

Nurse Managers' Perception about Future Foresight Tools and Innovation Skills

Walaa Montaser Hassan¹, Samah Mohamed Abdalla² & Hanaa Mohamed Ahmed³

¹ Nursing Specialist at Bani Hussein Nursing Institution, Egypt.

² Professor of Nursing Administration, Faculty of Nursing, Assiut University, Egypt.

³ Assistant Professor of Nursing Administration, Faculty of Nursing, Assiut University, Egypt.

Abstract:

Background: Future foresight tools used by futurists use to expand knowledge and to explore many plausible futures. Innovation is a process by which a domain, a process, or a service is renewed and brought by applying new processes. **Aim:** Assess nurse managers' perception about future foresight tools and innovation skills. **Design:** A descriptive correlational study design. **Setting:** at Assiut city Hospitals of the Ministry of Health and Assiut University Hospitals. **Subjects:** All nurse managers at Assiut city Hospitals (N. =170), and All nurse managers at Assiut University Hospitals (N. =217). **Data collection Tools: Tool (I) include two parts: Part I:** (personal & job characteristics for nurse managers). **Part II:** Future foresight questionnaire. **Tool II:** Innovation skills questionnaire. **Results:** There was a positive correlation and statistically significant difference between the perception of nurse managers for the future foresight tools and innovative skills. **Conclusion:** The perception of nurse managers about future foresight tools impact on the level of innovation skills which demonstrate a moderate level of perception at Assiut University Hospitals and low level of perception at Ministry of Health Hospitals. **Recommendation:** Holding an educational program for nurse managers in Assiut city Hospitals of the Ministry of Health to increase and develop their perception about future foresight and innovation skills.

Keywords: *Future foresight, Innovation skills, Nurse Managers & Perception.*

Introduction:

Innovation keeps an organization competitive and adaptive to change. Nurse Managers are looking for new ways to innovate and transform, being challenged to influence quality, design new care delivery models, and create workplaces that empower nursing staff to advance new ideas that lead to innovation in the organization (Snow, 2019). The innovation is a process by which a domain, a process, or a service is renewed and brought by applying new processes, introducing new techniques, or establishing successful ideas to create new value (Innolytics, 2022).

Foresight is the ability, the skill and art of describing, explaining, exploring, predicting, and interpreting future development, as well as assessing the consequence for decisions and other actions in the present (Duin & Patrick, 2019). Mohamed, (2021) & Suleiman, (2018) mentioned the following foresight tools : Delphi method , environmental scanning, future wheel, impact probability matrix, road mapping, scenario planning, stakeholders identification and analysis, diamond strategy, the analysis of strengths, weaknesses, opportunities and threats (SWOT), the analysis of threats, opportunities, weaknesses and strengths (TOWS), porter analysis, PEST analysis, and value proposition canvas .

Environmental scanning is the internal communication of external information about issues that may potentially influence an organization's decision-

making process (Albright, 2014). Threats, opportunities, weaknesses and strengths (TOWS) analysis is an extension of the (SWOT) analysis framework that identifies the strengths, weaknesses, opportunities and threats but then goes further in looking to match up the strengths with opportunities and the threats with weaknesses (Kulshrestha & Puri, 2017).

Road mapping is the process of creating a roadmap of the existing paths or routes available to reach a desired destination. Road mapping is binary in nature, meaning that anticipation what might happen in the future and the plans that link the course of action. Many different approaches to road mapping have been developed, and roadmaps can take many forms, although generally the focus is a graphical representation that provides a high-strategic view of the topic of interest (Robert, 2020).

Futures wheel is a foresight method that provides a model of the future based on the consequences of an event or trend for obtaining a deeper understanding of the problem domain being analyzed, so that the generated future model may be as accurate as possible (Visual Paradigm Online, 2022). The Delphi method is a technique for organizing group communication processes to deal with complex issues, and is used especially by experts in a series of iterative learning rounds (Twin, 2022). The probability matrix is usually used to prioritize the combination of probability and impact scores and helps in determining which risks need detailed risk

response plans (Grist, 2022). Scenario planning is a disciplined way to formulate strategic hypotheses in the context of existing driving forces and the uncertainties. It helps to better prepare organization for the new challenges, and Increase organization's ability to better adapt to the ever-changing environment (Savkin, 2022) & (Rami & David, 2022). Stakeholder analysis is the process of identifying, assessing, and prioritizing the people who will be affected by organization, stakeholder analysis involves identifying and analyzing stakeholders, and finding all individuals, groups, and organizations that can influence or be affected by the achievement of the organization's goals (Patrick, 2022).

