quality work. Such expectations build job tension and stress. Employers handle workload pressure with intensive responsibilities. However, workload is considered a stressful factor among employees[44]. Moreover, workload is considered as a high work pressure in a limited time zone. Employees try to perform quality work in a specific time duration[45] but sometimes the workload affects their performance. Thus, employees work with the team to minimize their workload. Employees also experience workload with high involvement work systems and try to control workload by showing team creative performance.

Well-being (WB)

Well-being is a broad concept that encompasses positive functioning and psychological well-being, including factors such as life satisfaction and happiness[46,47]. Well-being is associated with many positive outcomes, including positive relationships, better physical health, and good work outcomes[48]. WB is a state in which employees can properly manage their time or achieve a balance between the world of work, personal needs, pleasure, and family life[49]. WB allows employees to control their working time as they can manage family and other responsibilities while dealing with work demands. Therefore, WB has a positive impact on employee well-being. Well-being is not only important for individual employees to maintain good health but also for the organization as a whole, as poor well-being in the workplace can hurt performance and overall efficiency[50]. WB reduces psychological stress in employees, thereby increasing employee engagement[51]. Figure 1 presents the study model and key variables of the study, along with its hypothesis.

High involvement work systems and team creative performance

The fundamental success of the organization is to support employees' empowerment because employees have great concern with their appraisal, incentives, and rewards system. Therefore, the organization should develop such a scenario in which employees perform their work with high-involvement work systems (HIWSs) and get positive results. Further, organizations have trust in teamwork and create an environment in which employees work creatively. Team creative performance (TCP) constructs a change in organizations and extends the level of competition within the organizational community[2,52]. Moreover, team creative performance relates to the critical substance of innovative work, such as creative measures of work, innovative work ideas, appropriate use of goods, and effective use of services[53]. These essential substances increase the worth of organizational success.

The relationship between high-involvement work systems (HIWSs) and team creative performance (TCP) can increase the ability to work successfully in organizations. Researchers suggested that in the human resource department, TCP shows a positive effect on HR practices[17,22,54]. There has been a great debate on how HRM extends better organizational performance, which includes high involvement work systems (HIWSs), HR practices in high performance, and innovation in creative work[19]. The basis of knowledge, reward, authority, and technology, HIWSs act as a primary feature and generate effects on team performance. Although having the distinctive existence of team performance from HIWSs, organizations increase creativity in work[37,55]. Previous research focused on HIWSs with general team performance, such as team working tasks, had the same way of fellowship, team command, working environment, process, techniques, and working motive. Even their working awareness and interpretation had similarities. Generally speaking, old research regarding HIWS and team performance had no innovation in their work. Team members have accumulated their planning, interchange

