



Career Plateau and Innovative work behaviour Among nurses at Zagazig University Hospitals

Rania Elsayed Abd Elsalam ⁽¹⁾, Magda Atiya Gaber ⁽²⁾, Wafaa Mostafa Mohamed ⁽³⁾

(1) B.S.C. Nursing . Zagazig University

(2) Professor of Nursing Administration, Faculty of Nursing, Zagazig University

(3) Professor of Nursing Administration, Faculty of Nursing, Zagazig University

Corresponding Author: Rania Elsayed Abd Elsalam

Received: 28 October 2024, **Accepted:** 17 November 2024, **Published:** 20 November 2024

Abstract

Background: Career plateau among nurses refers to a sense of stalled career growth that may reduce motivation and engagement. This can limit innovative work behaviour.

The aim of study was to assess nursing staff perception regarding career plateau and innovative work behavior among nurses at Zagazig University Hospitals. **Research design:** This study was conducted using a descriptive research design. **Setting:** This study was conducted at Zagazig University Hospitals. **Sample:** A proportionate stratified random sample of 375 nurses and 100 head nurses were selected from Zagazig University Hospitals (academic hospitals), Al Sharqia, Egypt. **Tool:** Two tools were used in the study: Tool I – Career plateau Questionnaire, Tool II – Innovative work behavior knowledge Test Questionnaire. **Results:** showed that more than half of the nurses had low level of career plateau. (54.4%), while (21.3%) of them had high level of career plateau. For head nurses, the highest percentage (57.0%) falls into the "Low" knowledge category. For nurses, a similar trend is observed. The majority of nurses also have a "Low" level of knowledge (55.2%). **Conclusion:** Statistical analysis showed no significant relationship between career plateau and innovative work behavior and between innovative work behavior. This mean that a nurse's innovative work behavior is largely independent of their career plateau. **Recommendations:** Healthcare organizations should implement career development and job enrichment programs to reduce career plateau among nurses

Keywords: Career Plateau, Innovative work behaviour , Among nurses.



Introduction

Nursing staff constitute the backbone of healthcare organizations and represent the largest professional group within hospital systems. Their continuous presence at the patient's bedside places them at the center of healthcare delivery, directly influencing the quality, safety and effectiveness of care provided. Nurses' performance, motivation and professional engagement are critical determinants of organizational success and patient outcomes. Consequently, any factors that affect nurses' career development, job satisfaction, or professional growth can have far-reaching implications for healthcare institutions. In rapidly changing healthcare environments, understanding nurses' perceptions of their career experiences has become an essential area of organizational and managerial concern (Evans, 2022; Yu et al., 2024).

Healthcare organizations have recently experienced increasing challenges, including workforce shortages, organizational restructuring, financial constraints, and limited opportunities for career advancement. These challenges often result in nurses remaining in the same positions for prolonged periods with limited prospects for promotion or professional development. Such circumstances increase the likelihood of experiencing career plateau, which has become an important issue affecting nurses' motivation, engagement, and organizational commitment (Liu et al., 2025; Zhang et al., 2024).

Career plateau in nursing refers to a psychological and professional state in which nurses perceive a stagnation in their career progression, whether temporary or permanent. This perception may arise when opportunities for vertical promotion or horizontal job enrichment become limited or unavailable. Nurses experiencing career plateau often report feelings of frustration, boredom, reduced ambition and emotional exhaustion. These feelings can impair nurses' professional engagement and willingness to exert extra effort in their roles. Over time, career plateau may contribute to decreased job satisfaction and diminished organizational loyalty (Elsayed et al., 2023; Polat et al., 2025).

Career plateau is generally classified into two major forms: hierarchical plateau and job content plateau. Hierarchical plateau occurs when nurses perceive limited opportunities for promotion because of

organizational hierarchies, restricted managerial positions, or limited career pathways. In contrast, job content plateau develops when nursing responsibilities become repetitive, routine, and insufficiently challenging, limiting opportunities for acquiring new knowledge and competencies. Both forms may coexist and collectively contribute to unfavorable psychological and behavioral outcomes among nursing staff (Abdelallem & El-Sayed, 2022; Gab-Alla et al., 2024).

Several factors contribute to the development of career plateau among nurses. Individual factors such as age, length of service, educational level, ambition and professional competencies play a significant role in shaping nurses' career perceptions. Family-related factors, including work-family balance, family responsibilities and social support, may further influence career expectations and satisfaction. Organizational factors, such as limited career pathways, inadequate professional development programs, lack of recognition and rigid administrative policies, are also critical contributors. The interaction of these factors makes career plateau a complex and multifaceted phenomenon within nursing practice (Polat et al., 2025; Liu et al., 2025).