The diamond strategy is an effective way to analyze, visualize, summarize and share the strategy of a particular process or service. The three horizons framework is a simple, intuitive way to encourage dialogue about current challenges in the present, aspirations for the future, and the types of innovations needed to address both simultaneously. The three horizons framework for innovation and growth can be used. When using this framework for innovations, the first horizon is for operators who want to expand the core service; the second horizon is for organization builders who are developing new opportunities; the third horizon is specifically designed to create viable options (Kenton, 2022).

Foresight and innovation are among the important indicators that direct the institution to several matters, the most important of which are; Surveying the environment, identifying patients and customer behavior trends, prevailing organization trends, identifying defects, modern technologies, competitors, patient needs, recklessness and lack of clarity, in addition to interpreting data, identifying and anticipating opportunities and threats, and evaluating available options for decision-making (Kyzym, 2020).

Significance of the study:

While searching in studies the researcher found that, there were two international studies related to the topic (future foresight tools and innovative skills), first titled by "Creativity and innovation, An essential competency for the nurse leader" explains the innovation by the author (Snow, 2019), the second title "Keeping the balance" explains the future foresight tools for the author (Duin & Patrick, 2019). Furthermore, No national studies focused on the perception of nurse managers about future foresight tools and innovative skills, so, the researcher enthusiastic to conduct this study to focus on it.

Aims of the study:

This study aimed to: Determine the perception of nurse managers about future foresight tools and innovation skills.

Specific objectives:

- Assess perception levels of nurse managers about future foresight tool and innovation skills.
- Assess the relation between future foresight tools and innovation skills among nurse managers.

Research Questions

To fulfill the aims of the present study, the following research questions are formulated.

Q1: What are the perception levels of nurse managers about future foresight tools and innovation skills?

Q2: Is there a relation between future foresight tools and innovation skills among nurse managers?

Subjects & Method

The current study's subjects and techniques were discussed under four designs (technical design, administrative design, operational design, and statistical design)

Technical design:

Research design: Descriptive, Correlational design was used in the present study.

Setting:

The present study was conducted at Assiut city Hospitals of the Ministry of Health (N. = 6 hospitals) and Assiut University Hospitals (N. = 7 hospitals).

Subjects of the study:

The present study included a convenient number of nurse managers working at Assiut University Hospitals (N. = 217) was divided into seven hospitals: Main hospital (N.= 44), Women's Health Hospital (N. =20), Pediatric Hospital (N. =30), El Rajhi liver Hospital (N. =22), Al Orman cardiac Hospital (N. =38), Neurological Hospital (N. =33), Urological Hospital (N. =30), and at Assiut city Hospitals of the Ministry of Health (N. =170) was divided into six hospitals : Assiut General Hospital (N. = 28), Al Eman general Hospital (N. =48), Chest Hospital (N. =17), Tropical Hospital (N. =47), Optic Hospital (No. =10), Women and Children Hospital (N. =20).

Data Collection Tools:

A self-Administered questionnaire prepared by the researcher after reviewed by five experts from teaching staff of the Nursing Administration in Assiut University. Data collected by using two tools. First tool divided into two parts:

Part (I): Personal & job characteristics for nurse managers, gender, age, unit, and years of experience in the nursing management, current position, and educational qualifications.

Part (II): Future Foresight questionnaire: It prepared by the researcher based on studies of (Duin & Patrick, 2019), (Kyzym, 2020), (Kenton, 2022) & (Patrick, 2022) used to assess nurse managers' perception about the future foresight, composed of (74 items) classified into nine factors: The concepts of future foresight contain (28 items), environmental

scanning contain (6 items), future wheel contain (3 items), Delphi method contain (6 items), road mapping contain (6 items), impact probability matrix contain (6 items), scenario planning contain (7 items), diamond strategy contain (6 items), stakeholder analysis contain (6 items), and the tool questions used a three point likert scale ranging from (2) for agree, (1) for uncertain and (0) for disagree. **Scoring system**, The score of the nurse managers perception of future foresight tools ranged from 0 to 100% and was divided into three levels , low for less than 60% , and moderate ranged from 60% to 80% , and high for up to 80% .

Tool (II): Innovation skills questionnaire: It prepared by the researcher based on studies of (Snow, 2019), (Nieminen, 2021) & (Nazmi, 2022) to assess the perception of nurse managers' about innovation skills which composed of (40 items) classified into four factors: domination contain (9 items), influence contain (5 items), support contain (11 items), commitment contain (15 items), and the tool questions used a three point likert scale ranging from (2) for agree, (1) for uncertain, and (0) for disagree. **Scoring system** , The score of the nurse managers' perception of innovation skills ranged from 0 to 100% and was divided into three levels, low for less than 60%, and moderate ranged from 60% to 80% , and high for up to 80%.

