

## Organizational Climate in Relation to Head Nurses' Innovative Work Behaviors: Mediating Role of Organizational Innovativeness

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### Abstract

**Background:** Head nurses' Innovative work behaviors are seen as a strategic foundation since organizations must cope with increasing complexity and rapid change to have a place in ever challenging environments. In these contexts, organizations with climate conducive to innovate will be able to cope with challenges faster and get better opportunities. **Aim of the study:** To determine the relation between organizational climate, head nurses' innovative work behaviors and organizational innovativeness. And, to explore the role of organizational innovativeness as a mediating variable. **Subjects and Methods: Research design:** Descriptive correlational design. **Setting:** The study was executed in all inpatient medical, surgical, and intensive care units at Zagazig University Hospitals. **Subject:** convenient sample of head nurses who matched inclusion criteria n=288. **Tools of data collection:** Three tools were used for data collection as follows; Organizational Climate Questionnaire, Innovative Work Behavior Scale, and Organizational Innovativeness Questionnaire. **Results:** Total levels of organizational climate and head nurses' innovative work behaviors were high, while the total level of organizational innovativeness was moderate as reported by head nurses. There was positive statistically significant relation between the total level of organizational climate and the total level of head nurses' innovative work behaviors. Regarding organizational innovativeness, there were highly positive statistically significant relations with the total levels of organizational climate, and head nurses' innovative work behaviors. **Conclusion:** Organizational climate positively related to head-nurses' innovative work behaviors and organizational innovativeness partially mediated the relation between them. **Recommendations:** Maintaining hospital innovative and open to change environment to foster a positive working climate which enhances innovative work behaviors of head nurses.

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**Keywords:** Head-Nurse, Innovative Work Behaviors, Innovativeness, Organizational Climate

### Introduction

The nursing profession has undergone major technological and societal change in recent decades. With the increasing proliferation of all forms of electronic and communication innovations in all areas of society, the nursing profession is currently at a crucial stage in its history <sup>(1)</sup>. Nursing managers who know how to influence the climate for innovation positively and work behaviors that promote innovation will create the most opportunities for innovation in their organizations, which as a result can improve organizational behaviors <sup>(2)</sup>.

Innovation has been identified as one of the most important strategies for health care organizations to stay competitive in today's ever-changing world. In summary, innovation aims to create a new product, process, or service that benefits the individual, the group, and society as a whole. Innovation at the employees' level is commonly regarded as innovative work behavior (IWB). Head nurses'

innovative work behavior is the primary driver of hospital-wide innovation. It is the production of better products, processes, or services that result from identifying problems and developing new options <sup>(3)</sup>.

Innovative work behavior is defined as individual behaviors that can help nurses find or develop new work methods and technologies that serve to improve the quality and efficiency of care. It is also defined as a complicated performance consisting of three distinct tasks; idea generation, idea promotion, and idea realization <sup>(4)</sup>. These are flexible practices and are not integrated in personnel's stipulated job description. That promotes collaboration among employees, unlearning of developed ideas, experimentation, rethinking or knowledge acquisition. Likewise, inquiry-based learning fosters the ability to find and evaluate new talents and competencies and to integrate new knowledge into an organization <sup>(5)</sup>.

According to <sup>(6)</sup>, organizational climate is considered to be main variable for success of health care organizations, not only in their goals but also in achieving innovation and bringing about developments in all their activities, because understanding the work environment is the best way to identify factors that directly impact employee behavior. An appropriate organizational climate leads to innovation and inspiration in the organization and plays a positive role in achieving their goals.

Organizational climate is the recurring patterns of behavior, attitudes, and feelings that characterize life in the hospital which strongly relates to atmosphere and values. It is a group of factors that describe an organization and differentiate it from other organizations. It is also defined as a group of measurable features that employees can perceive directly or indirectly in the workplace <sup>(7)</sup>.

To measure organizational climate, there are nine variables affecting organizational climate as follows; *Structure* is how employees feel about constraints in the group, e.g., how many rules, regulations, and procedures. *Responsibility* means you are your own boss. *Reward* means the perceived fairness of pay and promotion policies. *Risk* refers to the feeling of challenge at work and in the organization. *Warmth* is the feeling of good friendship in the work group and the presence of friendly and informal social groups <sup>(8)</sup>.

Additionally, *Support* is the perceived helpfulness of managers and other staff and the emphasis on mutual support; *Standards* is the perceived value of explicit and implicit goals and performance standards; *Conflict* is the extent to which the nursing team want to hear differing opinions; *Identity* is the sense that one belongs to an organization and is an important member of a work team <sup>(8)</sup>.