The consequences of career plateau extend beyond individual dissatisfaction and may significantly affect organizational functioning. Nurses experiencing career plateau may exhibit decreased motivation, reduced work engagement and emotional withdrawal from their roles. Such outcomes can negatively impact teamwork, communication and overall care quality. Moreover, career plateau has been associated with increased stress, burnout and intention to leave the profession. Addressing career plateau is therefore not only a matter of individual well-being but also a strategic organizational priority (Zhanget al., 2024; Polat et al., 2025).

In high-pressure healthcare environments, nurses are frequently confronted with unpredictable workloads, emergency situations and complex patient needs. These conditions require nurses to think creatively, adapt rapidly and implement innovative solutions in their daily practice. Innovative work behaviour has thus emerged as a critical competency for nursing staff. It enables nurses to generate new ideas, improve care



processes and enhance service quality. However, the presence of career plateau may undermine nurses' willingness and ability to engage in innovative work behavior (**Akkoç et al., 2022; Wang et al., 2024**).

Innovative work behavior refers to intentional employee actions aimed at generating, promoting and implementing novel ideas, methods, or practices within the workplace. In nursing, innovative work behavior contributes to the development of new care approaches, improved patient safety practices and enhanced organizational effectiveness. This behaviour typically unfolds through stages including idea generation, idea promotion and idea implementation. Nurses who actively engage in innovative work behaviour play a vital role in sustaining healthcare organizations' adaptability and competitiveness (**Hassan et al., 2024**).

Innovative work behavior among nurses is influenced by both personal and environmental factors. Personal factors include creativity, self-efficacy, professional values and intrinsic motivation. Environmental factors encompass leadership support, organizational culture, availability of resources and opportunities for professional development. When nurses perceive limited career growth or experience career plateau, their motivation to engage in innovative behaviors may decline. Thus, career plateau may serve as a barrier to fostering innovation within nursing practice (**Ge et al., 2025**).

Significance of the Study

The significance of this study lies in its contribution to understanding how nursing staff perceive career plateau and how this perception relates to innovative work behavior. Identifying these relationships provides valuable insights for nursing administrators and policymakers seeking to improve work environments, enhance professional development opportunities and reduce negative career outcomes. By addressing career plateau, healthcare organizations can foster innovation, strengthen nurses' organizational ties and improve overall care quality (**Fan et al., 2024; Liu et al., 2025**).

Furthermore, this study is significant for teaching hospitals and academic healthcare institutions, as it highlights the importance of creating supportive career systems that promote innovation and

retention among nurses. Examining these concepts within Zagazig University Hospitals offers context-specific evidence that can inform managerial interventions and policy development. Ultimately, understanding nurses' perceptions of career plateau, innovative work behaviour is vital for sustaining a motivated, innovative and committed nursing workforce in an increasingly challenging healthcare environment (**Elsayed et al., 2023; Gab-Alla et al., 2024**).

Aim of The Study

This study aimed to assess nursing staff perception regarding career plateau and innovative work behavior among nurses at Zagazig University Hospitals .

Research question

- What is the perception level of the career plateau among nurses?
- What's the perception level of innovative work among nurses?
- What is the relationship between career plateau, innovation work behavior among nurses?

Materials and methods

Subjects and methods of the present study were discussed by the following four main designs:

- I. Technical Design**
- II. Operational design**
- III. Administrative Design**
- IV. Statistical design**

I- Technical designs

The technical design of this study includes a description of the research design used, the study setting, subject and tool for data collection.

a. Research design:

A descriptive correlational research design is used to achieve the aim of this study.

The purpose of a descriptive correlational design is to describe variables and examine relationships among these variables. Using this design facilitates the identification of many relationships in a situation that has been already occurred or is currently occurring. Researchers make no attempt to control or manipulate the situation. As with descriptive studies variables must be clearly identified and defined conceptually and operationally (**grove, 2018**).



b. Setting:

The study was conducted at Zagazig University Hospitals (academic hospitals), which includes two sectors involving eight teaching hospitals, namely; the emergency sector included five hospitals and El-Salam sectors includes three hospitals. The total bed capacity of the Hospitals is approximately 2043 beds.

A- The emergency sector includes five hospitals namely:

- New-Surgical Hospital (555 beds)
- Internal-Medicine Hospital (277 beds)
- Emergency Hospital (170 beds) included reception / Emergency Department (34 beds)
- The Delivery and Premature Hospital (111 beds)
- Outpatient Hospital (43 beds)

B- El-Salam sector

It includes four Hospitals; three of them provide free treatment, these were:

- Cardiac and Chest Hospital (260 beds)
- The Pediatric Hospital (208 beds and 16 incubations)
- El-Sadat Hospital (80 beds). It provides economic treatment

c. Subjects:

A proportionate stratified random sample **Polit et al., (2010)**, where a population divides into strata and then the random Sample is taken from each stratum in proportion to its size. Two types of samples were utilized to collect data for the current study.