Administrative design:

An official approval to carry out this study was obtained from the Dean of Faculty of Nursing- Assiut University, Directors of Assiut University Hospitals, Nursing Director of each Hospital for Assiut University Hospitals and Directors & Nursing Directors of each Hospital of Assiut city Hospitals of the Ministry of Health to collect the necessary data.

Ethical considerations:

Research proposal approved from Ethical Committee at the Faculty of Nursing Assiut University in 29/1/2023. There was no risk for study participants during application of the research. Agreement taken from the participants in the present study. Study participants had the right to refuse or to participate and /or withdraw from the study without any rational at any time. Confidentiality and anonymity assured which achieved when the study participants' privacy considered during collection of data. The study followed common ethical principles in research.

3- Operational design:

The study was conducted throughout the following phases:

Preparatory phase:

This phase took about three months from December 2022 to February 2023 to end the proposal of the study. After reviewed of the available literatures

concerning the topic of the study, an Arabic translation of the study tools was done.

Face validity of the study tools (Future Foresight questionnaire & Innovation skills questionnaire) was done to assure accurate comprehension of the study tool. It was done through (a jury expert opinions) composed of five professors from the Nursing Administration Department, faculty of Nursing, Assiut University. **Also, content validity** was checked and analyzed by using confirmatory analysis test to assure (importance, clearness, and accountability of each items of the study tool) and its result was ≥ 1.8 for all items of the study tool (Future Foresight questionnaire & Innovation skills), so all items in the study tool items was confirmed.

Pilot study: A pilot study was collected (10 % from studied subject) (No. = 40) nurse managers, eighteen (18) nurse managers in Assiut city Hospitals of the Ministry of Health and twenty- two (22) nurse managers in Assiut University Hospitals which represent 10% from total study participants to ensure the clarity, accessibility and understandability of the study tools. The data obtained from the pilot study was analyzed and no changes were done for the study tools. The study tools were tested for its reliability by using Cronbach's Alpha Coefficient test, it was ($\alpha = 0.799$) for future foresight questionnaire, and it was ($\alpha = 0.812$) for Innovation skills questionnaire. Thus indicates a high degree of reliability for the study tools.

Field work:

The researcher met with each nurse manager in the study to explain the purpose of the study and to ask for participation. After obtaining oral and written consent, the study tool was handled to the participated nurse managers to be filled through self- administered questionnaire to assess the relation of future foresight tools on innovative skills for nurse managers. Each participant took about thirty minutes to fulfill the questionnaires. The whole duration for data collection took about six months from June to November 2023.

Statistical design:

The data was tested for normality using the Anderson-Darling test and for homogeneity variances prior to further statistical analysis. Categorical variables were described by number and percent (N, %), where continuous variables described by mean and standard deviation (Mean, SD). The researcher used Chi square test, Independent T-test, and Pearson correlation to appear the association between scores, univariate and multivariate linier regression used to determine the relation of future foresight tools on Innovative skills for nurse managers. A two-tailed $p < 0.05$ was considered statistically significant. All analyses were performed with the IBM SPSS 26.0 software.

Results:**Table (1): Distribution of Personal & Job characteristics of studied nurse managers as regard to Assiut city hospitals of the ministry of health and Assiut university hospitals**

Personal & Job characteristics	Assiut city hospitals of the ministry of health (N = 170)		Assiut university hospitals (N = 217)	
	No.	%	No.	%
Occupation				
Head nurse	142	83.5	179	82.5
Nursing director	11	6.5	14	6.5
Nursing supervisor	17	10.0	24	11.1
Age				
20 to less than 30 years	101	59.4	104	47.9
30 to less than 40 years	45	26.5	67	30.9
40 years and more	24	14.1	46	21.2
Gender				
Male	41	24.1	47	21.7
Female	129	75.9	170	78.3
Years of experience levels				
Less than 5 years	78	45.9	91	41.9
5 to less than 15 years	72	42.4	84	38.7
15 to less than 25 years	11	6.5	42	19.4
25 years and more	9	5.3	0	0.0
Education Level				
Bachelor degree in nursing science	116	68.2	125	57.6
Diploma degree in nursing science (postgraduate)	29	17.1	25	11.5
Master degree in nursing science	17	10.0	63	29.0
Doctorate degree in nursing science	8	4.7	4	1.8