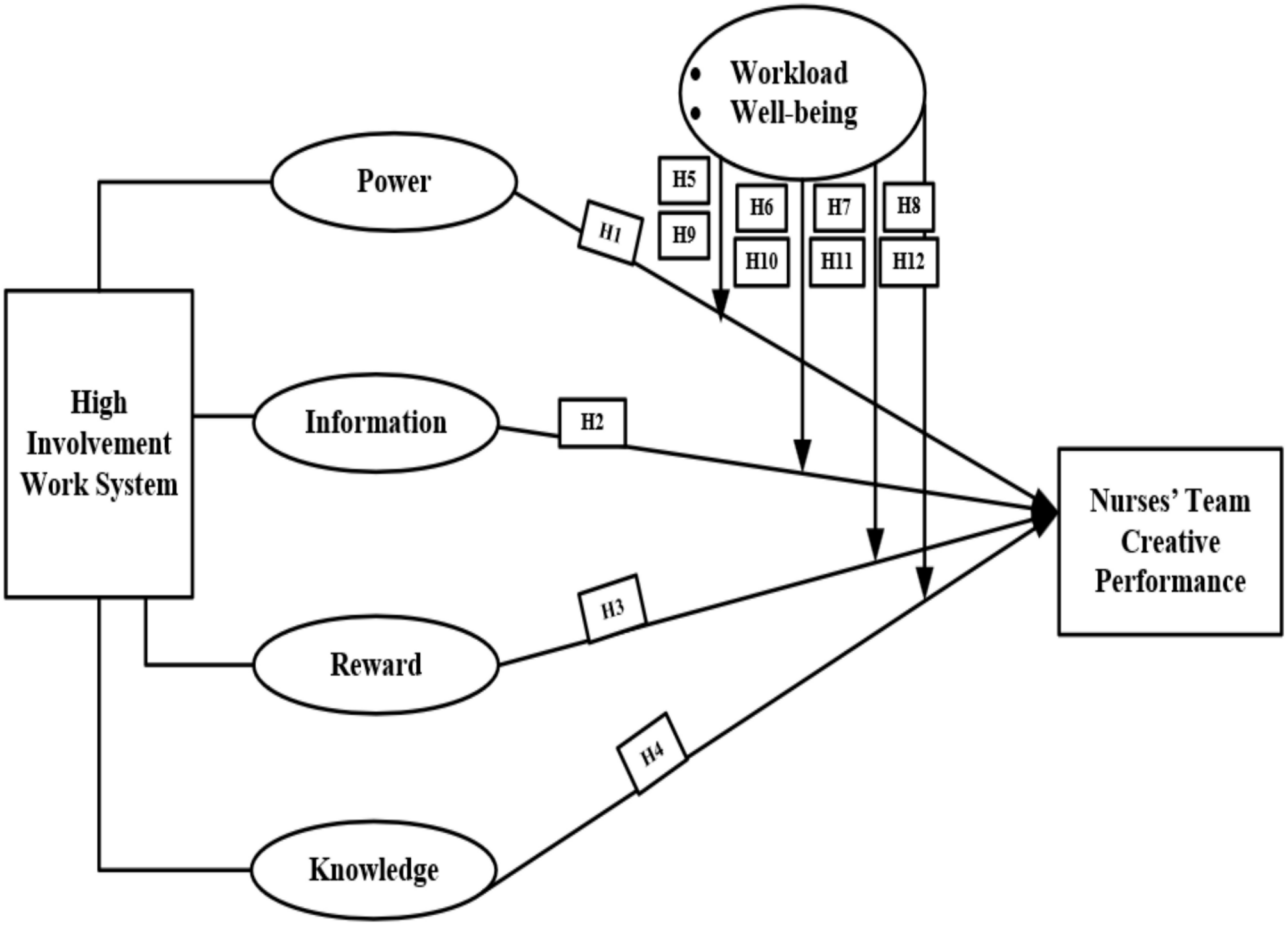

Fig. 1. Model of study.

working information, and learning perception according to the team's motivational performance[36,56]. This team's motivational performance leads toward the regulatory procedure of team creative performance (TCP). Furthermore, researchers suggested that HIWSs can be affected by TCP[16]. Thus, no prior study explained the direct relation between HIWSs and TCP and their combined role of significance in organizations.

Based on these four interconnected principles of HIWSs, the following hypothesis is made;

H1: Power is directly associated with nurses' team creative performance.

H2: Information is directly associated with nurses' team creative performance.

H3: Reward is directly associated with nurses' team creative performance.

H4: Knowledge is directly connected with nurses' team creative performance.

High involvement work systems (HIWSs), workload (WL) and well-being(WB)

According to the human resource management (HRM) department, the process of HIWSs categories with different other scopes, these scopes classify HIWSs into innovational HRM practices and contingency perception practices independently[57]. A catalog of maintenance development and performance in the HR classification system theory. HIWSs further aimed as a part of employees' improvement in working skills and motivational working performance, and also have four working traits[33]: a) empowerment of employees during the decision-making process; b) interexchange of task information; c) incentive process (e.g., the employee would be rewarded in participation, innovative information sharing, positive outcome behavior, and decision making); and d) employees' skill and essential training[58].

Lateral workload and well-being refer to organized working conditions that are classified. De Reuver, et al.[21] explained workload and well-being are those psychological and physiological job aspects in organizations that reflect the requirement of stable mental and physical conditions related to physical and psychosomatic costs. Therefore, by mental and physical conviction, workload has a structure that links with employees' contributions, requirements, roles, expectations, and customs. Employees must be able to acclimatize or adjust with psychological and physical exertion. Such exertion creates an effect on independent and dependent variables.

Moderating role of workload and well-being

This research has considered workload and well-being as a moderator between HIWSs and nurses' TCP. Workload and well-being relation with nurses' TCP is described a bit in Western studies[59]. However, in the

context of HIWSs, workload, and well-being studied as a meta-analysis, established relations among HIWSs with working hours (22 samples) and supposed workload (10 studies) have significant ties with the workload and working hours. Thus, on the eastern side, there must be conduction of such working findings[5,21].

In the hospital context, there is extensive pressure of work on employees, and employees often face conflicting demands from hospitals, administrators, and nurses, these conflicts create tension or dissonance for patients. Investigating workload and well-being is important[60]. In this research paper, workload and well-being contribute as a moderating role between the independent variable HIWSs (power, information, rewards, and knowledge) & the dependent variable nurses' TCP. The workload as a moderator considers a remarkable difference between independent and dependent variables. However, researchers didn't give attention to the load's moderating role and only believed that workload is psychological pressure. It can be used by non-investigational techniques and objectively can be considered as a particular work behavior in the minimum period. Furthermore, workload is considered an activity that is essential for the work environment[45].

In this investigation, workload judgment is a technique that affects the intensity of nurses' TCP and HIWSs in Pakistan's public service industry. In the daily routine of a hospital, authorities deal with many patients that produce a workload. High-involvement work systems (HIWS) cope with this workload and contribute to a beneficial developing process that promotes the best customer services in hospital management. Moreover, HIWSs are also helpful for decreasing the workload effects and increasing the team's creative performance. However, the primary focus of workload with the hospitals is to enhance the hospital authorities' work performance and to handle the flow of patients in a limited period. Thus, the workload can be utilized as an indicator, which can be beneficial to treating the flow of patients in the limit zone. Based on previous researchers' points of view, the hypothesis is built as under:

H5: Workload performs a moderating role among power and nurses' team creative performance.

H6: Workload performs a moderating role among information and nurses' team creative performance.

H7: Workload performs a moderating role among reward and nurses' team creative performance.

H8: Workload performs a moderating role among knowledge and nurses' team creative performance.

Mainly, well-being (WB) has a portion of the mental health and psychological field. WB has been based on the generous, worthy working environment, which has a generally convenient condition of the workplace. Virtually, this term explains the relations between employees and the psychological well-being. However, researchers related WB with other factors such as WB studied with job satisfaction and performance, WB with employees' mood, WB with behavior, and WB generosity with socially connected and job stress[61,62].