• **The first one** was a convenient sample of 100 head nurses working at Zagazig University Hospitals at the time of data collection and agrees to participate in the study.

• **The second one** was taken from nursing staff working at Zagazig University Hospitals according to the following **inclusion criteria**:

- The available three categories of nurses included (bachelor & technical nurses, and diploma).
- Both genders.
- Had at least one year of experience.
- Agree to participate in the study.

Sample size:

The total population size was 2770 nurses, so sample size was calculated by Steven K. Thompson Equation from the next formula (**Thompson, 2012**).

$$n = \frac{N \times P(1-P)}{[N - 1 \times (d^2 \div z^2)] + p(1-p)}$$

Where: n: Sample size, N: Population size, z: Confidence level at 95% (1.96), d: Error proportion (0.05), p: Probability (50%).

The ideal sample size was estimated at a confidence level at 95% (1.96), error proportion (0.05), and the required sample size were 337 nurses. After adjust of a dropout rate of 10 % the sample size required was 375. A total of 375 questionnaire forms were returned, giving a response rate of 100%. So, the definitive sample of the result was 375.

Sample size of nursing staff in each hospital (n=375) was estimated as follows according to the following formula:

$$\frac{\text{Number of nurses in each hospital} \times \text{Required sample size}}{\text{total number of nurses in all hospitals}}$$

d. Tools for data collection:

Three tools will be used for collecting data in this study:

Tool (I): Career plateau Questionnaire:

It will consist of two parts as follows:

- **Part one:** social demographic and work related characteristics of nurses, which include the data about characteristics of the nurses such as age, gender, years of experience, educational qualifications and department type.
- **Part two:** It was developed by (**Elsayed.et al., 2023**) to measure nursing staff perception regarding career plateau. it contains 31 items divided into four dimensions; job content (12 items), hierarchical plateau (8 items) inclusive plateau (6 items), and psychological plateau (5 items).

Scoring system:

Response to the instrument allocated on three - point likert scale as the following (3) for agree, (2) for neutral and (1) for disagree. The total score was reversed for negative items. Reverse items are 2,4,5,6,8,11,12,13,15,16,17,18,21,22,23,24,25,26.

Scores of each dimension summed up and converted into percent scores as following :

- **Low perception level :** <60% of total perception score (31-55).
- **Moderate perception level :** 60-75 of total perception score (56-69).
- **High perception level :** >70% of total perception score (70-93).



Tool (II): Innovative work behavior knowledge Test Questionnaire:

It was guided by Janssen (2000), and developed by the researcher . It was one part as follows: Innovative Work Behavior knowledge Test Questionnaire: It was utilized to assess the nurse managers' knowledge about concept and skills of innovative work behavior .

Scoring system:

Each question was granted one point for the correct answer and zero for incorrect answer .Total scores for all questions were 30 .Total scores were expressed as percentage .

- Low Innovative Work Behavior knowledge: cut point 60% scores of (<60%).
- Moderate Innovative Work Behavior knowledge : score range from 60% to 74.9%.
- High Innovative Work Behavior knowledge: score more than 75%

Operational definition

- For the purpose of this study, Response to self-reported tool (career plateau). It contains .it contains 31 items divided into four dimensions ; job content (12 items) , hierarchical plateau (8 items) inclusive plateau (6 items) ,and psychological plateau (5 items) .
- For the purpose of this study, Response to self-reported tool (innovative work behavior). It was guided by Janssen (2000), and developed by the researcher . It was divided into two parts as follows: A- personal characteristic data. B- Innovative Work Behavior knowledge Test Questionnaire: It was utilized to assess the nurse managers' knowledge about concept and skills of innovative work behavior

II- Operational design

It includes the following phases: the preparatory phase, the implementation phase, pilot study, content validity, reliability test, and ethical consideration.

Preparatory phase:

Preparatory phase implicates reviewing of the literature regarding the study variables (career plateau , Innovative work behavior among nurses) using electronic and printed sources. Then begin to modify the tools of data collection to fit the study purpose.

Validity:

The study tool were translated into Arabic language, and then Face and content validity were established by a panel of five experts, including three assistant and two professors of nursing administration department,

Faculty of Nursing at Zagazig University. Content and face validity sheet involved two parts: the first part included the opinions of the experts for each item that were recorded on a two-point scale: relevant, and not relevant; the second part covered general or overall opinion about the form which express their opinions and comments on the tools for clarity, applicability, comprehensiveness, understanding, any suggestions for any additional or omissions of items and ease for implementation. According to their opinions, all recommended modifications were performed by the researcher.