Table (2): Relation between nurse managers' perception about future foresight tools and innovation skills and Personal & Job characteristics at Assiut University Hospitals

Personal & Job characteristics	Assiut University Hospitals (n=217)	
	Future Foresight questionnaire	Innovation skills questionnaire
Occupation		
Head nurse	83.95±28.4	52.23±8.08
Nursing director	88.36±29.5	54.0±6.6
Nursing supervisor	85.67±31.07	53.75±8.4
F	0.178	0.635
P. value	0.839	0.531
Gender		
Male	97.53 ± 25.25	55.26 ± 7.89
Female	80.8±28.54	51.75±7.92
T	3.643	2.686
P. value	<0.001**	0.008**
Age		
20 to less than 30 years	82.25±29.99	52.88 ± 8.06
30 to less than 40 years	88.69±28.75	52.66 ± 9.01
40 to less than 50 years	83.13±25.07	51.46 ± 6.31
F	1.089	0.518
P. value	0.338	0.596
Years of experience levels		
Less than 5 years	84.08±29.99	53.97±7.64

From 5 to less than 15 years	85.04±29.25	51.35±8.94
From 15 to less than 25 years	83.95±24.81	51.69±6.42
F	0.031	2.643
P. value	0.969	0.073
Education Level		
Bachelor in nursing science	83.38±28.56	52.21±8.08
Diploma in nursing science (postgraduate)	87.2±28.97	53.4±6.87
Master in nursing science	85.73±28.71	52.71±8.62
Doctorate in nursing science	79.25±38.17	53.25±3.3
F	0.219	0.184
P. value	0.883	0.907

Table (3): Relation between nurse managers' perception about future foresight tools and innovation skills and Personal & Job characteristics at Assiut city Hospitals of the Ministry of Health

Personal & Job characteristics	Assiut city Hospitals of the Ministry of Health (n=170)	
	Future foresight questionnaire	Innovation skills questionnaire
Occupation		
Head nurse	73.0±22.7	45.87±9.16
Nursing director	65.9±22.6	53.09±7.3
Nursing supervisor	70.5±26.09	49.47±9.8
F	0.540	4.059
P. value	0.584	0.019*
Gender		
Male	69.07 ± 20.51	49.44±9.35
Female	73.33 ± 23.7	45.83±9.14
T	-1.032	2.190
P. value	0.303	0.030*
Age		
20 to less than 30 years	71.83±23.31	46.4±9.72
30 to less than 40	69.2±22.66	45.76±8.23
40 to less than 50	80.08±21.32	49.75±9.08
F	1.824	1.589
P. value	0.165	0.207
Years of experience levels		
Less than 5 years	74.04±23.7	47.15±10.16
From 5 to less than 15 years	66.81±21.68	45.51±8.48
From 15 to less than 25 years	78.64±24.06	47±7.38
Less than 25 years	93.44±1.42	51.89±8.98
F	4.616	1.401
P. value	0.004**	0.244
Education Level		
Bachelor in nursing science	74.66±22.69	46.71±8.55
Diploma in nursing science (postgraduate)	66.76±22.13	45.93±11.38
Master in nursing science	69.12±25.12	45±10.27
Doctorate in nursing science	64.88±24.31	53±8.45
F	1.367	1.494
P. value	0.255	0.218

Table (4): Comparison between Assiut city hospitals of the ministry of health and Assiut university hospitals regarding to nurse managers' perception about future foresight factors

Future Foresight factors	Max Score	Assiut university hospitals (N =217)	Assiut city hospitals of the ministry of health (N =170)	T	P. value
		Mean ± SD	Mean ± SD		
1. Concepts of future foresight	56	31.59 ±12.84	30.75 ± 7.69	0.755	0.451
2. Environmental scanning	12	5.81 ± 4.06	6.63 ± 2.34	-2.353	0.019*
3. The future wheel	6	2.87 ± 2.28	3.06 ± 1.69	-0.926	0.355
4. The Delphi method	12	6.17 ± 3.66	6.07 ± 3.1	0.271	0.786
5. Road mapping	12	6.09 ± 3.5	6.11 ± 2.96	-0.072	0.942
6. Impact probability matrix	14	8.89 ± 2.89	5.5 ± 3.93	9.788	<0.001**
7. Scenario planning	14	8.94 ± 3.15	5.2 ± 3.64	10.820	<0.001**
8. Diamond Strategy	12	6.75 ± 3.21	4.37 ± 3.31	7.150	<0.001**
9. Stakeholder analysis	12	7.32 ± 2.96	4.6 ± 3.64	8.096	<0.001**
Total	150	84.42±28.65	72.3±22.98	4.499	<0.001**