Further, Organizational innovativeness has often been defined as the number of innovations that organizations have introduced. This view implies that the more innovations an organization introduces, the more innovative it is. Organizational innovativeness represents an organizational climate that supports the continuous

development of new ideas and products over time. In addition, a hospital's innovation capability indicates the hospital's tendency to adopt new ideas, novel experiments, and creative processes that may lead to advanced products, services, and technologies <sup>(9)</sup>.

Moreover, Innovation mediates the relationship between organizational culture and organizational behaviors. Innovative organizational culture generates structures that encourage innovative concepts and forms of thinking. In addition, Innovative organization maintains inventions through continuous development and innovative ideas which as a result encourages innovative work behaviors <sup>(10)</sup>.

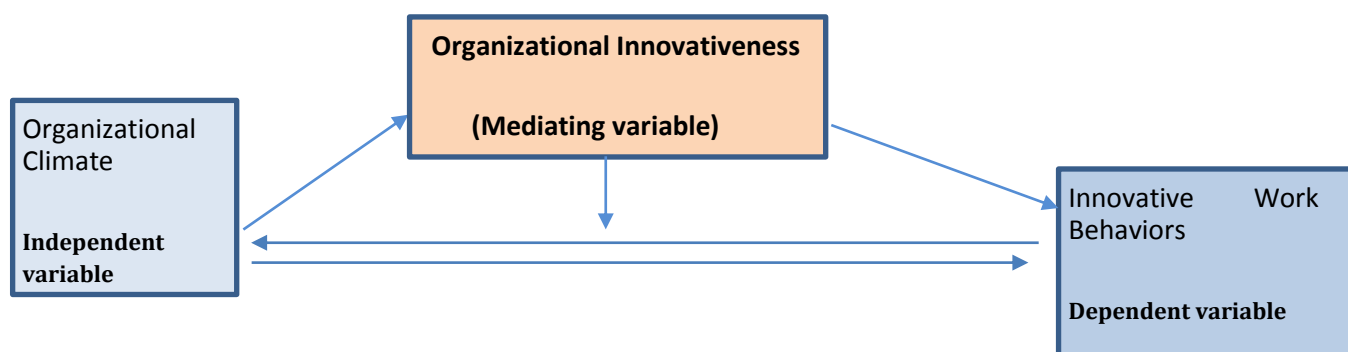
### **Conceptual Framework of the study**

The current study depended on previous literature which includes various studies proved the relation between organizational climate and innovative work behaviors such as; <sup>(11,12,13)</sup>. Regarding the relation between organizational climate, innovation and innovative work behaviors, number of studies handled this aspect and assured the relations among them such as; <sup>(14,15,16)</sup>.

According to the recommendations of <sup>(17)</sup>, For a variable to act as a mediator they stated the following conditions; (a) independent variable must be related to dependent variable, (b) independent variable must be related to the mediator, (c) mediator must be related to the dependent variable, and (d) when independent variable and the mediator are included, the direct relation between independent variable and the dependent variable should considerably increase (partial mediation).

Based on the above-mentioned derivation and reviewing related literature regarding study variables. The current study was designed to define the relation between organizational climate and innovative work behaviors, and at the same time tried to find whether there is a significant role of organizational innovativeness as a mediating variable on the relation between them. Therefore, researchers constructed the following figure indicating the conceptual model for the current research (**Figure A**).

was designed to assess the relation between organizational climate and innovative work behaviors and identifying whether there is mediating role of organizational innovativeness on the suggested relation between these variables or not which was expected to resolve research gap regarding this point.



**Figure A: The researchers' proposed conceptual framework of study variables**

### Significance of the study

Innovative work behavior becomes a decisive variable for competitiveness and long-term survival. Having innovative staff members are considered the main strength for today's organizations success<sup>(18)</sup>. In spite of increasing academic curiosity to identify organizational factors that underlie personal innovative work behaviors, our knowledge is still incomplete<sup>(19)</sup>. With regard to the role of the mediating variable in explaining the relation between the independent and the dependent variable, It can be used to interpret how or why there is a relation between two variables. Also, mediator can be defined as the proposed process by which an independent variable can produce changes on a dependent variable.

Also, the current stream of literature lacks the empirical testing the relation of organizational climate and innovative work behavior with the role of organizational innovativeness. Therefore, the current study

### Aim of the study:

To determine the correlation among organizational climate, head nurses' innovative work behaviors and organizational innovativeness. And to explore the role of organizational innovativeness on the relation between organizational climate and head nurses' innovative work behaviors as a mediating variable. To attain the research aim, we articulated the following questions;

### Research Questions

- What is the level of organizational climate as reported by the studied head nurses?
- What is the level of head nurses' innovative work behaviors as reported by them?
- What is the level of organizational innovativeness as reported by the studied head nurses?
- Are there correlations among total levels of organizational climate, head nurses' innovative work behaviors and organizational innovativeness?
- Is there mediating role of organizational innovativeness on the relation between

organizational climate and head nurses' innovative work behaviors?

