

<https://doi.org/10.48047/AFJBS.6.2.2024.2362-2382>



African Journal of Biological Sciences

Journal homepage: <http://www.afjbs.com>



Research Paper

Open Access

Effect of Training Program regarding Authentic Leadership Style for Head Nurses on Creativity and Innovative Work Behavior of Nurses

Rofida Maged Abdel Rahman ⁽¹⁾, Saher Hamdy El Said ⁽²⁾, Magda Atiya Gaber ⁽³⁾

1. Assistant lecturer of Nursing Administration, Faculty of Nursing Zagazig University, Egypt.
2. Professor of Nursing Administration, Faculty of Nursing, Zagazig University, Egypt.
3. Professor of Nursing Administration, Faculty of Nursing, Zagazig University, Egypt.

Corresponding author: Rofida Maged Abdel Rahman

Email: rofidamaged@gmail.com

Article History

Volume 6, Issue 2, Apr-Aug 2024

Received: 15 August 2024

Accepted: 23 August 2024

Published: 23 August 2024

doi: [10.48047/AFJBS.6.2.2024.2362-2382](https://doi.org/10.48047/AFJBS.6.2.2024.2362-2382)

Abstract: **Background:** Authentic leadership has the power to affect nurses' behavior and job outcomes. As leaders, head nurses can utilize authentic leadership style to favorably influence nurses, increasing their creativity and, innovative behaviors. **Aim:** the study aimed to assess the effect of training program regarding authentic leadership style for head nurses on creativity and innovative work behavior of nurses. **Design:** A quasi-experimental research design was utilized in this study. **Setting:** The study was conducted at Zagazig University Hospitals, which include two sectors the Emergency sector and El-Salam sector Subjects: Two types of samples All head nurses (n=110) who working in the above mention setting and was divided randomly into equal groups (experimental and control), and stratified random sample from nurses (n=375) was included. **Data collection tools:** Five tools were used for data collection (1) knowledge questionnaire test, which included head nurses' demographic data and head nurses' knowledge test regarding authentic leadership (2) Authentic leadership attitude questionnaire. (3) Observational check list (4) Creativity test consist of two parts: Personal data of nurses and creativity test (5) Innovative work behavior scale. **Results:** There was a statistically significant difference in total knowledge, attitude and skills pre, post and follow up applying authentic leadership training program. There was statistically significant correlation between nurses' creativity and innovative work behavior throughout program phases. **Conclusion:** The training program for head nurses was effective and improved their level of knowledge, attitude and skills also there was statistically significant correlation between nurses' creativity and innovative work behavior throughout program phases. **Recommendation:** An authentic leadership educational program is recommended to be recognized and implemented for all head nurses who in a management position in the nursing field in other hospitals Hospital and nursing administrators should do their best for keeping and enhancing nurses' creativity and innovative work behavior

Keywords: *Authentic Leadership style, Head nurses, Creativity, Innovative work behavior, Nurses.*

I. Introduction

Leadership occurs at all levels within an organization. It is the process of supporting others to improve client care and services by promoting professional practice. Effective leadership is demonstrated by staff participation in decision making, the philosophy of the organization, and by the style of individual leaders within the organization (**Adro & Leitao,2020 &Malik, et al.,2016**).

Authentic leadership style is an approach to leadership that emphasizes building the leader's legitimacy through honest relationships with followers which value their input and are built on an ethical foundation. It is a system of leader actions dominated by first-order factors to enhance the well-being of followers. It starts with the head nurses' awareness that allows them to build positive relationships, inspire and encourage staff in the right ways (**Richard, et al.,2017**).

The authentic leadership style includes four dimensions which are self- awareness, balanced processing, relational transparency, and an internalized moral perspective. Self-awareness is the ability to recognize and acknowledge head nurse strengths and weaknesses to possess self-awareness, a head nurse must develop an understanding of what drives and excites them to action. Balanced processing is the capacity of head nurse to openly discuss and evaluate information and consider others' opinions before choosing a course of actions. Relational transparency is being open and honest in sharing of information about one's thoughts and feelings without hidden agendas. Also, head nurses express and exhibit true self to subordinates in expressing of their genuine beliefs and feelings. An internalized moral perspective referred to the core beliefs of the leader and how those beliefs match actions. The moral perspective promoted doing what is right for others even at the leader's expense (**Benevene et al.,2018&Onyalla, 2018**).

Authentic leadership style can affect creativity and innovative work behavior of nurses. The leaders are the ones that make a work environment that encourages creativity. Through honest and transparent relations with co-workers, internal characteristics of authentic leaders that are supposed to stimulate employees' creativity and innovativeness can be perceived by others. Authentic leaders create trusting relationships with their staff and help nurses to become more satisfied with their jobs and committed to their organizations (**Baek et al., 2019**).

