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Investigating the level and predictors of nursing care quality and its correlation with workplace ostracism and innovative work behavior: approach for workplace and practical enhancement

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Abstract

Background The relationship between workplace ostracism and innovative work behavior is a relatively new area of research. How ostracism influences nurses' willingness to suggest new ideas or adopt innovative practices is not fully understood. Therefore, this study aimed to determine the level and predictors of quality of nursing care and evaluate its correlation with workplace ostracism and innovative work behavior.

Methods A cross-sectional correlational descriptive study involving 266 conveniently sampled nurses was conducted in three public hospitals in Hail City, Saudi Arabia. This study followed the STROBE Checklist. Data were collected using a questionnaire that included three tools: Workplace Ostracism Scale, Innovative Work Behavior Scale, and Quality of Nursing Care Scale. Pearson's correlation coefficient was used to determine the relationships between study variables. Furthermore, multiple linear regression analysis was conducted using innovative work behavior and gender as independent variables. Statistical significance was set at a p-value of < 0.05.

Results The ostracism level was high among the nurses (50.38%), half of them had a negative IWB (51.10%), and (41.40%) had a mild level of quality of care. Ostracism was negatively and significantly correlated with the quality of care (rs=-0.159, $p = 0.009$) and IWB (rs=-0.146, $p = 0.017$). Furthermore, IWB among nurses was positively correlated with the quality of care (rs = 0.376, $p < 0.001$). Multiple linear regression revealed that the IWB was considered a significant factor in the quality of care (B = 0.187) at p-value < 0.001.

Conclusion and implications for nursing This study found a negative relationship between workplace ostracism and innovative work behavior, which shows that nursing may seek innovation as a way of dealing with stressful exclusion circumstances. It was set up that the "idea sustainability" dimension of innovative work behavior is the most dominant predictor of the sustainability of nursing care's quality, which underlines the need to build on innovative

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ideas for improvement in nursing quality of care. To improve nurses' performance, health organizations must focus on strategies that block workplace ostracism and integrate innovative work behaviors in their nurses.

Clinical trial number Not applicable.

Keywords Emotional labor, Healthcare performance, Nursing workforce management, Professional resilience, Work environment exclusion

Introduction

A toxic workplace plays an important role in employees' performance and mental health. Many toxicities in today's workplace can result in psychological trauma, psychological issues [1], low self-esteem, and dysfunctional social behaviors such as bullying and destructive leadership [2]. Jurik and Cavender (2016) [3] argued that effective innovation management and a sustainable workplace depend on toxicity control. Individuals who undergo workplace ostracism, commonly referred to as "cold violence," perceive themselves as marginalized and excluded by their peers [4]. As articulated by Hitlan et al. (2006) [5], this phenomenon constitutes the "exclusion, rejection, or neglect of an individual (or group) by another individual (or group) that constrains one's capacity to cultivate or sustain positive interpersonal relationships, achieve work-related success, or maintain a favorable reputation within one's professional environment."

This dilemma is a pervasive concern that affects organizations globally. As posited by Rudert et al. (2021) [6] ostracism represents a form of social rejection in which the affected individual endures psychological distress. Moreover, it is often difficult to ameliorate feelings of exclusion or neglect. Notably, even in the absence of overt physical violence, ostracism can cause significant emotional suffering. According to contemporary research, ostracism exerts a profoundly detrimental influence on individuals' attitudes and behaviors, manifesting in phenomena such as the propensity for hostility, engagement in hazardous activities, emotional exhaustion, burnout, and other adverse outcomes [7]. Ostracism within the workplace is associated with a multitude of adverse consequences, including employee turnover and engagement in unethical or sabotage-related behaviors [8] and harm employees' psychological well-being [9].

Innovative work behavior (IWB) signifies that individuals are not merely concentrated on their designated tasks but are also actively striving to bring about enhancements independently. The concept of IWB surpasses simple creativity; it involves a wider array of dimensions than the notion of proactive behavior [10]. It encompasses four interconnected elements, namely problem identification, idea generation, promotion, and acknowledgment. These attributes are advantageous for securing a competitive advantage via innovation [11]. Employees who experience occupational exclusion forfeit resources adversely affect their need for affiliation and belonging [10]. Prior investigations have emphasized a significant decline in employees' psychological and emotional well-being when subjected to exclusion, which impedes their capacity for creative action [12–14].

Workplace incivility and ostracism significantly impair IWB and organizational performance [15, 16]. Researchers have sought to understand the underlying causes and effects on organizations and stakeholders [17, 18]. A crucial aspect of healthcare systems is nursing care quality, which reflects the ability to continue providing patients with consistent, high-quality care over time despite organizational and workforce obstacles [19]. To achieve quality of care, workplace factors such as professional autonomy, staffing adequacy, and fair recognition must be addressed [20]. Of particular importance is the prevention of workplace ostracism, which weakens team cohesion and care consistency [21].