## Subjects and Methods:

### Study design

Descriptive correlational design was used to carry out this study.

### Study setting.

This research was conducted in all inpatient units at Zagazig University Hospitals that provide health care for large number of patients and offer medical care in various specialties. It consists of five hospitals namely; New Surgical Hospital includes 633 beds, Outpatient Clinics Hospital included 43 Clinic, Internal Medicine Hospital includes 277 beds, Emergency hospital includes 170 beds, and The Delivery and Premature Hospital includes 111 beds.

### Study subjects.

Convenient sample of head nurses "320" who accepted to join the study and matched inclusion criteria; had at least three experience years, and available in the previously mentioned study setting at the time of collecting the data. Final number of study subject was 288. They are distributed as follows; 110 head-nurses work at New Surgical Hospital, 23 head nurses work at Outpatient Clinics Hospital, 75 head nurses work at Internal Medicine Hospital, 44 head nurses work at Emergency hospital, and 36 head nurses work at Premature Hospital.

### Tools for data collection

The researchers used three tools for data collection namely;

**Tool1: Organizational Climate Questionnaire:** It included two parts;

**Part I:** Personal data of research subject: involved personal data such as age, gender, educational qualifications, and experience years.

**Part II:** A structured questionnaire had been developed by **Litwin and Stringer** <sup>(20)</sup> then it was modified by **Yashwanth, Balaji and**

**Narendra** <sup>(21)</sup>. And, it was modified by the researchers to assess the level of organizational climate as reported by the studied head nurses. It included nine variables covering 50 items as follows; Structure "8" items, Responsibility "7" items, Reward "6" items, risk "5" items, Warmth "5" items, Support "5" items, Standard "6" items, Conflict "4" items and Identity "4" items.

### Scoring system

Responses of research subject were rated according to five-points Likert-scale ranging from 1-5 as follows; strongly disagree= 1, disagree=2, neutral =3, agree =4 and strongly agree =5. The score ranged from 50 to 250. The cut point was made at 60% =150. Accordingly, the level of organizational climate was considered "Good" if the percent is  $\geq 75\%$  equals  $\geq 187.5$  points, "Fair" from 60% to less than 75% equals  $150 < 187.5$  points, and "Poor" if the percent  $< 60\%$  those equals  $< 150$  points.

### Tool 2: Innovative Work Behaviors Scale:

Self- reported scale was developed by **De Jong and Den Hartog** <sup>(22)</sup> then it was adapted by the researchers to assess the level of head nurses' innovative work behaviors as reported by them. It consisted of "5" domains covering "16" items as follows; Problem recognition "2" items, Idea generation "3" items, Idea promotion "2" items, Idea application "3" items and Innovation output "6" items.

### Scoring system

Responses were rated using a five- points Likert- Scale ranging from 1-5 as follows; strongly disagree= 1, disagree=2, neutral =3, agree =4 and strongly agree =5. The score ranged from 16 to 80. The cut point was made at  $60\%=48$ . Accordingly, the level of head nurses' innovative work behaviors was considered "High" if the percent is  $\geq 75\%$  equals  $\geq 60$  points, "Moderate" from 60% to less than 75% equals  $48 < 60$  points, and "Low" if the percent  $< 60\%$  equals  $< 48$  points.

### 2.4.3. Organizational Innovativeness Questionnaire

A structured questionnaire was developed by Nyaribo<sup>(23)</sup> then it was modified by the researchers to assess the level of organizational innovativeness as reported by the studied head nurses. It consisted of four domains covering "31" items as follows; Product innovation "8" items, Process innovation "10" items, Market innovation "8" items and Technological innovation "5" items.

### Scoring system

Responses of study subjects were rated according to five- points Likert- scale ranging from 1-5 as follows; strongly disagree= 1, disagree 2, neutral 3, agree =4 and strongly agree =5. The score ranged from 31 to 155. The cut point was made at 60%=93. Accordingly, the level of organizational innovativeness was considered "High" if the percent is  $\geq 75\%$  equals  $\geq 116.25$  points, "Moderate" from 60% to less than 75% equals 93 - < 116.25 points, and "Low" if the percent < 60 % equals < 48 points.