WB has many possible challenges. In an organization, workers can complain regarding work environment quality, insolvent environmental acceptance, working limitations, and imitation in reactions and responses in a challenging environment[62]. Also, the quality of WB can be expected to be an interface between two variables, HIWS and TCP. In this study, if the HIWS condition is high with the combination of low WB quality, TCP would be higher. Consequently, in contrast, it considers that WB quality can rise high with the intensity of HIWS, which would be unrelated to the intensity of TCP. As a bonus, these effects appear to continue over time, in part because happy and unhappy people recall events differently. In fact, as a general result, sustained attention to positive emotions expands and builds on these positive impulses, creating a potential "upward spiral" effect that helps further improve one's character[50,51]. This ability to constructively experience positive emotions is considered a fundamental human strength. Hence, based on the research literature, the following hypothesis has been constructed:

H9: Well-being performs a moderating role among power and nurses' team creative performance.

H10: Well-being performs a moderating role in information and nurses' team creative performance.

H11: Well-being performs a moderating role among reward and nurses' team creative performance.

H12: Well-being performs a moderating role among knowledge and nurses' team creative performance.

Based on the study model, a total of four hypotheses (H1-H4) have been developed based on the direct relationship between the independent variable HIWSs (four dimensions) and the dependent variable TCP. Further hypothesis (H5-H8) presents the moderating role of workload between HIWSs and TCP. The last hypothesis (H9-H12) describes the moderating relationship of well-being between HIWSs and TCP.

Method

Design and sampling

This research investigates the effect of HIWSs on nurses' TCP with the moderating role of work demand with its elements WL and WB. To achieve the study objective, data were collected from the public service industry, more specifically from the hospital sector of Pakistan. Two research assistants were employed from a major university in the twin cities of Islamabad and Rawalpindi of Pakistan to interact with HR managers and departmental heads operating in the hospitals to participate in this survey. This study adopted a quantitative cross-sectional survey design. Earlier studies found that cross-sectional and survey-based data collection is a widely used and cost-effective method to collect data from a larger population[63]. Further, to solve the issues related to population and sampling, a combination of sampling techniques was utilized[64]. Considering the context of the study, it utilized a purposive sampling technique along with a snowball sampling technique. The cross-sectional and survey-based data were collected from 670 employees, including 60 team heads of 27 targeted hospitals whose work influenced the team performance. The sample size for this study met the minimum requirements for analysis, ensuring adequate statistical power and model stability[65]. The decision to include team leaders was made to gain a broader perspective within the selected hospitals. This number represents the total number of employees in the selected hospitals to ensure a comprehensive understanding of the workforce dynamics.

Data collection

Earlier studies found that cross-sectional and survey-based data collection are widely used and cost-effective methods to collect data from a larger population[66]. The data collection period was from March 2023 to September 2023. Initially, the study objective and scope were communicated to the managers, and then it was requested to identify other colleagues, as questionnaires were distributed to team members through their heads. Moreover, confirmed the schedule for the official meeting. Both research assistants met with officials, including human resource managers and team heads, as designated from upper-level managers to head nurses. Both research assistants requested managers to classify their coworkers, and survey questionnaires were distributed to subordinates by their team heads in several departments. A target sample is 670 survey questionnaires dispersed, from which 485 responses were received. The final sample after the elimination of missing values was 432 questionnaires, and the further analysis rate was 65%. In addition, a detailed description of demographic information is seen in (Table 1).

Ethical consideration

The study was conducted taking into account the basic research ethics of the Declaration of Helsinki[67]. To ensure adherence to ethical principles, we got official written approval School of Management from the Research Ethics Committee of Jiangsu University. All participants provided written informed consent, and their anonymity was guaranteed. Finally, participants were assured that the data would be used for academic research only and no personal information would be released.

Measures

HIWS as an independent variable was based on power, information, reward, and knowledge, which were calculated by using an eight-item scale. Workload (WL) and well-being (WB) (moderator) were measured using an eight-item scale, and TCP as a dependent variable was calculated by using a four-item scale. All procedures used a 5-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree. Further details about the measure are given below:

High-involvement work systems

HIWS scale, including four practice dimensions from the previous studies, was calculated using an eight-item scale developed by Lawler, et al.[33]. The four practices include me) Power (two items with **α = 0.77**, In an awkward situation, employees have the power to make a decision. Employees can take participation in the decision-making process.), ii) Information (two items with **α = 0.89**, Information passed among employees. Information related jobs task, and goals must share.), iii) Reward(two items with **α = 0.70**, The reward must be performance based. The reward is a motivational factor for employees) and iv) Knowledge (two items with **α = 0.80**, Knowledge should be extended through different training plan. Employees should be familiar with rule and regulation.). All items employed a 5-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree.

Demographics	Frequency (%)
Gender	
Male	157(36%)
Female	275 (64%)
Age	
20–30	192(44%)
30–40	115(27%)
40–50	90(21%)
> 50	35(8%)
Level of education	
Diploma in nursing	136(31%)
Graduate	180(42%)
Master	116(27%)
Job designation	
Nurses	255(59%)
Head nurses	72(17%)
Department heads	60(14%)
HR managers	45(10%)
Tenure in hospital industry	
0–5 years	165(38%)
6–10 years	123(28%)
11–15 years	94(22%)
16–20 years	50(12%)

Table 1. Demographic respondents information.

Team creative performance

TCP was measured with a four-item scale developed by Lewis[68].TCP includes (four items with **α = 0.72**, Team members perform their work originally and practically individually. Each member should be able to generate his creative idea as a team. Each member should have the ability to promote his ideas as a team. Each member should be capable of creating a creative solution to the problem as a team. Participants indicated each item employed by a 5-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree.