For nurses, ostracism creates emotional fatigue and work-related stress, which disrupts professional responsibilities. El-Gazar et al. (2024) [22] found that nurses feeling alienated from colleagues deliver inferior patient care and show decreased job performance, commitment, and engagement. Similar to the social pain of racism, workplace ostracism negatively impacts both employees and management, reducing job satisfaction and increasing turnover intention [23, 24].

Spiri et al. (2016) [25] documented that 155 nurses experienced performance decline in uncivil work environments. Effective nursing requires not only professional knowledge and skills but also key attributes, such as compassion and empathy. A supportive work environment and interdisciplinary collaboration are crucial for delivering high-quality, patient-centered care [26].

Theoretical framework

This study is based on Adams' (1965) [27] Equity Theory, which offers a strong framework for analyzing how nurses' innovative work practices and the ability to deliver sustainable care are harmed by work exclusion. Workers evaluate fairness by contrasting their inputs (skills, effort) with outcomes (inclusion, recognition) according to the idea, and psychological pain and withdrawal behaviors are triggered by perceived unfairness [27]. According to this theory, ostracized nurses in

healthcare settings decrease discretionary efforts, such as disengaging from quality improvement activities [28] because they feel that social interaction is unbalanced.

To examine standards for reciprocity in nurse-manager relationships, where unsuccessful exchanges prolong cycles of ostracism, this study expands on this model by incorporating the Social Exchange Theory [29]. When combined, these theories provide healthcare administrators with a prediction model to avoid staff attrition and innovation stagnation by clarifying the psychological mechanisms that connect exclusion with worsened service quality.

Knowing how workplace issues such as ostracism impact nurses' innovation ability becomes essential for policy development, as Saudi Arabia strives to embrace the quality of nursing care [30]. The correlation between quality of nursing care, workplace ostracism, and IWB is a relatively new area of research, specifically in Saudi Arabia. Organizations can ensure high-quality nursing care by addressing the root causes of workplace ostracism. The findings of this study can inform the development of evidence-based interventions to improve workplace climate, reduce ostracism, and enhance the overall quality of healthcare. Thus, this study aimed to determine the level and predictors of QNC and evaluate its correlation with workplace ostracism and IWB.

Methods

Design

This study used a cross-sectional, correlational design.

Setting

The study was conducted in three major public hospitals in Hail, Saudi Arabia: King Khaled Hospital (285 beds), King Salman Hospital (500 beds), and Hail General Hospital (136 beds). The study focused on several units: the dialysis unit, 45 nurses, intensive care units, 55 nurses, general medical units, 88 nurses, and the general surgical units, 78 nurses.

Sample

Convenience sampling was performed. Of the total 860 nurses in the three hospitals, a minimum sample size of 266 was calculated using the Raosoft® sample size calculator (https://www.raosoft.com/samplesize.html) [31], assuming a 50% response rate, 95% confidence level, and 5% margin of error.

Inclusion and exclusion criteria

Nurses were included if they had at least one year of experience, were available during the research period, and agreed to participate.

Study instruments

Data were collected using three validated instruments: the Workplace Ostracism Scale (WOS), the Innovative Work Behavior (IWB) Scale, and the Quality of Nursing Care (QNC) Scale. The questionnaire also captured demographic information including age, sex, department, years of experience, and educational background.

Workplace ostracism was evaluated using the ten-item WOS developed by Ferris et al. (2008) [32], a widely accepted instrument for quantifying this phenomenon. This scale has been extensively employed in numerous studies, including those by Wu et al. (2019) [13] and Yang et al. (2023) [33], to investigate the ramifications of ostracism on professional and career trajectories. Illustrative items include "Others ignore you at work" and "Your greetings have gone unanswered at work." Nurses' responses were captured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Aggregate scores ranging from 10 to 50 were normalized to percentages. Workplace ostracism levels were categorized as low (< 60%), moderate (60–75%), or high (> 75%) [34].

IWB was measured using Ayoub et al., (2023) 27-item self-report questionnaire developed by Ayoub et al. [35]. This instrument assesses five IWB dimensions: Opportunity Exploration (4 items, e.g., "I develop ideas and solutions for creative opportunities"), Idea Generation (5 items, e.g., "I propose new development ideas"), Idea Promotion (6 items, e.g., "I promote supervisors' new ideas"), Idea Realization (7 items, e.g., "I test solutions for unexpected problems arising from idea implementation"), and Idea Sustainability (5 items, e.g., "I compare results to original goals"). Staff nurses rated the items on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Total scores (27–135) were converted to percentages and categorized as negative (< 60%), Neutral (60–75%), or positive (> 75%) [35].