### Content Validity and Reliability:

The three tools were reviewed by committee of five professors from nursing administration departments at five universities as follows; Benha, Zagazig, Helwan, Menofia, and South valley Universities. According to their recommendations, tools were modified for clarity of sentences and appropriateness of the content. The committee determined the face and content validity of them. The reliability of the three tools was examined by Cronbach Alpha Coefficient Factor Test. The results were as follows;  $\alpha=0.91$ ,  $\alpha=0.85$ ,  $\alpha=0.89$ , respectively for "Organizational Climate Questionnaire, Innovative Work Behaviors Scale, and Organizational Innovativeness Questionnaire".

### Pilot study

Before starting data collection, the revised tools' clarity, objectivity, feasibility and time needed for filling them were tested through pilot study on 10% of total head nurses' number (29). No modifications were required. So, the pilot study number was added in the main subject.

### Field work

The current research covered about eleven months from the beginning of July 2021 to the end of June 2022. It includes Preparatory phase, Pilot study, and Fieldwork.

### Preparatory phase

This phase was carried out over four months (from the beginning of July 2021 to the end of October 2021). The researchers performed an extensive review of national and international related literature. Three tools were prepared and translated into Arabic form to be clearly understood by the studied subjects. Validity and reliability of the tools were checked. Then, pilot study was done and the three tools were finalized based on the results of the pilot study.

Collecting Data covered about one month and half, from the start of Nov 2021 to the mid of Dec 2021. The researcher distributed the tools for data collection with instructions for filling them in three days per week (Saturday, Monday, and Wednesday) in morning and afternoon shifts. The time required to fill the three sheets was nearly 20 - 30 minutes. The filled sheets were collected in time and revised to check their completeness and to avoid any missed data. The average number of collected sheets per day were about 12–20 sheets. Finally, the researchers thanked the head nurses for their help.

### Administrative and Ethical considerations:

Official approval was obtained from the Dean of Faculty of Nursing, Zagazig University and Director of Zagazig University Hospitals through official letters explaining the aim of the study to have the agreement for collecting data. Prior to starting the research, the researchers met head nurses at Zagazig University Hospitals, they clarified the aim of the study, and assured that their involvement is voluntary and they can withdraw from the study at any time. In addition, confidentiality and anonymity of the subject were kept by coding the sheets. Finally, they determined the suitable time for data collection according to their workload to ensure full cooperation. The study results and recommendations will be given to the hospital administration for possible benefits.

**Statistical analysis:**

SPSS (version 25) software computer package was used for data entering and analyzing. Descriptive statistics were applied e.g., Frequency, Percentages, Mean, and Standard deviation. Paired T-test and Person Correlation, and Correlation coefficient ( $r$ ) were used. Statistically significant difference was considered at  $p$ -value  $\leq 0.05$  and highly statistically significance when  $p \leq 0.005$ . To calculate the Cronbach alpha coefficient, the variance of the scores of each questionnaire and the total variance were calculated. Pearson's correlations and multiple linear regression analysis were conducted, and a path analysis by Amos software was utilized to define direct/indirect effects.

**Results**

**Table 1:** clarifies that the mean age and experience years of head nurses were **32.41±6.24** & **8.57±3.42**, respectively. Less than three quarters of them (**72.2%**) aged between 25-35 years and had from 15-25 years of experience. Additionally, the highest percent of head nurses (**94.4%**, **91.7%**) were female and had Technical Nursing Institute Certificate, respectively.

**Table 2:** shows that the total mean scores and standard deviation of organizational climate was **180.67±29.05**, and the highest mean score was **18.14±3.09** related to "Identity domain". Regarding organizational innovativeness, the total mean score was **111.58±11.85**, and the highest mean score was **30.95±2.76** related to "Market Innovation domain". Considering head nurses' innovative work behaviors, the total mean score was **59.15±8.85**, and the highest mean score was **12.72±1.70** related to "Idea Generation domain".

**Figure 1:** Indicates that the total level of organizational climate was high as reported by the studied head nurses (**60%**).

**Figure 2:** Clarifies that the total level of head nurses' innovative work behaviors was high as reported by them (**55%**).

**Figure 3:** Shows that the total level of organizational innovativeness was moderate as reported by the studied head nurses (**43%**).

**Table 3:** Indicates that there was positive statistically significant relation between the total level of organizational climate and the total level of head nurses' innovative work behaviors ( **$r=.240$ ,  $p=.03^*$** ). Also, there was highly positive statistically significant relation between total levels of organizational innovativeness and total levels of organizational climate, and highly positive statistically significant relation between total levels of organizational innovativeness and total levels of head nurses' innovative work behaviors ( **$r=.710$ ,  $p<.000^{**}$ ,  $r=.95$   $p<.000^{**}$** ), respectively.