Table (5): Relationship between Assiut city hospitals of the ministry of health and Assiut university hospitals regarding to nurse managers' perception level about future foresight

Nurse managers' perception about future foresight	Max Score	Assiut University Hospitals (N =217)		Assiut city Hospitals of the Ministry of Health (N =170)		X2	P. value
		No.	%	No.	%		
Low	<60%	67	30.9	99	58.2	30.38	<0.001**
Moderate	60-80%	137	63.1	68	40.0		
High	>80%	13	6.0	3	1.8		
Mean ± SD (range)	150	84.42 ± 28.65 (31 - 132)		72.3 ± 22.98 (34 - 131)		4.49	<0.001**

Table (6): Comparison between Assiut city hospitals of the ministry of health and Assiut university hospitals regarding to Innovation factors

Innovation factors	Max Score	Assiut university hospitals (N=217)	Assiut city hospitals of the ministry of health (N=170)	T	P. value
		Mean ± SD	Mean ± SD		
1. Domination	18	11.26 ± 3.09	10.56 ± 3.3	2.141	0.033*
2. Influence	10	6.44 ± 1.85	5.85 ± 2.11	2.921	0.004**
3. Support	22	14.54 ± 3.13	12.52 ± 3.71	5.802	<0.001**
4. Commitment	30	20.26 ± 4.53	17.76 ± 4.97	5.172	<0.001**
5. Innovation factors	80	52.51±8.03	46.7±9.3	6.593	<0.001**

Table (7): Comparison between Assiut city hospitals of the ministry of health and Assiut university hospitals regarding to Innovation skills perception level

Innovation skills level	Max Score	Assiut University Hospitals (N=217)		Assiut city Hospitals of the Ministry of Health (N=170)		X2	P.value
		No	%	No	%		
Low	<60%	43	19.8	84	49.4	38.49	<0.001**
Moderate	60-80%	154	71.0	79	46.5		
High	>80%	20	9.2	7	4.1		
Mean ± SD (range)	80	52.51 ± 8.03 (31-72)		46.7 ± 9.3 (25-73)		6.59	<0.001**

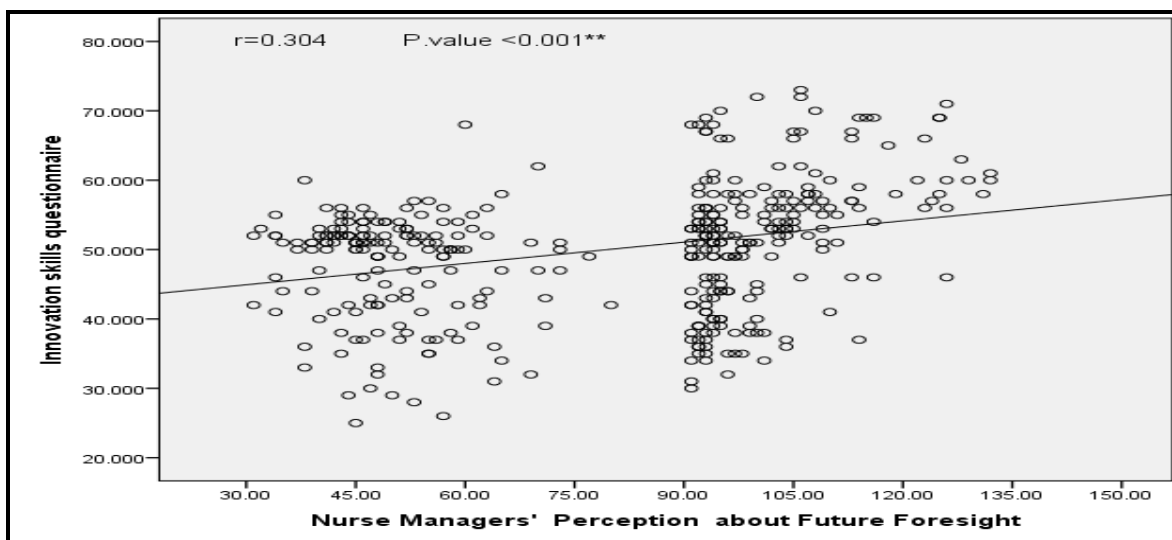


Figure (1): Correlation between nurse managers' perception about future foresight and innovation skills questionnaire