The 25-item QNC scale developed by Martins et al. (2016) [36] was used to assess nursing care quality across seven dimensions: Patient Satisfaction (3items), Health Promotion (3items), Complication Prevention (3items), Well-being and Self-care (4items), functional Readaptation (4items), Nursing Care Organization (2items), and responsibility and Rigor (6items). The nurses 'responses were rated on a 4-point Likert scale (1 = never, 4 = always). Total scores (25–100) were converted to percentages and categorized as mild (< 60%), Moderate (60–75%), or high (> 75%) [36].

Instrument validity and reliability

Five Hail University College of Nursing faculty members, academic nurses specializing in administration and medical-surgical nursing, evaluated the study instruments' face and content validity, assessing item conciseness,

accuracy, completeness, and relevance. A pilot test with 27 nurses confirmed its feasibility, applicability, and clarity, with completion times ranging from 15 to 20 min. Internal consistency reliability, measured using Cronbach's alpha, was excellent: 0.86 for the WOS, 0.93 for the IWB scale, and 0.83 for the QNC scale.

Fieldwork

Data were collected from mid-June to mid-August 2024. The researchers explained the study and questionnaire process to the enrolled nurses, with questionnaires and consent forms distributed at scheduled times, coordinated by unit head nurses. Completed questionnaires were collected daily during both shifts.

Ethical considerations

This study was approved by the Hail Research Ethics Committee (REC No. H-2024-380). All eligible nurses signed an informed consent form and were provided with a clear explanation of the study purpose. This study involved minimal risk to participants, as it did not include any physical or psychological interventions. Nurses were informed of their right to withdraw from the study at any time without any consequences. Additionally, they were assured that their data would be used solely for research and analysis purposes, with strict guarantees of privacy and confidentiality. To safeguard participant identification, all responses were gathered anonymously, and participation was entirely voluntary. There was no personally identifiable information collected. Data were safely kept in encrypted files that the research team alone could access. To guarantee the privacy and security of all information gathered, suitable data protection and confidentiality procedures were put in place during the study.

Table 1 Demographic and professional characteristics of the studied nurses ($N = 266$)

Parameters		Frequency (*n*)	Percentage (%)	Mean	SD
Age /years	20–29	72	27.1	34.3	5.8
	30–39	140	52.6		
	≥ 40	54	20.3		
Gender	Male	73	27.4		
	Female	193	72.6		
Qualification	Diploma	59	22.2		
	Bachelor	195	73.3		
	Master	12	4.5		
Marital Status	Single	23	8.6		
	Married	243	91.4		
Work Experience/years	≤ 7	103	38.7	9.7	5.2
	8–13	90	33.8		
	≥ 14	73	27.4		
Hospital Units	General Medical	88	33.1		
	General Surgical	78	29.3		
	ICUs	55	20.7		
	Dialysis	45	16.9		

Note. SD = Standard Deviation

Data analysis

Data were coded and entered into Microsoft Excel for verification and then exported to IBM SPSS Statistics for Windows, version 25 (IBM Corp., Armonk, NY, USA) and JASP version 0.19.1 for analysis and graphing. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to describe the research variables and demographic characteristics. Kolmogorov–Smirnov and Shapiro-Wilk tests were used to test normality. The results indicated that the data were abnormally distributed ($P < 0.5$). Consequently, the Mann-Whitney and Kruskal-Wallis tests were used to examine the differences between the main study variables (Workplace Ostracism, IWB, and QNC) and the demographic factors of the nurses. Spearman's correlation coefficient was used to determine the relationships between the study variables. Likewise, to identify predictors of nursing care quality, multiple linear regression analysis was conducted using innovative work behavior and gender as independent variables. The variance inflation factor (VIF) was used to test for multicollinearity; each independent variable had a VIF of less than five, with a mean VIF of 1.01, suggesting that there was no substantial multicollinearity between the independent variables [37]. Statistical significance was set at a p-value of < 0.05.

Results

Table 1 presents the demographic and professional characteristics of the nurses. A total of 266 nurses (72.6%) were female, with ages ranging from 30 to < 40 years (52.6%), with a mean of 34.3 ± 5.8 years. Furthermore, 73.3% had a bachelor's degree at their highest educational level and 33.1% were working in general medical units. Most of the nurses (91.4%) were married, and 38.7% had less than or equal to seven years of experience with a mean of 9.7 ± 5.2 years,

The mean scores for ostracism, Innovative Work Behavior (IWB), and Quality of Nursing Care (QNC) among the nurses are displayed in Table 2. The mean score of ostracism level was 31.1 ± 4.2. Furthermore, the mean score of the IWB was 59.8 ± 16.7; the dimension of "Idea realization" was the highest mean score (15.4 ± 4.9) whereas the lowest mean score was for the dimension of "Opportunity Exploration" (8.8 ± 3.1). The mean score of the total quality of nursing care was (62.8 ± 7.2), and the "Responsibility and Rigor dimensions received the

Table 2 Distribution of the mean scores of ostracism, IWB, and QNC among the nurses (*N* = 266)