Workload and well-being

The work demand scale, including two practice dimensions from the previous studies, was measured using a four-item scale developed by Groenewegen and Hutten[69] and Alzadjali and Ahmad[48], respectively. The two variables include i) Workload (Four items with **α = 0.89**, Ability to handle patient care efficiently. Ability to control a large number of customers. Well manage customer service hours. Hours for administrative training.) and ii) Well-being(Four items with **α = 0.86**,e.g., Are you able to focus on what you are doing?, Are you able to enjoy normal daily activities?, Are you positive about yourself? and Are you happy?). All items employed a 5-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree.

Data analysis

The analysis was performed by using SPSS(MODPROBE) and AMOS 26, the reliability of scales was assessed by using Cronbach's Alpha, and validity was judged through factor loadings, average variance extracted (AVE), and inter-item reliability[55]. According to defined criteria, all the factor loading and AVE values should be greater than 0.50, and inter-item reliability should be greater than 0.70[70]. Table 2 results show reliability and validity.

A comparison between the values of squared correlation (SC) and AVE among the construct directs to assess discriminant validity. According to the given criteria, all AVE values should be higher than the SC values to justify the model of study and to proceed with further analysis. In Table 3, AVE values were placed at the diagonal matrix of correlation analysis and ranged from 0.642 to 0.896, also greater than their relevant correlation values (range from 0.32 to 0.51). Results prove that the measurement model is reliable and validated.

To prove model fitness, measurement and structural model were both judged through different model fitness parameters, including x^2/df (1.183, 1.035), GFI (0.995, 0.905), CFI (0.991, 0.993), IFI (0.997, 0.991), TLI (0.998, 0.995), and RMSEA (0.022, 0.008). Both models possessed recommended values of model fitness, matching the criteria of Bagozzi and Yi[71] as shown in (Table 4).

Results of hypothesis

Results show that hypotheses 1 to 4 demonstrate highly positive relations among independent variable high involvement work systems (HIWSs) and dependent variable team creative performance (TCP). H1 shows a

Variables	Variables statement	Factors loading	Source of items
High involvement work practices			
Power mean = 2.92, Std. Dev. = 0.69, α = 0.77, AVE = 0.558	In an awkward situation, employees have the power to make a decision	0.763	Lawler III, et al.[35]
	Employees can take participation in the decision-making process	0.731	
Information mean = 3.27, Std. Dev. = 0.77, α = 0.89 AVE = 0.586	Information passed among employees	0.779	
	Information related jobs task and goals must share	0.752	
Reward mean = 2.38, Std. Dev. = 0.91, α = 0.70 AVE = 0.644	The reward must be performance based	0.854	
	The reward is a motivational factor for employees	0.747	
Knowledge mean = 3.86, Std. Dev. = 0.75, α = 0.80, AVE = 0.501	Knowledge should be extended through a different training plan	0.760	
	Employees should be familiar with rule and regulation	0.642	
Team creative performance			
Mean = 3.43, Std. Dev. = 0.87, α = 0.72, AVE = 0.599	Team members perform their work original and practical individually	0.896	
	Each member shouldbe able to generate his creative idea as a team	0.849	Lewis[68]
	Each member shouldhavethe ability to promote his ideas as a team	0.572	
	Each member shouldbe capableof creatinga creative solution to the problem as a team	0.740	
Work load			
Mean = 3.40, Std. Dev. = 0.82, α = 0.89, AVE = 0.521	Ability to handle customers care efficiently	0.725	Groenewegen and Hutten[69]
	Ability to control a large number of customers	0.675	
	Well, manage customer service's hours	0.734	
	Hours for administrative training	0.750	
Well-being			
Mean = 3.47, Std. Dev. = 0.80, α = 0.86, AVE = 0.511	Are you able to focus on what you are doing?	0.721	Alzadjali and Ahmad[48]
	Are you able to enjoy normal daily activities?	0.677	
	Are you positive about yourself?	0.736	
	Are you happy?	0.723	

Table 2. Factors loading and reliability analysis.

Construct	Power	Information	Reward	Knowledge	TCP	WL	WB
Power							
Information	0.511**						
Reward	0.375*	0.423**					
Knowledge	0.382*	0.343*	0.466**				
TCP	0.394*	0.373*	0.357*	0.333*			
WL	0.347*	0.333*	0.356*	0.372*	0.492**		
WB	0.341*	0.337*	0.360*	0.375*	0.490**	0.320*	

Table 3. Correlation analysis. $P < 0.05$**, $P < 0.1$*.

Sr	Goodness-of-fit criteria	Suggested index values	Measurement of model	Structural model
1	p-Value	0.05 ≤ 1.00	0.094	0.262
2	$(\chi 2/df)^a$	0 ≤ 2	1.183	1.035
3	$(GFI)^b$	0.09 ≤ 1.00	0.995	0.905
4	$(CFI)^c$	0.09 ≤ 1.00	0.991	0.993
5	$(IFI)^d$	0.9 ≤ 1.00	0.997	0.991
6	$(TLI)^e$	0.9 ≤ 1.00	0.998	0.995
7	$(RMSEA)^f$	0 ≤ 0.08	0.022	0.008

Table 4. Model fit of study. a = Relative chi-square; b = Goodness-of-fit index; c = Comparative fit index; d = Incremental fit index; e = Tucker-Lewis index; f = Root mean square error of approximation.

significant relationship between HIWSs' variable Power and TCP. The results hypothesis is that if the workers have the power to perform the task, they will prove their team's creative performance (TCP) ($\beta = 0.381$, $P < 0.01$). Hypothesis H2 illustrates that HIWSs' variable Information has positive significance with TCP ($\beta = 0.121$, $P < 0.1$). Results of H3 hypothesize that there is a partial correlation between HIWSs' variable Rewards with TCP. However, these variables are significantly associated with each other ($\beta = 0.421$, $P < 0.01$). The H4 hypothesis's results show there is an insignificant positive relationship between knowledge and team creative performance ($\beta = 0.143$, $P > 0.1$), which underscores the importance of knowledge in an organizational context.