This table (1): Shows that, the majority of studied nurse managers at Assiut city hospitals of the ministry of health are head nurses, aged 20- < 30 years old, Females, having experience less than 5 years (83.5%, 59.4%, 75.9%, 45.9%) respectively. Also, nearly more than half of studied having bachelor degree in nursing sciences (68.2%). And at Assiut university hospitals the majority of studied Nurse Managers are head nurses, aged 20 - < 30 years old, Females, having experience less than 5 years (82.5%, 47.9%, 78.3%, and 41.9%). Also, nearly more than half of studied Nursing Managers having Bachelor degree in nursing sciences (57.6%). Obvious positive significance difference among studied Nurse Managers in years of experience levels, education Level (P.V = 0.000**).

This table (2): Illustrates that, as regard **occupation** the highest mean score of studied nurse managers regarding perception of future foresight and innovation skills is Nursing director (88.36±29.5) & (54.0±6.6), as regard **gender** the highest mean score of studied nurse managers regarding perception of future foresight and innovation skills is Male (97.53 ± 25.25), as regard **Age**, the highest mean score of studied nurse managers regarding perception of future foresight is age group from 30 to less than 40 years (88.69±28.75) and regarding innovation skills is age group from 20 to less than 30 years (52.88 ± 8.06), as regard **years of experience levels**, the highest mean score of studied nurse managers regarding perception of future foresight is group from 5 to less than 15 years (85.04±29.25) and regarding innovation skills is group less than 5 years (53.97±7.64), as regard **educational level**, the highest mean score of studied nurse managers regarding perception of future foresight and innovation skills is group of

postgraduate nurse managers have diploma in nursing science (87.2±28.97) & (53.4±6.87).

This table (3): Illustrates that, as regard **occupation** the highest mean score of studied nurse managers regarding perception of future foresight is Head nurse (73.0±22.7) and regarding innovation skills is nursing director (53.09±7.3), as regard **gender** the highest mean score of studied nurse managers regarding perception of future foresight is Female (73.33 ± 23.7) and regarding innovation skills is male (49.44 ± 9.35), as regard **age**, the highest mean score of studied nurse managers regarding perception of future foresight and innovation skills is age group from 40 to less than 50 years (80.08 ± 21.32) & (49.75 ± 9.08), as regard **years of experience levels**, the highest mean score of studied nurse managers regarding perception of future foresight is group from 15 to less than 25 years (78.64 ± 24.06) and regarding innovation skills is group less than 5 years (47.15 ± 10.16), as regard **educational level**, the highest mean score of studied nurse managers regarding perception of future foresight is group have of bachelor in nursing science (74.66 ± 22.69) and innovation skills is group have doctorate in nursing science (53 ± 8.45) **This table (4): Describes that,** the highest mean score about concepts of future foresight at Assiut university hospitals (31.59 ± 12.84) while at Assiut city hospitals of the ministry of health (30.75 ± 7.69). The studied nurse managers had the highest mean score about perception regarding Future Foresight tools in Assiut university hospitals (84.42 ± 28.65). Obvious positive significance difference in all future foresight tools among studied Nurse Managers (P.V < 0.001**)

This table (5): Demonstrates that, the highest percentage of the studied nurse managers has moderate level of perception regarding Future Foresight tools at Assiut university hospitals (63.1 %). While the highest percentage of the studied nurse managers has low level of perception regarding Future Foresight tools at Assiut city hospitals of the ministry of health (58.2%), Obvious positive significance difference in all future foresight tools among studied nurse managers (P.V <0.001**). Moreover, the highest mean score of nurse managers' perception about future foresight (84.42 ± 28.65 (31 - 132) at Assiut University hospitals.

This table (6): Describes that, the highest mean score about Innovation skills factors in Assiut university hospitals (20.26 ± 4.53) while in Assiut city hospitals of the ministry of health (17.76 ± 4.97). The studied nurse managers had the highest total mean score about perception regarding innovation skills factors in Assiut university hospitals (52.51 ± 8.03). Obvious positive significance difference in all innovation skills factors among studied Nurse Managers (P.V <0.001**)

This table (7): Demonstrates that, the highest percentage of the studied nurse managers has moderate level of perception regarding Innovation skills at Assiut university hospitals (71.0 %) with moderate level. While the highest percentage of the studied nurse managers has low level of perception regarding Innovation skills at Assiut city hospitals of the ministry of health (49.4%), Obvious positive significance difference in all Innovation skills factors among studied Nurse Managers (P.V <0.001**). Moreover, the highest mean score of nurse managers' perception about Innovation skills level (52.51 ± 8.03) at Assiut university hospitals.