Reliability:

The results were the stability of the dimensions of the study through the Alpha Cronbach's coefficient, and the results were as in the following table:

Pilot study:

A pilot study was carried out on 10 % of study subject included 38 staff nurses and ten head to test applicability, feasibility, practicability of the tools. In addition, to estimate the time required for filling in the questionnaire sheets. The pilot study was conducted one week before collection of data and staff nurses were selected randomly and they were excluded from the main study sample. And the necessary modifications were done .the purpose of Pilot study was to ensure the clarity and adaptability of tool, and to identify the obstacles and problems that may encountered during data collection. It also helped to estimate the time needed to fill the forms.(20-30 minutes)

Fieldwork:

Data collection It was lasting (3months) from last of April 2025 to last of July 2025 to the end of 2025. The first phase; the researcher met both medical and nursing directors of the hospital to explain the purpose of the study and obtain official permission. The second phase; the questionnaire was distributed to participants and instructed about how to fill out. The participants were asked to fill up the tools during the morning and afternoon shifts .The questionnaire took from 20 to 30 minutes to be filled before distributing the questionnaire the purpose of the study and components of the tool were explained to the participants in the study setting. The researcher was available at the time of collection for any clarification and checked each tool after completed by nursing staff to ensure the completion of all information. The researcher visited the selected setting four days per week and collect data by herself.



Administrative and ethical consideration

First, the study proposal was approved by the research ethical committee in the faculty of nursing at Zagazig University M.D.ZU.NUR/203/14/11/2023.

The researcher met the hospital directors (medical & nursing) to clarify the aim of the study and seek their support and approval. The researcher met the study subjects to explain the purpose of the study and obtain their approval to participate in it.

They are assured about the anonymity and confidentiality of the data collected, and used only for the purpose of scientific research. The subject's right to withdraw from the study at any time was assured.

I. Administrative design:

An official letter obtained from the dean of faculty of nursing at Zagazig University to Chairman of board of directors at Zagazig University Hospitals to request permission and cooperation for conducting this study, then oral official permission from the nursing director of each hospital and from the head nurse of each unit after explaining the nature and the aim of the work.

II. Statistical design:

Data were organized, categorized, tabulated and statistically analyzed by using the Statistical Package for the Social Sciences (SPSS), version 23.0. Data were presented using descriptive statistics in the form of frequency, percentage, mean, and standard deviation: correlation coefficient, and chi-square were also used to examine the relation between study variable. A nova, independent –test were used and A significant level value was considered when $p < 0.05$.

Results:

Table (1) Shows that most of the participants are female of study sample (79.5%), with males constituting 20.5%, The majority of participants are married (81.1%), while 18.9% are single, The highest percentage of participants hold an Institute of Nursing degree (68.8%), followed by a Diploma of Nursing (30.7%). A very small percentage holds a Bachelor of Nursing (0.3%) or "other" qualifications (0.3%). and their age is "from 20 to less than 30" (45.6%), followed by "from 30 to less than 35" (26.4%). According to experience, the largest group having "From 5 years to less than 10 years" of experience (35.7%), followed by "1 to less than 5 years" (24.0%).

Table (2) Shows that head nurses, (100%) of the study sample were females, as well, (63%) of head nurses had aged more than or equal to 40 years old. Moreover, Cuest.fisioter.2024.53(3):8038-8050

most of head nurses (92%) were married, as regard to educational qualification, (80%) of head nurses had Bachelors of nursing, and (63%) of head nurses had experience 15 years or more of experience.

Figure (1) Career plateau levels among nurses (n=375).

This figure show that approximately above half of nurses had low level of career plateau (54.4%), while (21.3%) of them had high level of career plateau

Figure (2) Nurses' knowledge about innovative work behavior (n=375).

This figure show that approximately above half of nurses (53.1%) had low level of Knowledge about innovative work behavior concept (53.1%) while (26.1%) of them had high level of Knowledge about innovative work behavior concept additionally, approximately above half of nurses had low level of Knowledge about innovative work behavior skills (66.4%) while (15.5%) of them had high level of Knowledge about innovative work behavior skills.

Figure (3) Head nurses' knowledge about innovative work behavior (n=100).

This figure show that (67.0%) of head nurses had low level of Knowledge about innovative work behavior concept, while (5.0%) of them had high level of Knowledge about innovative work behavior concept. Additionally, approximately above half of nurses (58.0%) had low level of Knowledge about innovative work behavior skills, while (13.0%) of them had high level of Knowledge about innovative work behavior skills

Figure (4) Total level of knowledge about innovative work behavior among nurses and head nurses

For head nurses, the highest percentage (57.0%) falls into the "Low" knowledge category, followed by "Moderate" (32.0%) and a much smaller percentage (11.0%) for "High" knowledge.

For nurses, a similar trend is observed. The majority of nurses also have a "Low" level of knowledge (55.2%), followed by "Moderate" (27.5%) and "High" (17.3%), the data suggests that there is a significant knowledge gap in innovative work behavior for both head nurses and nurses, with the majority falling into the low knowledge category. It is clear that a larger proportion of nurses perceive themselves as having a high level of knowledge compared to their head nurses.