Hypothesis 5 to hypothesis 8 proposed a moderating effect of the workload in between high-involvement work systems and team creative performance. Moderation analysis was conducted through guidelines of the study of Hayes, as it suggests using MODPROBE macro, which is a useful tool to calculate the moderating effect on complex multivariate models easily. MODPROBE macro with 5000 bootstrap samples was incorporated by introducing HIWSs (Power, information, reward, and knowledge) as independent variables, team creative performance as the dependent variable, and workload as a moderating variable. Cohen and Wills[72] recommended criteria to evaluate the moderating effect at values of one standard deviation (SD) above the means and one SD below the mean. Moreover, the presentation of moderating impact was shown through a slope significance test developed by Jeremy Dawson, and slopes were drawn through the "Two-way interaction effect" macro in Microsoft Excel (available on http://www.jeremydawson.co.uk/slopes.html)[73].

Results showed a significant moderating effect of the workload between power and team creative performance ($\beta = 0.235$, $P < 0.1$), as shown in (Table 5 and Fig. 2a). A high level of power and workload leads to effective team creative performance. It leads to accepting hypothesis 5. The partial moderating effect of the workload between information and team creative performance was found ($\beta = 0.091$, $P > 0.1$). The slope effect is shown in (Fig. 2b). It shows that there is the same trend in direct and moderating influence, with no change due to the inclusion of the moderator in the independent-dependent relationship. Despite the lack of immediate impact between rewards and team creative performance, Fig. 3a describes that the significant moderating effect of workload exists between reward and team creative performance ($\beta = -0.06$, $P < 0.05$), leading to acceptance hypothesis 7. Lastly, a significant moderating association between knowledge and team creative performance was not found ($\beta = 0.05$, $P > 0.1$), as shown in (Fig. 3b).

The moderating role of well-being found between power and team creative performance H9 ($\beta = 0.114$, $P < 0.1$) as shown in (Table 5 and Fig. 4a); reward and team creative performance H11 ($\beta = 0.236$, $P < 0.05$) as shown in (Table 5 and Fig. 4b). The results of hypotheses H9 and H11 show that power and rewards have partial significance in team creative performance. Whereas, the well-being moderating role was not supported in between information and team creative performance H10 ($\beta = -0.086$, $P > 0.1$) as shown in (Table 5 and Fig. 5a); knowledge and team creative performance H12 ($\beta = -0.01$, $P < 0.1$) as shown in (Table 5 and Fig. 5b).

Discussion

An input-out-based model was constructed in this research. The main model focus was to integrate HIWSs to get better nurse TCP in the hospital sector of Pakistan. The results showed that there are positive relationships between HIWSs and TCP. However, the results of HIWSs' indicators of knowledge and rewards described the negative significance of TCP. Moreover, workload (WL) and well-being (WB) performed the moderating role

Relationships	β	SE	β	SE	Decision
Step 1: direct effects					
H1: POWER–>TCP	0.381***	0.045			Significant
H2: INFORMATION–>TCP	0.121*	0.036			Significant
H3: REWARD–>TCP	0.421***	0.035			Significant
H4: KNOWLEDGE–>TCP	0.043	0.038			Insignificant
Step 2: moderating effects					
H5: POWER*WL–>TCP			0.235*	0.048	Significant
H6: INFORMATION* WL –>TCP			0.091*	0.037	Significant
H7: REWARD* WL –>TCP			−0.06	0.035	Insignificant
H8: KNOWLEDGE* WL –>TCP			0.05	0.038	Insignificant
H9: POWER*WB–>TCP			0.114*	0.045	Significant
H10: INFORMATION*WB –>TCP			−0.086*	0.037	Significant
H11: REWARD*WB–>TCP			0.236**	0.035	Significant
H12: KNOWLEDGE*WB->TCP			−0.01	0.036	Insignificant

Table 5. Results of hypothesis (Modprobe output). *P < 0.01****, *P < 0.05***, *P < 0.1**.