This figure (1): Shows that, there is a slight positive relation between perception of the future foresight tools and innovation skills, and highly statistically positive correlation between future foresight and innovation skills that impact on the nurse managers' perception (P.V < 0.001**)

Discussion:

In addition to interpreting data, recognizing and anticipating opportunities and threats, and evaluating available options for decision-making, foresight and innovation are among the important indicators that guide the institution to several matters, the most important of which are surveying the environment, identifying patients and behavior trends, prevailing organization trends, identifying defects, modern technologies, competitors, customer needs, recklessness and lack of clarity (Kyzym, 2020).

The current study aimed to assess perception levels of nurse managers about future foresight tools and

innovation skills. And assess the relation of future foresight tools on innovative skills for nurse managers. Aichouni, (2021) mentioned that, Decisions including long-term education and training, are supported by foresight. In order to identify important strategies to be implemented, important areas of national priority to be targeted, and how to allocate investments in an efficient and effective way, such as in education, research, and innovation, foresight investigations have historically been used as a policy tools at the strategic level.

The results of the current study show in (table 4), that highest group of nurse managers agreed on the concept of future foresight as the ability, skill and art to describe, explain, explore, anticipate and interpret future development, and this results were in same line with research (Reimers, 2018) who indicated that, Futurists use strategic foresight to expand knowledge and to explore many plausible futures. Also validated by additional research Lustig, (2019), who found that nurse managers cannot predict the future and that isn't the aim of future foresight. It is a practice that engages the process of future foresight thinking to develop strategies or plans for the future. Future foresight tools enabling to discover which potential futures are possible, and then to decide which one's would prefer.

This result was in the same line with research done by Davis, (2021) who reported that, future foresight is a structured and systematic way of thinking about the future in order to anticipate and better prepare for change. And this current finding was in same line with Hammoud, (2019) who mentioned that the reason to improving the nurse managers' perception of the organization, Foresight planning can help the organization appear more innovative and forward-thinking than its competition. By positioning the organization as the go-to organization for new ideas, creating an edge that leads to increased institution success.

Organizations need innovation to remain flexible, competitive and adaptive to change. In order to drive innovation and change inside the organizations, nurse managers are faced with the issue of influencing quality, developing innovative models of care delivery, and establishing work environments nurse managers are looking for new ways to innovate , transform, and create workplaces that empower nursing staff to advance new ideas that lead to innovation in their organization (Snow, 2019). Innovation is the key to organizational success in the present complex and competitive organization environment. Numerous factors are continuously affecting the innovative performances of the organizations. Researchers across the globe have identified certain elements, frequently multiple theme

factors that have been demonstrated to have a considerable beneficial impact on innovation outcomes and activities (Nazmi, 2022).

The researcher attempted to find out the most dominating factors of innovations in the organizations through an extensive systematic literature review. The results of current study in table (6) showed that the majority of nurse managers were agreed on the innovation factor (commitment) and **the researcher point of view** illustrated that, the commitment is a high reason to success for any organization and achieve the desired results. This result was in the same line with the findings of Nieminen, (2021) who indicated that, Discipline; this means having a systematic and organized approach to innovating. It also means making sure that everyone in the organization is clear on the need to be innovative and knows what the role is in making it happen. If innovation isn't approached as a discipline, it cannot be easy to achieve consistent outcomes. This can lead to frustration on the part of employees and customers, ultimately damaging the organization's competitiveness. **The researcher point of view as regard to** the level of the Assiut university hospitals is highest because the continuing training and educational program that hold constantly and application the content of the program in the work field that follow under the supervision of all nurse managers.

There is a high positive relation between using the future foresight and innovation skills that found in (figure 1) which showed there was a slight statistically positive correlation between future foresight and innovation skills that impact on the nurse manager's perception. **The researcher point of view focus on** the perception of future foresight tools affect and increase the nurse managers' innovation skills in organizations and in work fields , and the positive relation that approved by results.

Conclusion:

Based on the results of the present study, it can conclude that:

The majority of the studied nurse managers had moderate perception about the future foresight tools and innovation skills were obvious in Assiut University Hospitals than Assiut city Hospitals of the Ministry of Health. And there was a positive correlation between perception of future foresight tools and innovation skills.

Recommendations:

Based on the findings of the present study, the following recommendations were suggested:

- Conduct an educational program for nurse managers in Assiut city hospitals of the ministry of health to

improve their perception of future foresight tools & and how to use them.