	Mean	SD
Ostracism	31.1	4.2
Total IWB	59.8	16.7
IWB D1: Opportunity Exploration	8.8	3.1
IWB D2: Idea generation	10.9	3.7
IWB D3: Idea promotion	12.9	4.4
IWB D4: Idea realization	15.4	4.9
IWB D5: Idea sustainability	11.8	2.7
Total QNC	62.8	7.2
Patient Satisfaction	5.1	0.9
Health Promotion	7.6	1.3
Prevention of complications	7.7	1.2
Well-being and self-care	10.1	1.6
Functional readaptation	10.0	1.6
Nursing care organization	5.1	1.0
Responsibility and rigor	14.7	2.4

Note. IWB = innovative work behavior; SD = standard deviation

highest mean scores (14.7 ± 2.4). The lowest mean score was for the dimension of Patient Satisfaction (5.1 ± 0.9).

Table 3 Correlations between mean ostracism, IWB, and QNC (*N* = 266)

		Ostracism	IWB	QNC
Ostracism	rs	1	-0.146*	-0.159**
	P		0.017	0.009
IWB	rs	-	1	0.376**
	P	-		< 0.001

rs: Spearman correlation. *Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at $p \leq 0.01$ level (2-tailed)

As shown in Fig. 1, the ostracism level was high among the studied nurses (50.38%), half of them had a negative IWB (51.10%), and (41.40%) had a mild level of quality of care.

Table 3 shows the relationship between mean ostracism, IWB, and QNC. Ostracism was negatively and significantly correlated with the quality of care (rs=-0.159, $p = 0.009$) and IWB (rs=-0.146, $p = 0.017$). Furthermore, IWB among nurses was positively correlated with the quality of care (rs = 0.376, $p < 0.001$).

To differentiate between nurses' demographic characteristics, ostracism, IWB, and Quality of care,