Table (3) There is no significant relationship between career plateau and job embeddedness

**Table (1)** Frequency distribution of nurses' personal data (n=375)

Personal characteristics	Studied Nurses (n=375)	
	No	%
Age		
• from 20 to less than 30	171	45.6
• from 30 to less than 35	99	26.4
• from 35 to less than 40	47	12.5
• more than or equal to 40	58	15.5
• Mean±SD	1.98 ±1.20	
Gender		
• Male	77	20.5
• Female	298	79.5
Educational qualification		
• Diploma of Nursing	115	30.7
• institute of Nursing	258	68.8
• Bachelor of Nursing	1	0.3
• other	1	0.3
• Mean±SD	1.70±0.48	
Years of Experience		
• 1 to less than 5 years	90	24.0
• From 5 years to less than 10years	134	35.7
• From 10 years to less than 15years	80	21.3
• 15 years or more	71	18.9
• Mean±SD	2.35±1.04	
Marital Status		
• Single	71	18.9
• Married	304	81.1
• Widow	0	0.0
• Mean±SD	1.19±0.39	

Table (2): Personal characteristics of head nurses in the study sample (n=100)

Personal characteristics	Studied Nurses (n=100)	
	No	%
Age		
from 35 to less than 40	37	37.0
more than or equal to 40	63	63.0
Mean±SD	3.63±0.49	
Gender		
Male	0	0.0
Female	100	100.0
Educational qualification		
Bachelor of Nursing	80	80.0
Master of Nursing	6	6.0
Doctorate of Nursing	4	4.0
other	10	10.0
Mean±SD	1.44±0.97	
Years of Experience		
From 10 years to less than 15years	37	37.0
15 years or more	63	63.0
Mean±SD	3.63±0.48	
Marital Status		
Married	92	92.0
Widow	6	6.0
Divorce	2	2.0
Mean±SD	1.18±0.63	

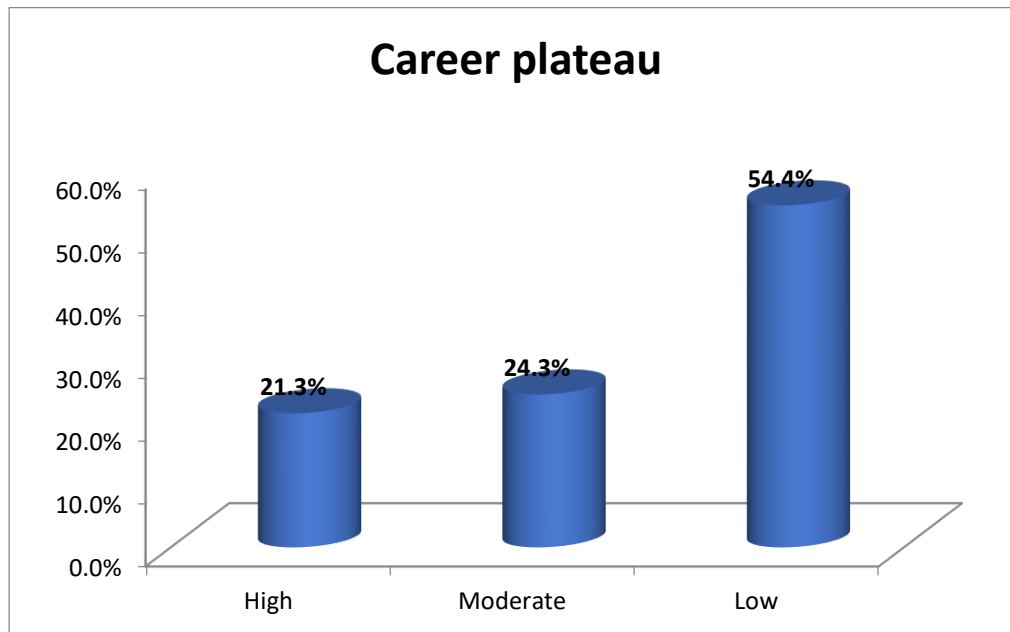


Figure (1) Career plateau levels among nurses (n=375).