Creativity at work refers to the development of novel products, services and generating new ideas, processes and procedures by employees or a small group of employees to be successfully implemented within the firm to develop innovation. In most organizations, a suitable system is required to allow employees to express their creativity. Thus, organizational support plays a major role in enhancing the creativity of employees where they will be motivated to upgrade the organization's performance and productivity (**Maric,2017&Ibrahim and Shahbudin,2017**).

Innovative work behavior refers to an individual's capability to cause original and potentially useful ideas to be generated, including the process of applying those new ideas into practice (**Harlianto & Rudi, (2018)**). According to **Riaz et al., (2018)**, the basic innovative quality of individuals is thinking and figuring out problems in study process, generating new ideas with creativity, and then seeking for support and validation, finally applying them into practice.

Creativity and innovative work behavior play critical roles in helping professional nurses deliver and maintain high-quality care for patients. Creativity is regarded as the process of developing something new and valuable, and encouraging creativity and creative problem solving. Innovation is critical to the survival and continued success of hospitals. In the health sector, healthcare practitioners' innovative work behavior can occur in a gradual adjustment of current healthcare procedures, services or as entirely new practical alternatives. In order to engage in creative behavior, nurses need understanding the role of innovation. **(Hsing-Yuan et.al., 2020& Ahmed et al., 2019).**

In today's dynamic work environment creativity and innovative work behavior are valuable sources for gaining competitive advantage. With ever-advancing technology, intense domestic and global competitive pressures, uncertain and highly turbulent economic environment, organizations need to overcome innovative competitors and promote creativity in order to survive and prosper. Beside this, organizations need to find innovative approaches to addressing their own needs. One key contextual factor that influences employee creativity and innovative work behavior is leadership. However, increasing globalization, fierce competition and pace of technological change hinder leaders' efforts in establishing the necessary work environment for the creativity of employees. Leaders play a critical role in enabling and supporting the awakening and fostering of creativity and innovative work behavior. Employee creativity can be supported by leaders via making creativity a job requirement, giving feedback on creative goal progress, and rewarding employees when they achieve creative outcomes **(Adro & Leitao,2020 Masood & Afsar, 2018).**

Significance of the study

Authentic leaders promote creativity within the organization and ensure firm innovative work behavior and if organizations select leaders with authentic features, will increase followers' creativity and organizational innovativeness **(Hsing-Yuan et.al.,2020).**

There are few international studies have focused on examination of the relation between creativity and innovative work behavior **(Jokari, 2012, Maric, 2017& Rego et al., 2019).**, but in Egypt there have been no studies implement training program regarding authentic leadership style for head nurses and measure its effect on staff nurses' creativity and innovative work behavior.

Through the researcher contacts with staff nurses in Zagazig University Hospitals during practical training of fourth year nursing students found that nurses don't use creativity and innovative work behavior to solve some existing problems at work, and shared the bad feeling among nurses about their leader. Moreover, responding to research plan 2030 (national, university, and faculty) all of these creativity and innovation studies. Therefore, it is very important to implement training program regarding authentic leadership style for head nurses to equip them with knowledge and skills about authentic leadership and how to use authentic leadership to increase creativity

AIM OF THE STUDY

The study was aimed to assess the effect of training program regarding authentic leadership style for head nurses on creativity of nurses. through:

1. Assess head nurses' knowledge regarding authentic leadership style pre-, post-program implementation and follow up periods.

2. Measure head nurses' skills regarding authentic leadership style pre-and post-program implementation.
3. Assess head nurses' attitude regarding authentic leadership style pre-and post-program implementation
4. Identify creativity level among nurses before, after implementation of the program and follow up periods
5. Determine innovative work behavior level among nurses before, after implementation of the program and follow up periods.

Research hypothesis:

1.Head nurses' knowledge , skills and attitude regarding authentic leadership style will be improved after implementation of training program.

2.The creativity level and innovative work behavior of nurses will be improved after implementation of training program.

SUBJECTS AND METHODS

Research Design:

Quasi –experimental design was conducted to the study.

Setting

Zagazig University Hospitals, which include two, sectors the Emergency sector and El-Salam sector, Egypt.

Subjects:

Two types of samples All head nurses (**n=110**) who working in the above mention setting and was divided randomly into equal groups (experimental and control), and stratified random sample from nurses (**n=375**) was included.