**Table 4(a, b) & Fig 4:** Illustrates that there was highly positive statistically significant relation between the total levels of organizational climate and head nurses' innovative work behaviors in the presence of organizational innovativeness ( **$r=.22$   $p<.001^{**}$** ).

**Discussion**

The health care organizations which concerned with their survival and sustainability have to adopt an innovative approach for delivery of efficient services while coping with unexpected events, and critical situations such as the Covid-19 pandemic which posed greater criticalities to health care organizations (**Channa et al.,**)<sup>(24)</sup>. Innovative work behavior is crucial factor for organizations to innovate and develop a competitive advantage. It is therefore essential to know how to create an organizational climate that cultivates innovation among employees. Effective management of organizational climate supportive of innovation is a key challenge for maintaining Innovative work behaviors (**Shanker et al.,**)<sup>(2)</sup>.

The present research aimed to determine the relation between organizational climate, head nurses' innovative work behaviors and organizational innovativeness. And, to explore the role of organizational innovativeness on the relation between organizational climate

and head nurses' innovative work behaviors as a mediating variable

Consequently, the following questions were articulated; "What is the level of organizational climate as reported by the studied head nurses?" "What is the level of head nurses' innovative work behaviors as reported by them?" "What is the level of organizational innovativeness as reported by the studied head nurses?" "Are there correlations among total levels of organizational climate, head nurses' innovative work behaviors and organizational innovativeness?" and finally "Is there mediating role of organizational innovativeness on the relation between organizational climate and head nurses' innovative work behaviors?"

**Firstly**, the result of current research showed that two thirds of head nurses aged between 25-35 years. In addition, the highest percent of head nurses were female, and had Technical Nursing Institute Certificate. Regarding experience years, more than two thirds of them had from 15-25 years of experience.

**Regarding the 1<sup>st</sup> research question concerning the total level of organizational climate as reported by the studied head-nurses at Zagazig University Hospital**, the current results indicated that the total level of organizational climate was "High". From researchers' viewpoints, this may be due to the general management of the hospital communicates effectively with their team and adopts flexible working environment. In addition, study subjects had long experience years which create sense of familiarity with hospital climate.

This result was in the same line with **Ahmed, Ata and Abd-Elhamid** <sup>(25)</sup> they indicated that organizational climate of Zagazig University Hospital was positive. In addition to, **Kassem and Gaber** <sup>(26)</sup> they found that the total mean score of the organizational climate of University Hospital was at high level.

**Addressing the 2<sup>nd</sup> research question concerning the total level of head nurses' innovative work behaviors as reported by them at Zagazig University Hospital**, the current result found that the total level of head

nurses' innovative work behaviors was "High". From researchers' view points, this may be due to human behavior is heavily influenced by the working environment. According to this aspect, when head nurses work at innovative work environment, they will positively be affected and as a result their behaviors will be adapted to be innovative. In addition to, the head nurses in the current study perceived that Zagazig University Hospital climate is at good level and has good level of innovation. So, they are supposed to have innovative working behaviors.

This result was in the same line with **Wang et al.**, <sup>(27)</sup> they found through their study that head nurses had high level of innovative work behaviors. Moreover, **El Desoky et. al.**, <sup>(28)</sup> stated that head nurses had high level of innovative work behaviors at Kafr El Sheikh University Hospital.

**Answering the 3<sup>rd</sup> research question concerning the total level of organizational innovativeness at Zagazig University Hospital as reported by the studied head-nurses**, the current result showed that the total level of organizational innovativeness was "Moderate". From researchers' viewpoints, this may be due to organizational innovativeness takes a long period of time to be attained and so its impact needs years to be visible for head-nurses.

**Regarding the 4<sup>th</sup> research question concerning correlations among total levels of organizational climate, head nurses' innovative work behaviors and organizational innovativeness**, the results of the current research indicated that; **Firstly**, there was positive statistically significant relation between organizational climate and head nurses' innovative work behaviors. From researchers' view point, this may be due to increasing positive feelings among head nurses provided by good work climate and their feeling of compassion, reassurance, confidence, which motivates them to not only do their best but to innovate in their routine performance.

This result was supported by **Bos-Nehles and Veenendaal** <sup>(11)</sup> they had stated that when the organization climate providing value, rewarding innovative ideas, and the work environment is focused on generating and

championing new ideas, they will recreate with innovative behaviors.