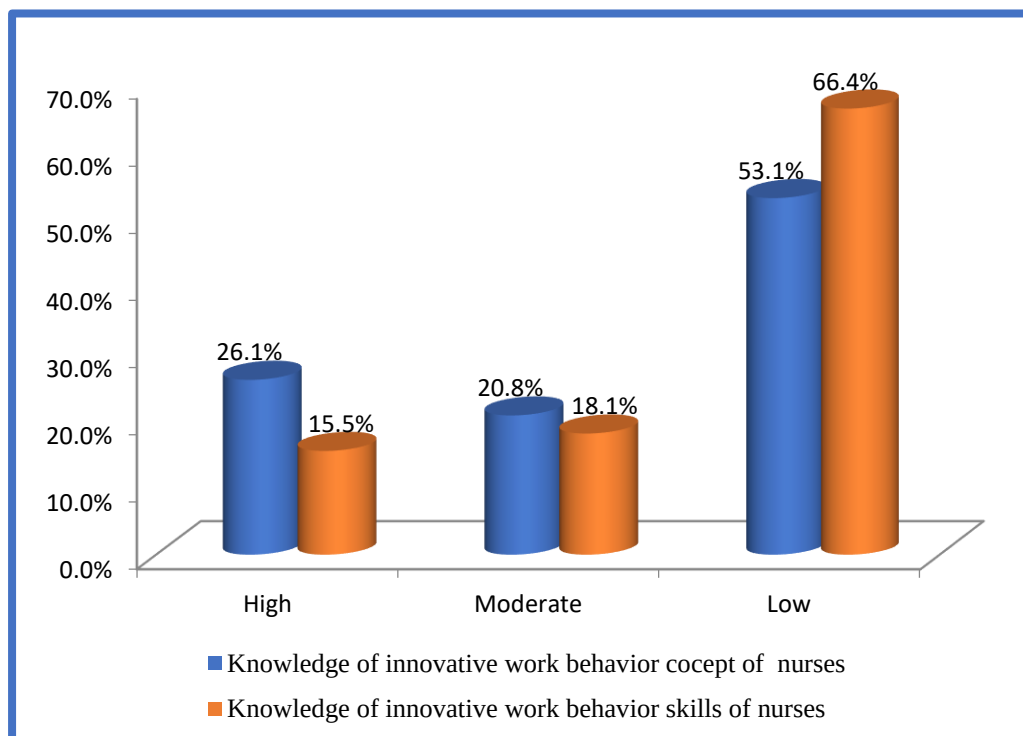


Figure (2) Nurses' knowledge about innovative work behavior (n=375).

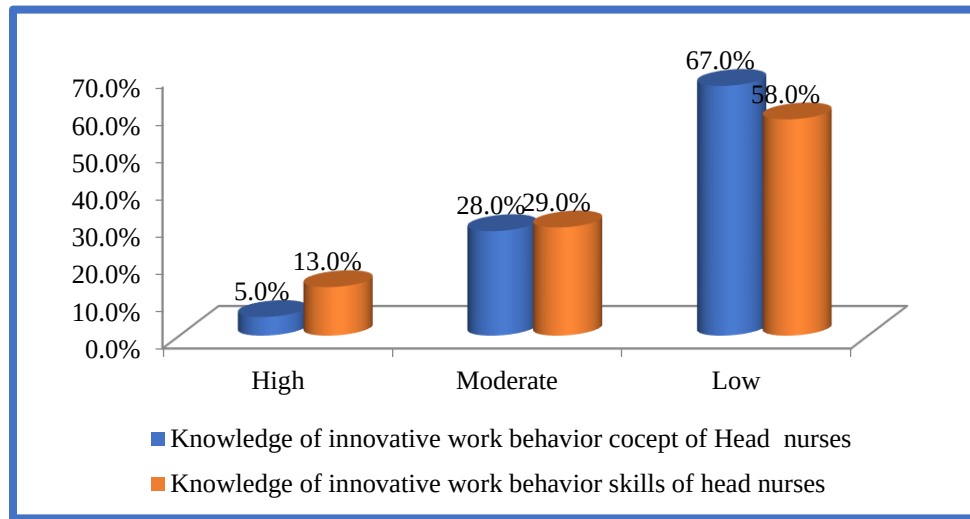


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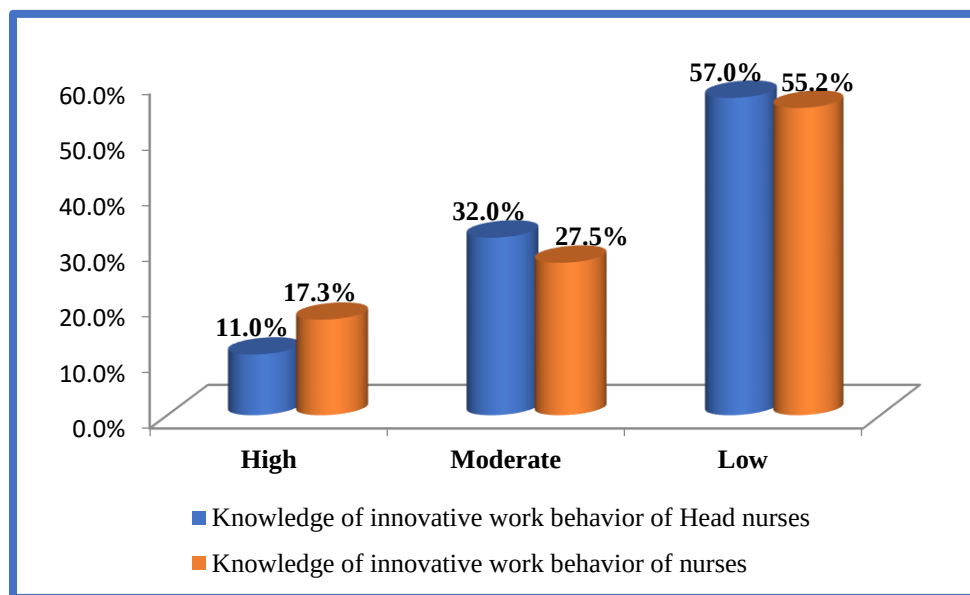