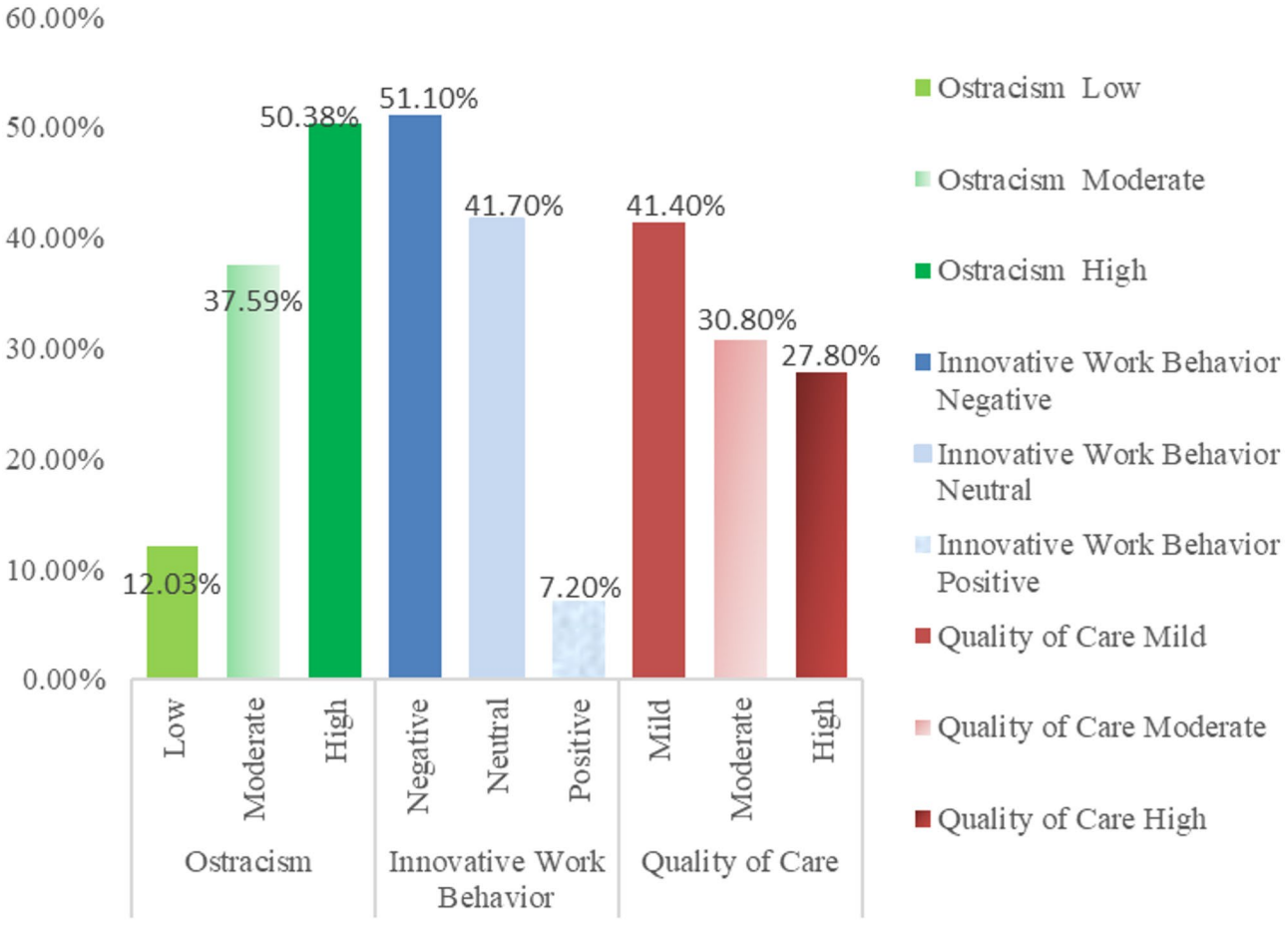

Fig. 1 Levels of Ostracism, Innovative Work Behavior, and Quality of Care among the studied nurses (*n* = 266)

Table 4 Differences between nurses' demographic characteristics and quality of care ($N = 266$)

Parameters categories		Frequency (*n*)	Median	IQR	Test	*P* value
Age /years[a]	20–29	72	2.52	0.16	0.71	0.70
	30–39	140	2.50	0.21		
	≥ 40	54	2052	0.17		
Gender[b]	Male	73	2.48	0.16	58	0.03*
	Female	193	2.52	2.51		
Qualification	Diploma	59	2.52	0.20	0.36	0.84
	Bachelor	195	2.52	0.20		
	Master	12	2.50	0.31		
Marital Status[b]	Single	23	2.48	0.24	37	0.86
	Married	243	2.51	2.52		
Experience/years[a]	≤ 7	103	2.52	0.16	2.05	0.36
	8–13	90	2.48	0.16		
	≥ 14	73	2.48	0.20		
Hospital Units[a]	General Medical	88	2.52	0.20	2.45	0.49
	General Surgical	78	2.48	0.20		
	ICUs	55	2.52	0.16		
	Dialysis	45	2.52	0.16		
Ostracism[a]	Low	0.273	2.48	0.15	1.38	0.50
	Moderate	0.212	2.52	0.20		
	High	0.233	2.52	0.20		
IWB[a]	Negative	136	2.52	0.16	1.89	0.39
	Neutral	111	2.48	0.16		
	positive	19	3.28	1.96		

[a]: Kruskal-Wallis H test, b; Mann-Whitney U test. P value significant at < 0.05

Table 5 Multiple regression analysis for variables contributing to quality of nursing care among nurses ($n = 266$)

Variables	B	S. E	β	t	*p*-value	95% CI for B	
						Lower bound	Upper bound
Male							
Female	0.621	0.915	0.039	0.679	0.498	-1.180	2.421
Ostracism	−0.174	0.093	−0.107	-1.864	0.063	−0.357	0.010
IWB	0.187	0.031	0.350	6.056	< 0.001	0.126	0.248

Note. Dependent Variable: Quality of care = Quality of Care; $R^2 = 0.147$; Adjusted $R^2 = 0.138$; $P < 0.001$; S. E = Std. Error. Bold values indicate statistical significance, CI; Confidence Interval

Mann-Whitney U and Kruskal tests were conducted (Table 4). There was a significant difference between males and females regarding ostracism ($p = 0.03$), with females having a slightly higher median score (2.52) than males (2.48).

The multiple regression analysis, indicating the contributive variables of the quality of nursing care is illustrated in Table 5. In this model, quality of care was considered the dependent variable, while ostracism, IWB, and gender were considered independent variables. The coefficient of determination, R^2 of the regression model indicates that 13.8% of the total QoC score can be explained by the input variables in this model. Among the independent variables in the model using the ENTER method, IWB was considered a significant factor in the quality of care (B = 0.187 at p-value < 0.001, 95%CI = 0.126–0.248).

Discussion

This study aimed to examine the relationship between workplace ostracism, innovative work behavior, and the sustainability of nursing care quality. This study revealed significant negative relationships between workplace ostracism and innovative work behavior (IWB) and a significant positive relationship between IWB and quality of care, suggesting that high perceived ostracism negatively impacts nurses' well-being and performance. This aligns with existing research documenting the detrimental effects of ostracism on employee well-being and workplace outcomes. As Yang and Tan (2023) [33] demonstrated, ostracism among nursing staff is correlated with increased burnout and stress due to feelings of exclusion. Given this strong correlation, further assessment and intervention are required. Healthcare organizations can mitigate workplace ostracism through proactive

change-management strategies, including education, mentorship, open communication, employee appreciation, and improved leadership.

Such an interpretation requires an additional understanding of cultural variances in the perception of the scale's items. For example, the "opportunity exploration" construct may have different meanings in different cultures. In strict organizational cultures, nurses may feel emotionally that this goes above their role or challenging power relations, which may result in lower scores. Similarly, the "risk-taking" related to innovations is also contextual. There is also a possible higher perception of risk in Saudi Arabia around the offering of new ideas, particularly when there is a challenge to authority or a change to established ways of doing things.