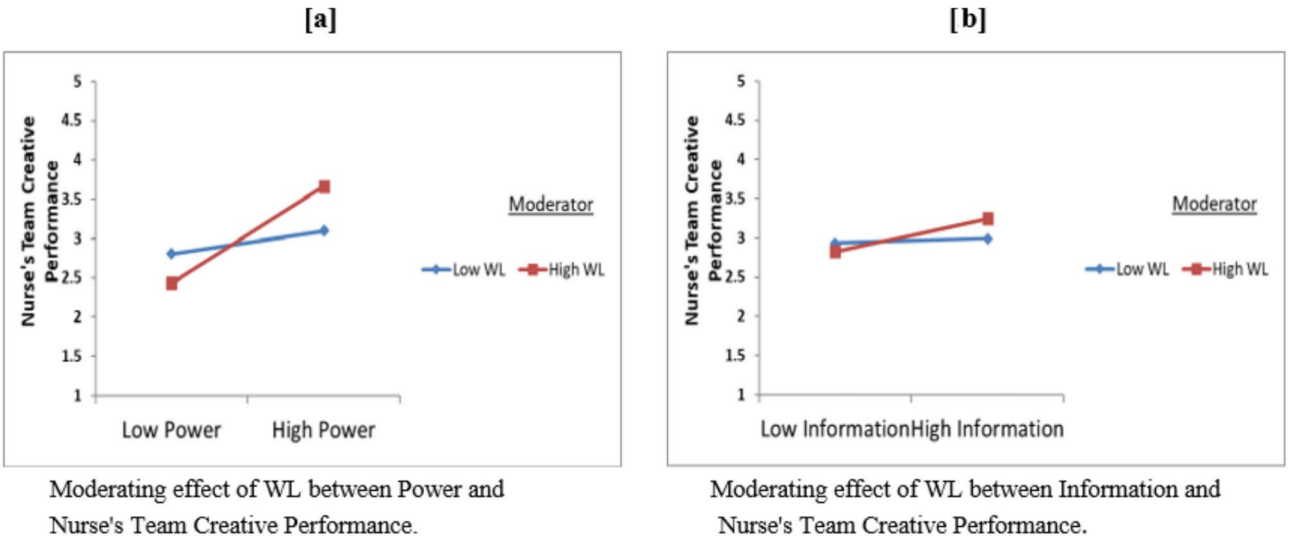

Fig. 2. Moderating effect of workload on power & information-team creative performance relationship.

among HIWSs and TCP significantly, but in the case of HIWSs' indicator information, the moderating role of WL and WB would be null. Regarding the hypothesis, as mentioned above, all the indicators of HIWSs were significantly associated with the team's creative performance except knowledge (H1 to H4). These results contradicted the previous studies, as Shin and Konrad[74] and Oppenauer and Van De Voorde[75] found a positive relationship between all HIWSs and performance. The insignificant relationship of knowledge with the TCP might be due to a lack of contemporary management practices, which can be overcome through training and workshops. Further, the moderating relationship of workload (H5 to H8) between HIWSs and TCP worked for all practices except information. The results are also justified from the previous literature[21]. It signals the importance of workload in hospitals and emphasizes that workload and schedules should be appropriately managed for hospital employees. Otherwise, a high workload can decrease creativity among different hospital teams[76]. Along with the workload, the well-being of the team is also a significant indicator of fostering team performance. The interaction results found that supportive well-being (H9 to H12) may increase the team's creative performance. The results were in line with the previous studies, as previous studies emphasized the importance of supportive well-being in hospitals[62]. Furthermore, our study revealed unique roles played by workload and well-being in Pakistani hospitals. We supported the hypothesis that workload and well-being would enhance the effects of HIWS on promoting TCP. However, contrary to previous findings in the literature (e.g.[52,77]), the results showed that HIWS was associated with enhanced creative performance. It signals the importance of workload in hospitals and emphasizes that workload and schedules should be appropriately managed for hospital employees. Otherwise, a high workload can decrease the creativity among different hospital teams[76]. Along with the workload, the well-being of the team is also a significant indicator of fostering team performance. The interaction results found that supportive well-being may increase TCP. The results were

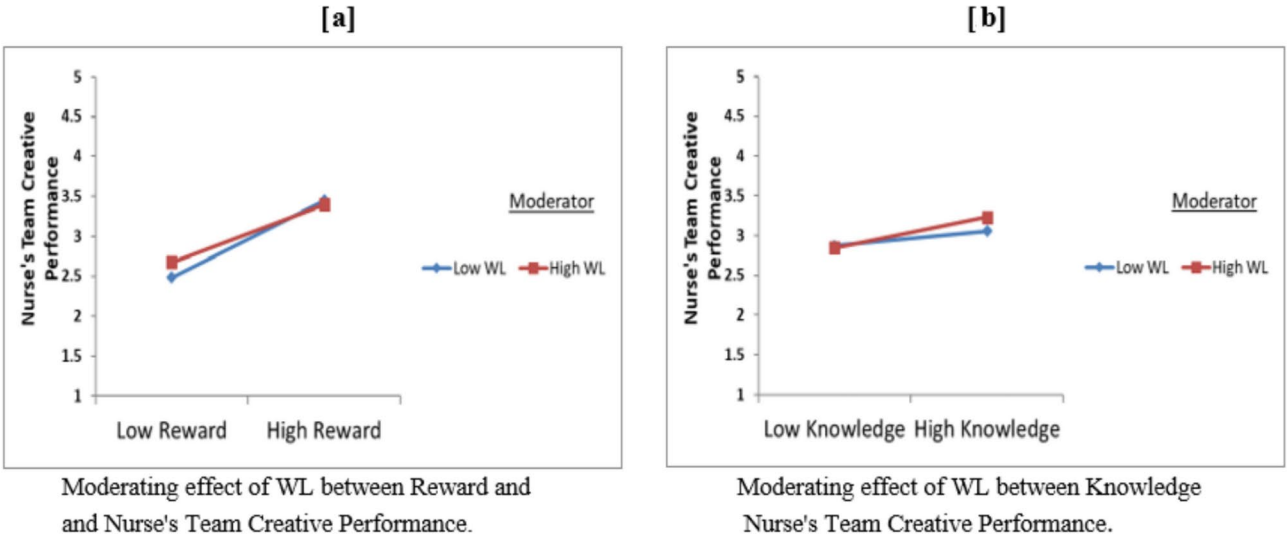

Fig. 3. Moderating effect of workload on reward & knowledge-team creative performance relationship.