Tools of Data Collection:

Tool (I) Authentic leadership knowledge Questionnaire test: This tool was developed by the researcher based on literature review (*Bamford, Wong &Laschinger, 2013, Hinojosa et al, 2014,Semedoetal.,2017,Baqueroetal, 2019.*): To assess knowledge of head nurses regarding authentic leadership, it was consist of two parts:

- **Part one:** Socio-demographic characteristics of head nurses such as age, gender, and previous training regarding authentic leadership.
- **Part two:** To assess head nurses knowledge regarding authentic leadership. It composed of (**50**) in the form of true and false and multiple choice questions .

Tool (II) Authentic leadership Attitude Questionnaire: Walumbwa et al., (2008) to measure head nurses' attitude regarding authentic leadership style by assessing four components of the process: self-awareness, internalized moral perspective, balanced processing, and relational transparency This instrument was scored through 5- points Likert scale

Total scores of an attitude of studied head nurses regarding authentic leadership classified as follow;

Highly positive > 75%

Positive = 60-75%

Negative < 60%

Tool (III)- Authentic leadership skills observational checklist: developed by researcher based on review of current related literature (**Semedo et al., 2017 and Baquero et al., 2019**), to assess head nurses to acquire skills as; (problem solving skills, effective communication skills, active listening skills, motivation skills, negotiation and personal skills). It consisted of 97 items **Scoring system:** Head nurses skills' responses were measured on two scales ranging from "0 = not done to "1 = done". It was used to measure head nurses' authentic leadership skills during their actual work time by the researcher .Every head nurse was observed in three different time .Using intermittent observations (55 head nurses x3intermittent observation) with total 165 observations.

- If the score was less than 50% considered low.
- If the score was range from 50% to 75% considered moderate.
- If the score was more than 75% considered high.

Tool (IV);Creativity test It was developed by researcher based on related literature **Guilford's (1967) & Emerson (1988)**,and **Ya-lieku et.al (2002)** to assess nurses' creativity level , It consisted of two parts: **Part one:** personal data sheet e.g., age, gender, marital status, educational qualification, years of experience.

Tool V: Innovative work behavior scale;This scale was adapted from (**Mahgoub, Shazly & El-sayed, 2019**) and used to determine level of staff nurses' innovation behavior. This variable was measured by (22) questions under 7 main dimensions that are: idea generation (3 questions), idea search (3 questions), idea communication (4 questions), implementation starting activities (3 questions), involving others (3 questions), overcoming obstacles (3 questions), and innovation outputs (3 questions). Every item was assessed on a five-point likert scale where (1) reflect strongly disagree to (5) rate that mean strongly agree. The total score calculated by cut off points and summing scores of all categories. The total score of the innovation scale was ranged from (22 – 110), that represent the sum of all staff nurses' responses on this scale. Staff nurses' response that considered "low innovation level" its scores graded from (22-50) points. While "moderate innovation level" response figured out by scores ranged from (51- 80). On the other hand, "high innovation level" response represented by scores from (81-110).

Part two: Creativity test it consisted of 6 tests open ended questions as creativity is a process of grazing through data, searching broadly for information which, when applied to a given situation, results in a variety

of potentially right alternatives, some of which are characterized by their uniqueness, rarity or originality. The CT provided only cue words or ideas which stimulated the respondents' divergent responses. The subjects' responses were submitted to content analysis and a scoring system was devised. **The score of each test summed up and converted into percentage score. level of creativity is considered**

Non creative <40%

Low creative = 40%-60%

Moderate creative = 60%-75%

High creative >75%

Validity and Reliability of the tools

The tools of data collection were tested for their content and face validity sheet by a jury of five experts specialized in nursing administration from two different universities (2) professors of nursing administration of Zagazig university and (3) professors of nursing administration of Zagazig university). The reliability of tools was tested authentic leadership knowledge (**0.983**), attitude (**0.866**) and skills (**0.910**). Creativity test(**0.918**) 0.856 for Innovative work Behavior scale

Pilot Study

A pilot study was carried out with 10% of the study sample included 40 nurses and 14 head nurses (10% of the study sample) selected from the study setting to test the tools clarity, understanding, applicability and to estimate the consumed for filling in the forms. It was excluded from the main study sample.

The study was carried through the following stages: Assessment and planning, implementation, and evaluation phase. **The assessment and planning phase:** Official approval from the authoritative hospital personnel and ethical approval was got from the Research Ethics Committee of Faculty of Nursing Zagaze University to conduct the study was got before starting the study. Verbal consent of participants was obtained and voluntary participated in the research A pilot study was conducted on (10%) of the participants (14) head nurses and (40) nurses from different departments in specialized medical hospitals, that randomly selected the study sample, and excluded from the total sample. Based on the pilot study, a necessary modification was made. Assess the staff nurses' perception of motivation and creativity before starting the head nurses' program. The time required to answer this sheet was 25- 35 min, data obtained in one month from the beginning to the end of January 2023. **The implementing phase (implement authentic leadership style training program):**

1- The actual fieldwork was executed in 2 months from the beginning of October 2023 to the end of November 2024. The researcher apply the training program for study group. The researcher met the nursing Directors and the hospital managers to explain the aim of the study to gain their approval on data collection. The researcher collected data from selected hospitals (2days /week) for (4.5hours/day) by herself through meeting the subjects and explaining the purpose of the study to them in the study settings.