Additionally, this result was in agreement with the results of studies by **Yeoh and Mahmood**<sup>(14)</sup>, **Shanker et al.**<sup>(2)</sup>, **Hua and Abdullah**<sup>(13)</sup>, **Abbas, Mousa, and Ali**<sup>(29)</sup> they had found significant positive relation between organizational climate and innovative work behavior. In addition to, **Khattab**<sup>(30)</sup> the researcher had indicated that the organizational climate is an effective variable in *increasing innovative work behaviors*.

**Secondly, concerning relation between organizational innovativeness and organizational climate, the findings of the current research indicated that; there is highly positive statistically significant relation between them. From researchers' view point, this may be due to shared positive opinions, attitudes and overall agreement regarding innovation within the hospital in-turn promotes adoption of innovation. This result is in accordance with Razavi and Attarnezhad**<sup>(31)</sup> they had found positive relation between organizational climate and innovativeness.

**Regarding the relation between organizational innovativeness and head nurses' innovative work behaviors, the findings of the current research indicated that** there is a highly positive statistically significant relation between them. From researchers' view point, this result may be interpreted as when the work environment is innovative, head nurses' ideas are appreciated and they feel that they have opportunities for innovation, this promotes an input of innovative ideas and then application of these ideas in the form of innovative behaviors.

This result was supported by **Kasim and Noh**<sup>(32)</sup> they concluded that activities of the organizational innovativeness and performed innovation activities had a high positive effect on members' innovative work behaviors. Also, **Bysted**<sup>(33)</sup> stated that when employees have positive perception of innovation in the organization, innovative work behaviors of them will increase.

Moreover, this result agreed with the result of **Awan & Javed**<sup>(34)</sup> they stated that organizational innovativeness had positive

relation with employee's innovative performance. Additionally, **Lukes and Stephan**<sup>(35)</sup> indicated that innovative work behaviors had positive relation with organizational innovation.

**Addressing the 5<sup>th</sup> question of the current research concerning the role of organizational innovativeness on the relation between organizational climate and head nurses' innovative work behaviors as mediating variable**, the current research results showed that the relation between organizational climate and innovative work behaviors became highly significant when organizational innovativeness is added into the model which indicated that organizational innovativeness has indirect role and partially mediates the relation of organizational climate and innovative work behaviors. From researchers' view point, this may be due to organizations with good climate that promotes high level of innovation through developing innovative activities and processes; as a result they motivate head nurses to adopt innovative behaviors of the work.

In the same aspect, this result was supported by **Übius et al.**<sup>(15)</sup> they stated that the organization which has a strong innovative climate is likely to produce novel ideas, and expect individual innovation. In addition, **Sarwar et al.**<sup>(11)</sup> they indicated through their study that innovative organizational climate plays an important role in affecting personnel's innovative work behaviors. Moreover, **Yeoh and Mahmood**<sup>(14)</sup>, **Contreras et al.**<sup>(16)</sup> And **Önhon**<sup>(36)</sup> they found positive relation of innovative organizational climate and innovative behaviors of their work.

## Conclusion

In consistent with the current research findings, we can conclude that; organizational innovativeness has highly positive statistically significant relations with organizational climate, and with head nurses' innovative work behaviors. Additionally, organizational climate positively related to head nurses' innovative work behaviors and this relation became high in the presence of organizational innovativeness. So, it can be concluded that organizational innovativeness partially mediates the relation between organizational



## **Recommendations**

Depending on the findings of the current research, it would be promising to implement the following recommendations;

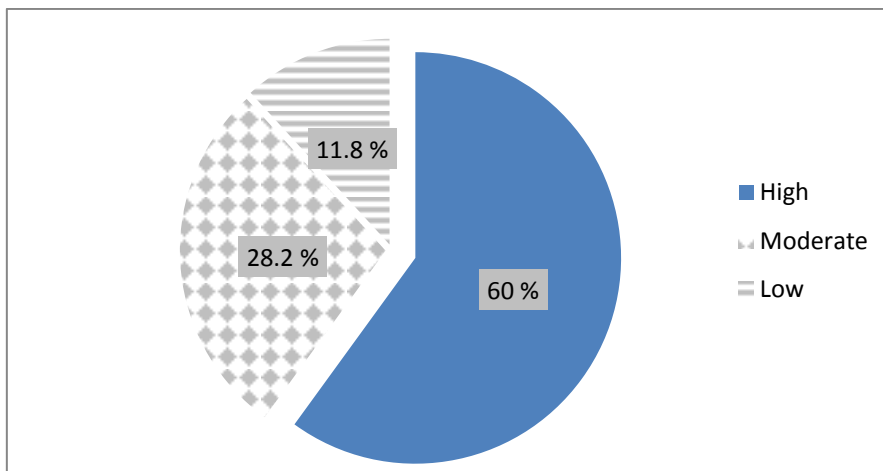
- Developing an effective accountability system based on clear principles and criteria and adopting an incentive system that rewards cognitive efforts.
- Creating of work climate conducive for organizational innovativeness
- Maintaining effective management of hospital environment.
- Maintaining hospital innovative which enhances innovative work behaviors of head nurses.
- Recognizing and encouraging nursing team innovative ideas and behaviors.
- Providing head nurses with adequate time for implementing innovative ideas, reward their performing of innovative behaviors