Nurses demonstrated moderate innovative work behavior, scoring high on idea realization but low on opportunity exploration. Although they possess worthwhile ideas, they often lack practicality. This aligns with Zhou and Zhang (2022) [38], who find that ethical leadership fosters innovation by encouraging collaboration and idea sharing. The low "opportunity exploration" scores suggest that nurses feel limited in pursuing new opportunities, possibly because of workplace ostracism. Research indicates that ostracism negatively impacts employees' willingness to explore new options and adopt innovative approaches [39]. Furthermore, Workplace ostracism correlates with reduced proactive job behaviors, including job search and advancement [39, 40]. Therefore, to improve nursing innovation, organizations should foster creativity, risk taking, and collaboration. Additionally, the scales employed to evaluate ostracism and innovative work behavior may not fully accommodate the nuances related to these concepts in Saudi Arabia. For instance, ostracism could be more subtle, such as social avoidance or exclusion, than active aggression. These forms of hostility might be more difficult to detect or too readily reported on standard scales, which are less likely to be used, thus leading to fewer reports. In addition, cultural values regarding communication and assertiveness may affect nurses' willingness to report innovative ideas or experiences of ostracism. At the same time, Saudi Arabian society is collectivist, which has implications for nurses' experiences and their reporting of these experiences in their workplace. For instance, nurses may not want to report the occurrence of ostracism out of concern about social cohesion or interpersonal relationship damage. In this case, this led to a reduced report that may not be healthy for the findings. On the other hand, cultural modesty and humility may also affect how these nurses evaluate themselves through innovative work behaviors, thus leading to these estimates being too low.

The study results showed that quality-of-care scores were moderate overall, with "Responsibility and Rigor" scoring significantly higher than "Patient Satisfaction," suggesting a potential gap between nurses' perceived competence and patient-centered care delivery. This disparity, where strong performance does not translate to high patient satisfaction, mirrors findings linking incivility and burnout that diminish patient safety and care quality [26]. Conversely, organizational support can mitigate the negative effects of workplace ostracism on performance, foster a sense of belonging, and enhance both innovative work behavior and quality of care [7]. The observed relationship between ostracism, innovative work behavior, and quality of care underscores the importance of addressing workplace ostracism to improve both nurses' and patients' wellbeing. Interventions should focus on strengthening interpersonal relationships to reduce the impact of ostracism and foster a more innovative and patient-centered care environment. Understanding such a gap between "Responsibility and Rigor" and "Patient Satisfaction" in the Saudi Arabian context requires analyzing how cultural differences may affect the interpretation of the scales. For example, "Responsibility and Rigor may be closely linked to compliance with protocols and procedures that correspond to the cultural value of duty and compliance with guidelines. Nurses may score high in this domain because of their commitment to carrying out their professional duties. Conversely, "Patient Satisfaction" may be based on other cultural norms as far as how communication, social interaction, and caring are concerned. In Saudi Arabia, the level of satisfaction of patients can highly depend on respect, empathy, and personal relationships that nurses seem to show. For instance, the way in which a nurse speaks to a patient, involves family members in care, or even shows sensitivity to religious and cultural issues, has a great bearing on patient satisfaction. These scales probably do not account for culturally sensitive dimensions of patient-centered care.

The results of the study outline an association between workplace ostracism and low innovative work behavior (IWB) and moderate quality of care. As such, this is a cause of concern for nurses' welfare and patient care. As such, this is a cause of concern for nurses' welfare and patient care. Workplace ostracism, through exclusion and isolation, directly affects mental health and psychotherapy productivity, leading to anxiety and depression [21]. These adverse conditions, as shown by the high rates of perceived ostracism, seem to greatly improve nurses' ability to carry out innovative practices and patient-centered care. More specifically, low IWB, along with low patient satisfaction, indicates that nurses are reluctant to innovate for the better in a highly demanding healthcare environment. This reluctance stems from the impact of ostracism, which undermined employee initiative and creativity, both of which are essential for effective nursing

care. Moreover, the accompanying strong relationship between perceived social support and mental health well-being confirms the need to fill the gaps in proposed solutions regarding ostracism [41, 42]; there is a need for greater emphasis on team dynamics, as well as the provision of communication and mental health support, if the organization wishes to motivate IWB and improve quality of care. Building inclusive environments in the workplace results in less ostracism, resulting in higher employee satisfaction and better healthcare services. From these results, an unfavorable work situation dominated by ostracism is highly likely to impede patient-centered care among nurses. This finding supports earlier findings pertaining to the impact of healthcare providers' well-being on the patient care they provide (Amr et al. (2011) [43].