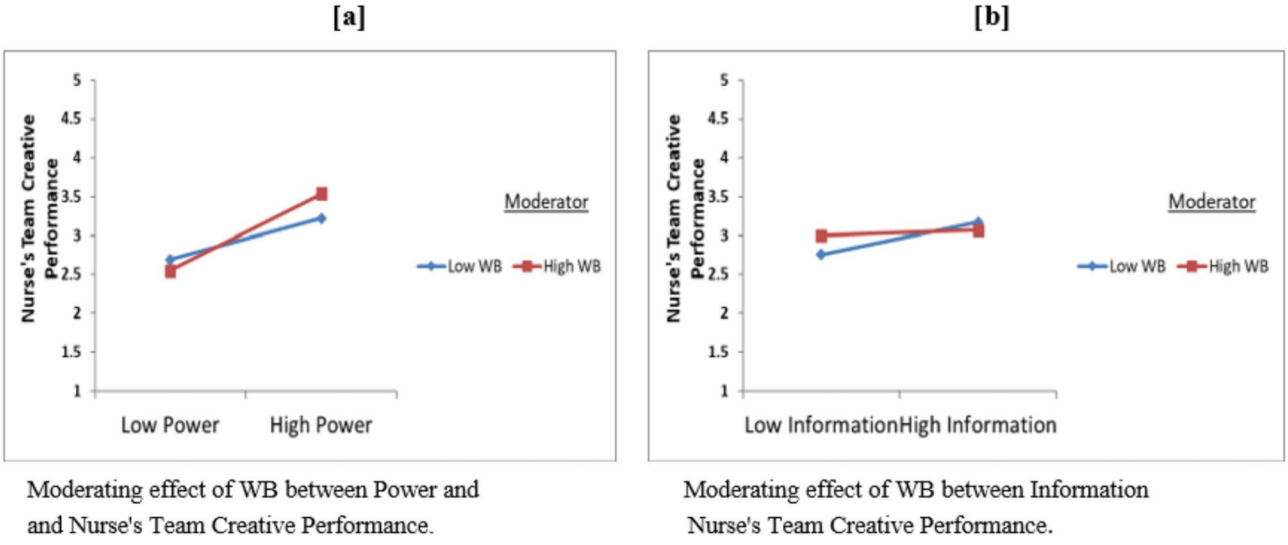

Fig. 4. Moderating effect of well-being on power & information team creative performance relationship.

in line with the previous studies, which emphasized the importance of supportive well-being in hospitals[62]. Employees who feel a deep sense of belonging and commitment to the organization, have strong support from their managers, maintain a work-life balance, and work in an organization that prioritizes team creativity, performance through HIWS are more likely to have better overall achievement.

Theoretical contribution

In the hospitals' context, this investigation is helpful to contribute to the key driving force promoting TCP. However, past literature ignored HIWSs' significance in the scenario of team creativity performance (TCP). This study contributed by using the multilevel model of HIWSs, which includes power, information, rewards, and knowledge. Most of the earlier studies consider it as a single level for all individual, team, and organizational perspectives[40]. This study explored the relationship between HIWSs and team creative performance in a different way, which has been done by very few studies at the individual level but not at the team level. Such relationships should be investigated as HIWS may be one of the most significant, expensive, and controllable in a hospital context.

On the other hand, previous studies showed high significance between the HIWSs variable rewards and TCP[19]. However, this investigation suggests that rewards have insignificant relations with TCP because rewards create stress on TCP and have emotional results. It is also considered a hazard on TCP. Workload (WL) and well-being (WB) as a moderator overcome stress and enhance TCP. It also motivates HR practices to perform TCP[24]. Thus, the consequences are also reliable with previous learning, highlighting the need to decrease workload and

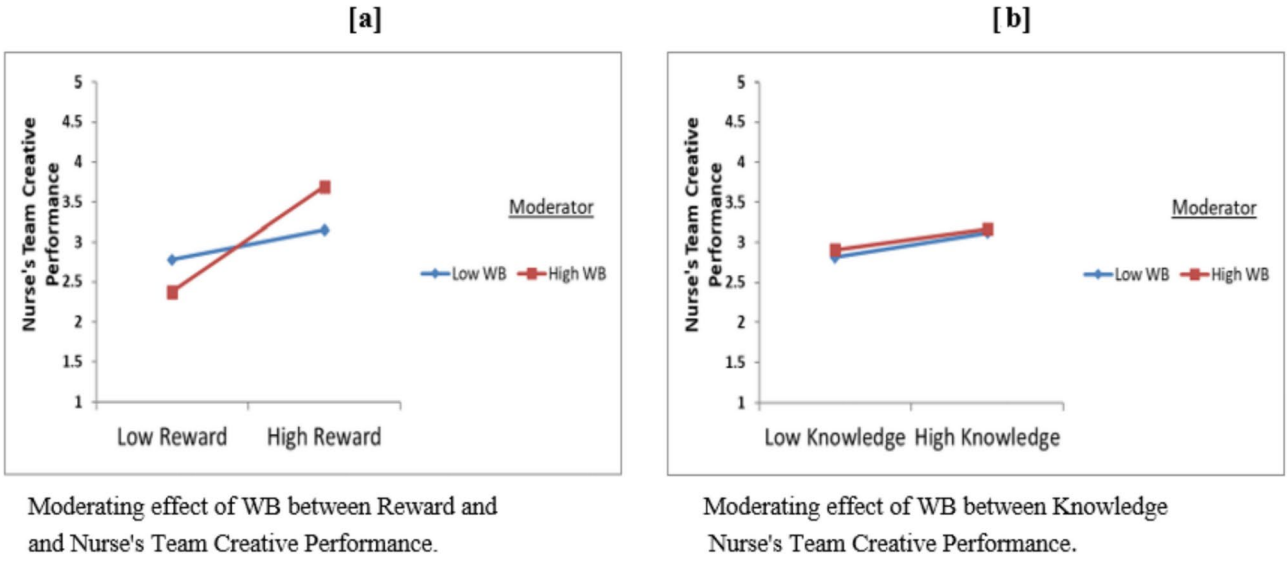

Fig. 5. Moderating effect of well-being on reward & knowledge-team creative performance relationship.