- Provide opportunities to nurse managers to attend more workshops about future foresight tools.
- Reinforce the application of tools of future foresight to improve awareness of the nurse managers.
- Develop strategies to promote innovation skills of nurse managers.
- Conduct research to explore the effect of future foresight on the skills of nurse managers.
- Conduct a research about how to use strategies to improve innovation skills for nurse managers.

References:

- Aichouni, M. (2021): Foresight Readiness Assessment for Saudi Organizations, journal of futures studies: Vol. 25(3) 49–64
- Albright, K. (2014): Environmental scanning, information management journal, V. 38, No. (3) , P.P 38:45.
- Davis C. (2021): How foresight enhances strategic planning in times of uncertainty, CIO, <https://www.cio.com/article/189451/how-foresight-enhances-strategic-planning-in-times-of-uncertainty.html>
- Duin, V. & Patrick, A. (2019): Keeping the balance: exploring the link of futures research with innovation and strategy processes. Foresight for dynamic organizations in unstable environments. Routledge, P.P 57:76.
- Grist, A. (2022): Project management Planning Project Probability and Impact Matrix, <https://www.gristprojectmanagement.us/planning-resources/probability-and-impact-matrix.html>
- Hammoud, M. (2019): "What corporations do with foresight." European Journal of Futures Research 2, 42. <https://www.insightandforesight.com.au/blog-foresights/5-benefits-of-foresight>
- Innolytics, A. (2022): Management system software, what is Innovation? Introduction and Definition for Practitioners. <https://innolytics.net/innovation.management-software/>
- Kenton, W. (2022): Investing fundamental analysis, SWOT analysis, <https://www.investopedia.com/terms/s/swot.asp>
- Kulshrestha, S. & Puri, P. (2017): Tows analysis for strategic choice of business opportunity and sustainable growth of small businesses. Pacific Business Review International, P.P 144:152
- Kyzym, M. (2020): Research Organization On The Basis Of The World Foresights Analysis: Trends And Scenarios. In 35th IBIMA Conference P.P 1:2
- Lustig, P. (2019): Strategic foresight: Learning from the Future, chapter (2), P: 18.

- **Mohamed, A. (2021):** Technology foresight methods for future skills, international journal of scientific & technology research anticipation: An empirical Study, V. 10, No. (1).
- **Nazmi, M. (2022):** Do the organizational proficiencies dominate in innovation and can manage the major factors of innovation?, research gate
https://www.researchgate.net/publication/359932137_Do_the_organizational_proficiencies_dominat_e_in_innovation_and_can_manage_the_major_factors_of_innovation_A_Systematic_Literature_Review_of_Last_5_Decades
- **Nieminen, J. (2021):** The Role of Discipline in Innovation, Viima,
<https://www.viima.com/blog/discipline-in-innovation>
- **Patrick, G. (2022):** Stakeholder engagement, Stakeholder Analysis, <https://www.boreal-is.com/blog/what-is-stakeholder-analysis/>
- **Rami, A. & David, L. (2022):** Scenario Planning: Strategy, Steps and Practical Examples
<https://www.netsuite.com/portal/resource/articles/financialmanagement/scenario-planning.shtml>
- **Reimers, C. (2018):** National library of medicine, Strategic foresight, leadership, and the future of rural healthcare staffing in the United States Volume 31 - Issue 5 , P44:49
- **Robert, P. (2020):** Customizing road mapping, research technology management, foresight and road mapping methodology, road mapping for strategy and innovation, volume (2), P.P 26:37
- **Savkin, A. (2022):** How to adapt strategy for a period of unknown , Scenarios in Strategic Planning: Full Guide with Examples, <https://bscdesigner.com/scenario-planning.htm>
- **Snow, F. (2019):** Creativity and innovation: An essential competency for the nurse leader." Nursing administration quarterly 43.4, P.P 306:312.
- **Suleiman, A. (2018):** Tools for the future foresight (special blog: concerned with the skill of management and strategic planning), <https://albuthi.com/blog/1345>.
- **Twin, A. (2022):** Delphi method, Fundamental Analysis tools, <https://www.investopedia.com/terms/d/delphi-method.asp>
- **Visual Paradigm Online, (2022):** Knowledge What is futures wheel, <https://online.visual-paradigm.com/knowledge/decision-analysis/what-is-futures-wheel/>

This is an open access article under
[Creative Commons by Attribution Non-Commercial \(CC BY-NC 3.0\)](https://creativecommons.org/licenses/by-nc/3.0/)
(<https://creativecommons.org/licenses/by-nc/3.0/>)