Figure (4) Total level of knowledge about innovative work behavior among nurses and head nurses

Table (3): Relation between nurses' Career plateau, Knowledge of innovative work behavior and job embeddness (n=375)

Variables		Career plateau	nurses' innovative work behavior level	
Career plateau	r	1.000		
	P	----		
nurses' innovative work behavior level	r	.021	1.000	
	P	.684	----	

****.** Correlation is significant at the 0.01 level (2-tailed).



Discussion

Personal and Job Characteristics of the Study Samples.

In the current study, most of the studied nurses were female, the majority of them were married, and the highest percentage of them held an Institute of Nursing degree, followed by less than one third of them held a Diploma of Nursing. In addition, the more than two fifths of the studied nurses aged "from 20 to less than 30" years old. According to experience, the largest group had "From 5 years to less than 10 years" of experience, followed by "1 to less than 5 years". Moreover, the present study revealed that all of the studied head nurses were females, as well, more than three fifths of them aged more than or equal to 40 years old. As well, most of head nurses were married, majority of them had Bachelors of nursing, and more than three fifths of them had 15 or more years of experience.

Regarding career plateau total levels among nurses, the current study highlighted that approximately above half of nurses had low level of career plateau, while more than one fifth of them had high level of career plateau. This may be stem from the fact that the majority of nurses still perceive opportunities for growth, support, and professional advancement, which reduces their sense of career stagnation. This could be linked to ongoing learning opportunities, supportive supervisory relationships, and optimism about future career progression within the nursing field.

Aligned with this result, a study conducted by **Helaly & Abd El Salam, (2024)** in Egypt, to investigate the relationship between career plateau and staff nurses' job satisfaction, and stated that more than one quarter of studied staff nurses had unsatisfactory level of career plateau and less than three quarters of staff nurses had satisfactory career plateau level. Likewise, this result was in accordance with **Gaturu & Njuguna, (2020)** who performed a study to investigate career plateauing and its relationship with secondary school teachers' pursuit of post-graduate studies, in Kenya, and reported that most the studied participants didn't experience career plateauing.

As regard nurses' knowledge about innovative work behavior, the present study clarified that more than half of nurses had low level of knowledge about innovative work behavior concept, while more than one quarter of

them had high level. Additionally, about two thirds of them had low level of knowledge about innovative work behavior skills, while less than one fifth of them had high level. This may be attributed to the fact that although nurses demonstrate some understanding of the general ideas behind innovative work behavior, their overall knowledge remains limited, possibly because of insufficient exposure to structured training programs or formal education on innovation concepts and skills in nursing practice.

This result was supported by **Li et al., (2025)**, who conducted a multicenter latent profile analysis in China to examine nurses' innovative work behavior, reported that a substantial proportion of nurses fell into low-knowledge and low-innovation clusters, particularly in institutions with limited leadership support and minimal innovation training. In contrast, the study conducted by **Bektaş et al., (2025)**, who noticed that most of nurses demonstrated high levels of innovative work behavior competence. Also, they stated that transformational leadership and psychological empowerment significantly enhanced the conceptual understanding and skill application of innovative work behavior.

Pertaining head nurses' total knowledge about innovative work behavior, the current study portrayed that more than two thirds of head nurses had low level of knowledge about innovative work behavior concept, while minority of them had high level. Additionally, more than half of them had low level of knowledge about innovative work behavior skills, while less than one fifth of them had high level. This may be due to the fact that, although head nurses possess a basic conceptual and practical understanding of innovative work behavior, their overall knowledge appears insufficient, likely because of limited formal training or institutional emphasis on innovation-focused leadership.

This result suggests that innovation is not yet fully integrated into nursing leadership development programs. This may also reflect that their daily administrative responsibilities prioritize operational and managerial duties over creative or strategic thinking. This result was in accordance with study in Saudi Arabia carried out by **Abou Hashish et al., (2025)** to investigate nurse managers' perspectives on digital transformation and informatics competencies in E-



Leadership, and found that nurse managers require additional e-leadership competencies for digital transformation, reinforcing that head-nurse knowledge of innovation skills is often insufficient without deliberate upskilling.