Table (1): Personal data of research subject (n=288)

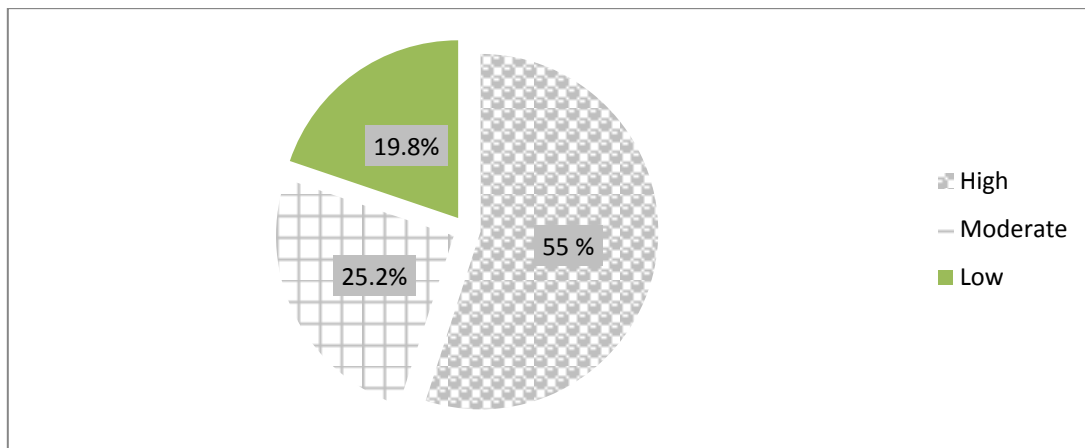
Items	No	%
<b>Age</b>		
25- 35 yrs.	208	72.2
35-45 yrs.	64	22.2
>45 yrs.	16	5.6
Mean $\pm$ SD	32.41 $\pm$ 6.24	
<b>Gender</b>		
Male	16	5.6
Female	272	94.4
<b>Experience years</b>		
5-10 yrs.	24	8.3
10-15 yrs.	56	19.4
15-25 yrs.	208	72.2
Mean $\pm$ SD	8.57 $\pm$ 3.42	
<b>Educational Qualifications</b>		
Technical Institute of Nursing	264	91.7
Nursing Bachelor degree	16	5.6
Post- studies of nursing science	8	2.8

**Table (2):** Mean Scores and Standard Deviation of Organizational Climate, Innovativeness and Head Nurses' Innovative Work Behaviors at Zagazig University Hospitals (n=288)

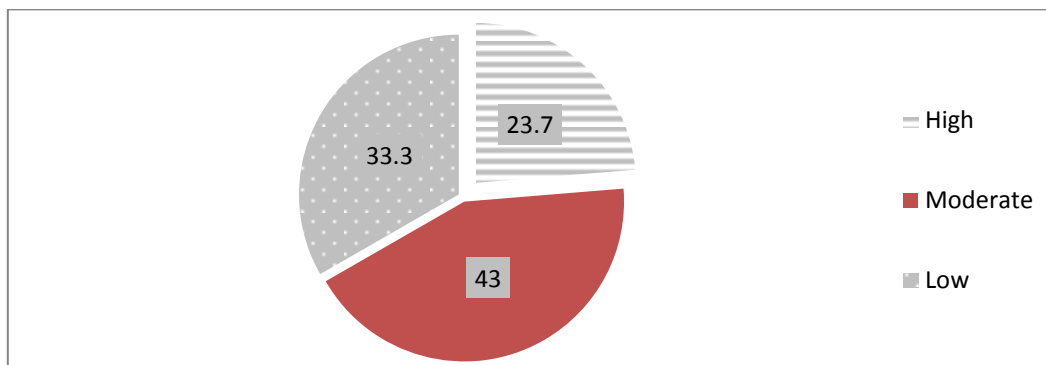
<b>Variables</b>	<b>Maximum Score</b>	<b>Mean ± SD</b>	<b>Mean %</b>
- Structure	40.00	18.74±2.52	46.85
- Responsibility	35.00	20.39± 3.24	58.26
- Reward	30.00	25.73±3.10	85.76
- Risk	25.00	22.24±4.00	88.96
- Warmth	25.00	21.08±2.24	84.32
- Support	25.00	20.81±3.99	83.24
- Standard	30.00	15.69±2.90	52.3
- Conflict	20.00	17.85±3.97	89.25
- Identity	20.00	18.14±3.09	90.7
<b>Total Organizational Climate</b>	<b>250.0</b>	<b>180.67±29.05</b>	<b>72.26</b>
- Product innovation	40.00	26.68±1.91	66.7
- Process innovation	50.00	37.25±3.64	74.5
- Market innovation	40.00	30.95±2.76	76.7
- Technological innovation	25.00	16.70±3.54	66.5
<b>Total Organizational Innovativeness</b>	<b>155.0</b>	<b>111.58±11.85</b>	<b>72.16</b>
Problem recognition	10.00	6.44±1.64	64.4
Idea generation	15.00	12.72±1.70	84.8
Idea promotion	10.00	5.05±3.16	50.5
Idea application	15.00	11.86±2.17	79.06
Innovation output	30.00	19.08±6.94	63.6
<b>Total Innovative work behaviors</b>	<b>85</b>	<b>55.18±15.61</b>	<b>64.91</b>