This study demonstrated a significant association between workplace ostracism, IWB, and quality of care (QoC) among nurses, highlighting the crucial role of work environment in shaping health outcomes. These findings suggest that perceived ostracism may paradoxically spur nurses to engage in IWB, ultimately improving quality of care. However, existing research has overwhelmingly demonstrated detrimental effects of workplace ostracism on morale and performance. Additionally, nurses in challenging environments, such as those involving rotating shifts, often experience increased stress, self-doubt, and feelings of isolation and ostracism [44]. This aligns with the notion that negative work contexts can motivate innovation as employees seek to improve their circumstances. Furthermore, research indicates that organizational justice and work engagement are crucial for enhancing the quality of care [45], suggesting that positive work climates can mitigate the negative consequences of ostracism and promote IWB. The link between IWB and quality of care is further strengthened by evidence that healthcare providers' innovative practices significantly improve patients' experiences. For example, Iula et al. (2020) [46] emphasized the importance of innovative nursing processes, such as thorough documentation and assessment, in achieving high-quality care. Similarly, Aiken et al. (2021) [47] demonstrated a positive correlation between nurses' engagement, satisfaction, improved patient satisfaction, and perceived QoC. Therefore, strategies aimed at mitigating the negative effects of ostracism and fostering a supportive work environment could indirectly improve the quality of care by enhancing IWB and nurses' well-being.

A statistically significant disparity existed between male and female nursing professionals, with female nurses exhibiting a marginally elevated mean score compared to their male counterparts. Gendered perspectives regarding caregiving and the broader work environment are also manifested in numerous studies that investigate the diverse gendered dimensions of nursing and patient care. Similarly, the research conducted by Tong et al. (2023) [48] indicated that gender influences perceptions of caregiving, even when controlling for other variables. It has been posited that discrepancies in caregiving behaviors and/or attitudes between female and male nurses may elucidate their respective experiences of workplace ostracism and innovative work behaviors (IWB). Furthermore, an investigation by Prosen (2022) [49] underscored the imperative for strategies aimed at promoting gender diversity within nursing teams, contending that male nurses frequently encounter disadvantages concerning the perception of care quality. Concurrently, Atallah et al. (2013) [50] found that while the demographic characteristics of patients significantly influence nursing care satisfaction, other elements involving gender dynamics in nursing may be pivotal for enhancing patient experiences. This concept is further substantiated by the research of Nantsupawat et al. (2011) [51], which contends that optimal patient care can be contingent upon the establishment of favorable working conditions that are influenced by the gender of the nursing staff. Across all studies, it was established that the gender gap among nurses not only modified their perceptions of quality but also impacted patient satisfaction and overall working conditions. Incorporating gender analytical perspectives into nursing practices may enhance both the quality of care delivered and the practice environment for nurses, thereby enabling them to provide superior care.

This research demonstrates that multiple factors, particularly the "Idea sustainability" dimension of the IWB scale, significantly influence the quality of care. This aligns with Havaei et al. (2019) [52], who found that integrating innovation into nursing practices improves care outcomes and nursing models. In nursing practice, IWB and QoC are significantly affected by burnout and emotional exhaustion. Burnout negatively impacts nurses' performance and care delivery, emphasizing the need for innovative work environments [9, 53]. A supportive work environment is a key predictor of nurses' professional quality of life, and consequently, their quality of care [54, 55]. Effective communication and collaboration are crucial. High-quality care, especially during hospital-to-home transitions, requires effective communication with patients and families [56]. Furthermore, it reinforces the importance of the nurse-patient relationship and the potential for innovation to enhance it [57]. Therefore, improved nursing care depends on innovative work behaviors, supportive efforts, and communicative work environments.

Workplace ostracism, innovative work behavior, and quality of care are elements that correlate with nursing in Saudi Arabia, because culture influences the workplace. In Saudi culture, the focus on social balance and

collective well-being increases the negative impact of ostracism, especially with the existing power dynamics in most healthcare institutions. The low "opportunity exploration" scope among the nurses can also be attributed to the norms of respect towards authority and fear of taking risks, regardless of the useful suggestions they are willing to offer. A more proactive patient care model that meets patients' cultural and religious needs is needed to enhance the quality of care and patient satisfaction. Moreover, the gender gaps identified in the research findings are very relevant within a gendered society, which requires an understanding of how such sociocultural factors affect the experiences of male and female nurses. Initiatives providing organizational support aimed at reducing workplace ostracism and promoting creativity will only be effective if they consider the local culture and customs of Saudi Arabia and the values of the Saudi Arabian people. In essence, this study highlights that solving workplace problems and improving patient care in Saudi Arabia requires a comprehensive grasp of the far-reaching effects of culture on every facet of nursing.