Similarly, a study in Egypt carried out by **Abdelhamied et al., (2024)** to assess the effect of training program regarding authentic leadership style for head nurses on creativity and innovative work behavior of nurses, and observed low level of innovative work behavior knowledge among more than half of head nurses before the intervention. In the opposite line, the study conducted by **Ali & Badran, (2024)** who reported high overall ambidextrous leadership and high staff ratings of innovative work behavior, a pattern that contradicts the present finding of predominantly low head-nurse knowledge and suggests that leadership practices and staff innovation levels were strong enough to produce higher knowledge and skills profiles.

According to total level of knowledge about innovative work behavior among nurses and head nurses, the present study illustrated that there was a significant knowledge gap regarding innovative work behavior for both head nurses and nurses, with the majority falling into the low knowledge category. It was clear that the larger proportion of nurses perceived themselves having a high level of knowledge compared to their head nurses. This could be attributed to generational or experiential differences. Younger nurses may be more exposed to modern educational curricula or workshops that emphasize innovation, creativity, and evidence-based practice.

While, head nurses, despite their leadership experience, may rely more on traditional management approaches and have fewer opportunities for professional development in innovation-related areas. In the same line, the study conducted by **Li et al., (2025)**, found that less than one third of nurses fell into the “high innovation behavior” profile, with the majority of them clustered in moderate and low levels. On contrary, **Elsayed et al., (2023)**, who observed that more than two thirds of nurses exhibited moderate levels of innovative work behavior and knowledge sharing, suggesting that staff nurses may self-report higher perceived knowledge or exhibit moderate practical engagement even when composite knowledge scores are low.

As for relation between nurses' Career plateau, Knowledge of innovative work behavior, the present study portrayed that there was no significant relationship between career plateau and innovative

work behavior, and between innovative work behavior, which mean that a nurse's innovative work behavior is largely independent of their career plateau. This may be due to nurses' engagement in innovative work behavior is more strongly influenced by individual factors as personal motivation, creativity.

This result suggests that even when nurses feel limited in career advancement, they may still strive to introduce new ideas and improve work processes out of professional commitment or personal satisfaction. Also, being deeply connected to the organization does not necessarily determine a nurse's tendency to innovate. These findings indicate that fostering innovation among nurses requires more than just enhancing retention or career progression, it necessitates cultivating an environment that values creativity, continuous learning, and empowerment regardless of job stability or hierarchical growth (**Abd-Elrhaman et al., 2020**).

On the other hand, **Li et al., (2025)**, reported that career plateau negatively affected employee creativity, a core component of innovative work behavior, but only when organizational support was low. This indicated that the relationship between plateau and innovation was conditional, and may be non-significant in supportive environments.

Conclusion

Based on the results of the present study and research questions, the study concluded that:

The findings indicate that more than half of the nurses exhibited a low level of career plateau, whereas more than one fifth demonstrated a high level of career plateau. In a similar pattern, more than half of the nurses showed a low level of knowledge regarding the concept of innovative work behavior, while more than one quarter had a high level of knowledge in this area.

Regarding head nurses, more than half were classified within the low knowledge category, followed by a moderate knowledge level among less than one third. A comparable trend was observed among staff nurses, where the majority demonstrated a low level of knowledge, followed by a moderate level and a smaller proportion exhibiting a high level of knowledge related to innovative work behavior.

Recommendations

Based on the study findings, the following recommendations are suggested:

- **Career development programs**

Healthcare organizations should implement career development and job enrichment programs to reduce career plateau among nurses.



Education on innovative work behavior

Continuous educational programs are needed to improve nurses' knowledge and awareness of innovative work behavior and its application in nursing practice.

Supportive leadership

Training nurse leaders on supportive and participative leadership styles is essential to encourage engagement and creativity among nurses.

Promoting innovation culture

Hospitals should encourage idea sharing and recognize innovative contributions to foster a culture of innovation.

Further research

Future studies are recommended to explore other factors influencing innovative work behavior among nurses.

Acknowledgment

For their assistance and collaboration, the author would like to thank all of the nurses who participated in this study

Author's contributions

The study's idea and design, data gathering, data analysis and paper writing were all done by R.E.A.E. The researcher idea was proposed by W.M.M., M.A.G. Participated to the study by reviewing and assisting in developing the research methodology, analyzing and interpreting the data and discussion. all authors have read and approved the final manuscript.

Declaration of conflicting interests

No potential conflicts of interest were revealed by the author with regard to the research, writing, and publication of this work.

Funding

The author received no financial support for the research. Authorship, and publication of this article.

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