**Figure (1):** Total levels of Organizational Climate at Zagazig University Hospitals as reported by the studied Head- Nurses (n=288)



**Figure (2):** Total levels of Head-Nurses' innovative work behaviors at Zagazig University Hospitals as reported by them (n=288)



**Figure (3):** Total levels of organizational innovativeness at Zagazig University Hospitals as reported by the studied Head- Nurses (n=288).

**Table (3):** Correlations among Organizational Climate, Innovativeness and Head Nurses' Innovative Work Behaviors at Zagazig University Hospitals

Variables	Innovative work behaviors		Organizational Climate	
	r	p. value	r	p. value
Organizational climate	.240	.03*	-----	
Organizational innovativeness	.956	.000**	.710	.000**

**Table 4A:** Standardized and Unstandardized Simple Regression Coefficients of Study Variables

Model	Unstandardized Coefficients		Standardized Coefficients	T. value	P. value
	B	Std. Error	β		
(Constant)	32.99	14.57		2.263	.027
Organizational Climate	.236	.109	.105	2.172	.033*
Organizational Innovativeness	.878	.048	.881	18.150	.000**
Model summary					
Model	R	R square		Adjusted R square	
Regression	.959	.919		.917	

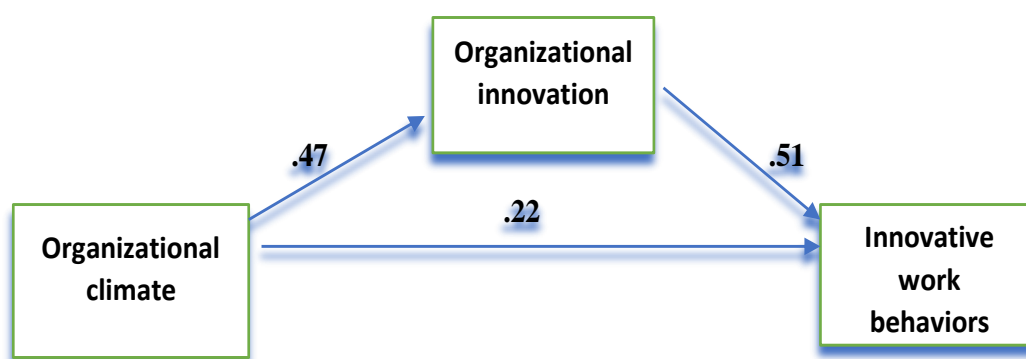
\*Statistically significant (P ≤ 0.05) \*\*Highly Statistically significant (P ≤ 0.005)

**Dependent Variable:** Organizational climate, Innovative work behaviors.

**Mediator (constant):** Organizational Innovativeness.

**Table 4B:** Direct and Indirect role of Organizational Innovativeness

Variables Path	Estimate	Standard Error	T-Value	P-Value
<b>Direct role</b>				
Organizational Climate → Innovative work behaviors	.224	.072	4.021	.033*
Organizational Climate → Organizational Innovativeness	.472	.064	7.684	.000**
Organizational Innovativeness → Innovative work behaviors	.510	.051	10.79	.000**
<b>Indirect role</b>				
Organizational Climate -> Organizational Innovativeness -> Innovative work behaviors	0.240	.056	5.458	.001**

**Fig(4):** Relation between Organizational Climate and Head Nurses' Innovative Work Behaviors in presence of Organizational Innovativeness.

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