Limitations

However, the results of this research are subject to a number of shortcomings that greatly affect the interpretation and generalization of the study's results. First, we only have a cross-sectional correlational design that does not allow us to draw causal relations. Thus, we can only observe the correlations. We can only observe whether ostracism is a direct cause of low innovative work behavior (IWB) or whether IWB is a consequence of improved care quality. This is a setback for designing intervention programs based on clear causative phenomena. Second, external validity is affected by a convenience sample derived from three public hospitals in Ha' il, which may bias the results due to selection bias and restrict generalizability to other regions, private hospitals, or heterogeneous nursing populations. Third, using self-report measures introduces social desirability bias and common method variance, which are likely to affect the relationships that are observed. Therefore, the validity of the data, particularly in light of possible cultural differences in the interpretation of the scales. Fourth, the regression analysis included only age from the demographic variables, as it was the only factor found to be significant in the preliminary Mann-Whitney and ANOVA tests. While this approach was data-driven, future studies should consider exploring a broader range of demographic variables and work-related factors that may enhance the robustness of the analysis. Finally, narrowing our scope to middle management nurses may provide certain insights into other levels of nursing, but may not capture the experience of frontline nurses and administrators who may face different dynamics. These limitations–correlational design, convenience sampling, self-report measures, and focus on middle management–weaken the research thrust and therefore caution to draw any interpretations from the results is suggested, reinforcing the need to augment the investigation with further methodologies that are more powerful than the ones applied.

Implications for nursing

Healthcare managers in Saudi Arabia should design comprehensive mitigation strategies for workplace ostracism that aim to promote healthy and positive work environments. Interdisciplinary team-building workshops and mentorship sessions should be organized regularly to encourage collaboration, communication, and support. To counteract ostracism, proactive measures should include respected anti-bullying/harassment policies that are culturally sensitive, accompanied by working reporting and investigative procedures. Strategies should be developed to frame the itability of change in best practices and cultural differences.

Changes in the status quo to aid nurse support in organizations should be made by providing more direct and anonymous feedback channels through peer groups and suggestion boxes. These policies expect supervisor training programs to prepare managers to understand and react to signs of ostracism, promote constructive conflict resolution, and create an environment in which conflicts are handled respectfully. These other advanced proposals should be taken by educational authorities in Saudi Arabia to incorporate courses on workplace ostracism, its effects, and management, as well as the role of professional behavior and emotional intelligence integrated into the appropriate pedagogy.

To foster innovative work behavior, it is recommended that formal acknowledgment and reward systems for nurses' input be incorporated into everyone is place of work. This can take the form of innovation grants, time assigned for development and research projects, and participation in internal or external conferences for the presentation of innovative ideas. In addition, an organization needs to provide professional advancement opportunities that allow nurses to proffer novel ideas and hone managerial competencies. It is also very important to create a culture in which psychological safety is provided, which allows nurses to freely put forward ideas without the risk of being punished or ridiculed. Most importantly, periodic surveys should be conducted to evaluate the workplace environment and climate for intervention effectiveness as it relates to staff nursing needs.

Conclusion

This study found a weak negative correlation between workplace ostracism and innovative work behavior, suggesting that nurses may use innovation as a coping

mechanism for stressful situations. A positive correlation was observed between innovative work behavior and quality of nursing care, indicating that innovative nurses tend to provide better patient outcomes. The study also revealed that female nurses reported higher levels of ostracism than did male nurses. The "Idea sustainability" dimension of innovative work behavior was the strongest predictor of quality nursing care, highlighting the importance of fostering and developing innovative ideas to improve care. To enhance nurses' well-being and patient outcomes, healthcare organizations should implement strategies to reduce workplace ostracism and promote innovative work behaviors.

Although innovation may act as a coping strategy and produce favorable patient outcomes, workplace ostracism, especially among female nurses, continues to be a significant challenge. This finding is important because addressing workplace social exclusion is much more important than improving nurses' health and well-being; it is one of the most important factors affecting the quality of nursing care. Therefore, Saudi Arabian healthcare institutions should focus on eliminating forms of social exclusion and promoting innovation, which will improve patient care and the entire healthcare system.

Abbreviations

WOS	Workplace Ostracism Scale
IWB	Innovative Work Behavior
QNC	Quality of Nursing Care
SPSS	Statistical Package for Social Sciences
SD	Standard Deviation

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Author contributions
All researchers were involved in designing the study, conducting the survey and data collection, analyzing the data, and interpreting the results. Aziza Z. Ali, Laila A. Hamed and Sameer A. Alkubati drafted and revised the manuscript. All authors have read, revised, and accepted the final version of the manuscript for publication.

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Data availability
The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate
Ethical guidelines, including the Helsinki Declaration, were strictly followed and ethical approval was obtained from the Research Ethics Committee of Hail University (REC no. H-2024-380). Ethical considerations were prioritized throughout the study. All eligible nurses signed an informed consent form before participating and received a detailed explanation of the study objectives. They were explicitly informed of their right to decline participation or withdraw at any point, without providing a rationale. The researchers guaranteed confidentiality and anonymity of all collected data, ensuring that they would be used solely for scientific research purposes.

Consent for publication
No applicable.

Competing interests
The authors declare no competing interests.

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