well-being in the context of team performance. These results also claim that a high workload may decrease the innovative perspective among employees. CWT is used to identify and categorize various resources within the domain of HIWS and organizational operations. This study extends the current body of knowledge by specifically addressing individual responsibility, independence, and empowerment of employees at all levels, providing novelty in the context of HIWS research in the hospital. These results verified the application of CWT in this context and are consistent with the earlier studies, as workload and well-being significantly play a vital role in improving individual and TCP[24]. Team members should interact with each other to share their workload, which could help supervisors and management distribute the proper workload among teams and nurses. This study shows that workload and well-being lead to the formation, implementation, and reconsideration of service-friendly ideas, thereby improving the creative performance of teams. HIWS, while also providing a framework promoting clear employee engagement with their tasks and processes, which may lead to theoretical merits[78].

Practical implications

This research has multiple potential consequences for the public service industry in Pakistan. The findings of the study recommend hospitals can increase work creativity through HIWSs. Additionally, HRM practices are the most significant influence on nurses and teams within the hospitals. From the multilevel model of HIWSs involving power, information, rewards, and knowledge, HR managers should find out the relevancy of practice to increase employee or team performance. Changing business environments and cut-throat competition direct hospitals to prioritize HIWSs to survive and focus on TCP[53]. The primary focus of the hospitals should be team performance, which enhances the creativity of nurses, and the team performance should be based on high-involvement work systems (HIWS), which are the main idea of this study. In the team creative performance (TCP), creativity obtains competitive benefits. This creativity should depend on both the individual and the team. HIWS variable knowledge is considered an insignificant predictor with TCP because organizations should arrange the training sections to extend the employees' working knowledge and communication skills.

Moreover, organizations should carefully apply the HIWSs with increased TCP as the Asian countries had the conventional approach to power behavior and were disinclined to adopt the transformation of organizations. Pakistan's hospital industry, adopting a high-involvement work system (HIWS), provides a practical framework for enhancing team creativity. By empowering employees, promoting collaboration, managing workload, and encouraging a supportive and open work environment, hotels can foster a culture of creativity. This will lead to better service differentiation, improved guest experience, and long-term competitive advantage in the increasingly dynamic and competitive hospital industry. Secondly, this research found an important part of workload and well-being among HIWSs and TCP. Hospitals should give special consideration to workload and well-being while trying to boost creativity. Extensive duties, tight work schedules, supervisor's strictness, and negative feedback may decrease teams' creativity and push them to focus on current responsibilities rather than making them proactive.

Limitation and future research direction

This investigation has a significant background other than having a specific limitation. Firstly, the focus of this study is only on Pakistani hospitals with a limited population. However, it can be applied to other Pakistani healthcare industries. Secondly, this investigation can apply to all Asian countries as well. Moreover, the data in this study is cross-sectional. For the future view, longitudinal data can also be used for significant results.

Further, the study model of this study introduced the moderating role of workload and well-being in the relationship between HIWSs and TCP. However, this relationship can further be validated by introducing

different mediators or moderators. However, other different variables can also consider mediating roles of different variables, e.g., internal social structure, knowledge management capacities, and collective efficacy[53]. For future work, contextual factors such as cultural values and team climate can also be used for moderating roles. Thus, several psychological or economic variables can also be used as moderators between HIWSs & TCP for future research. Finally, other studies can also analyze the results in the light of the recommendations of Khalilzadeh and Tasci[79], where a large sample size can be considered and can also report effect size measures such as Etta or Omega squared values for moderation effects, Cohen's f-square for regression coefficients to obtain an in-depth view of results.

Conclusion

Creativity is an important aspect of the public service industry, especially in hospitals where promoting creativity and innovation can bring fruitful results in organizational performance. However, hospitals in developing countries, especially in Pakistan, do not consider contemporary management practices. Considering the scarcity of studies analyzing the role of HIWSs on TCP, this study aimed to analyze the role of HIWSs enhancing TCP by moderating the role of workload (WL) and well-being (WB). Results found that the association between HIWSs and team creative performance is significant for nurses' team functioning, and this study found that HIWSs such as power and rewards are required and supportive when there is a tight work schedule. It is challenging for teams to effectively manage a well-being that cannot be alleviated by doing more and more work or following traditional work practices. It also validates the application of CWT in the nurse's team performance context. This study provides a way to cope with a challenge by introducing different practices to make teams more proactive, sharper, and work smarter. Therefore, our findings recommend that improvement in the work environment is possible through HIWSs and innovation. Hospitals can gain a competitive advantage by implementing HIWSs. However, significant training and workshops are necessary to promote HIWSs.

Data availability

The current study data are provided within the manuscript.

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Declarations

Competing interests

The authors declare no competing interests.

Ethics approval

The concerned authorities approved the questionnaire and methodology of the current study.

Consent to participate

Informed consent was obtained from all individual participants included in the study.

Additional information

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