2- Authentic leadership style knowledge,attitude questionnaire sheets were distributed and completed by head nurses in study group, researcher observe head nurses' authentic leadership skills with observational check list during their actual work time .Every head nurse was observed in three different time .Using intermittent observations (55 head nurses x3intermittent observation) with total 165 observations and the time needed by

head nurses to complete the questionnaire ranged between (10-15min) for the knowledge, (20-25) for attitude and (15-20) for observational check list skill. Besides, Creativity test was distributed and completed by nurses and took about 10–15 minutes. as (pre-test) before the beginning of the program, and post- program as well as after three months of the program

3-The training program was developed based on the results of the assessment and planning after the review of related literature as well as the teaching sessions and time schedules were developed. The program consisted of two main parts, **the first theoretical part** covers knowledge about authentic leadership such as; definitions of authentic leadership, , Components of authentic leadership, Principles of Authenticity, importance of authentic leadership in the organization Challenges to authentic leadership, Concepts and of authentic leadership and its importance, Qualities necessary for authentic leaders as (thinking out of the box, emotional intelligence at work, , coaching and using feedback powerfully, empowering individuals and teams, and creating secure connections with others) **The second part** is practical in the form of activities for head nurses in study group to acquire skills as; (problem solving skills, effective communication skills, active listening skills, motivation skills, negotiation and personal skills that handle

The researcher implemented training program sessions with head nurses in study group using various teaching methods such as (lectures, Group Discussion, and Brain Storming), using media as audio visual materials such as (Power Point, Flip Chart, and White Board), and using educational activities. Using tablet device to show presentations and handout booklets were distributed to all participated head nurses. The researcher used the evaluation methods during educational program sessions as participation during session, discussion during sessions and feedback after session.

Evaluation phase: Head nurse's knowledge and attitude and head nurses' observational check list about authentic leadership style distributed again at the end and after three months of the program to comparison with the pre-test. Also, evaluating of the aim, mediate and after three months of the program effect of an authentic leadership training program on staff nurse's creativity and innovative work behavior

Administrative Design

An official letters were issued from the Faculty of Nursing, Zagazig University to gain permission from the hospital administration and the nursing director.

Statistical Design

Data entry and quantitative data analysis were done by the SPSS, Version 20. Data were presented as mean and standard deviation (SD). A chi-square (χ^2) statistical value used to measure how a modal compares to actual observed data. The one- way ANOVA analysis (F-test) was used to determine whether statistically significant differences between two or more independent groups. Pearson correlation coefficient was used to determine significant correlations between the variables. The significance level was set at $P < 0.05$.

RESULTS

Table (1) Table (1) shows that the majority of head nurses in the study and control groups were in the age group 30 to less than 40 years old. (43.6% & 45.5% respectively). The highest percentages of head nurses in the study and control groups were females, had experience from 11 to 20 years of experience., married, had

bachelors, and work in Pediatric Hospital , Emergency Hospital and New-Surgical Hospital (96.4%,92.7, 49.1%, 37.0%; 80.0%, 81.8%;87.3,85.5,14.5%, ,16.4%,&16.4%, respectively).

Figure (1) illustrates that the highest percentage of head nurses had unsatisfactory knowledge level regarding authentic leadership style before program implementation in both study and control groups (81.8%, 82%, respectively). Conversely,afterprogram implementation about two third of head nurses in the study group had satisfactory level of knowledge about authentic leadership style (72.7%) compared to 18.2% of head nurses in control group. Additionally, three months after the program implementation, the most head nurses in the study group had satisfactory level of knowledge about authentic leadership style (67.3%) compared to 20% of head nurses in control group, so the program improved head nurses' knowledge regarding authentic leadership style. Hypothesis one was accepted.

Table (2) clarifies that mean score of head nurses' authentic leadership attitude in the study group increased throughout program phases (28.5091 ± 2.538 , 28.7636 ± 2.5529 , and 48.9273 ± 5.5071), with a highly statistically significant difference in their attitude in both pre-post, and pre-follow up phases of the program at P-value= (0.000& 0.000) respectively. On the other hand, there was a highly statistically significant difference between study and control groups regarding their attitude after three months program implementation in favor of study group, at P-value= (0.000) respectively.

Figure (2) illustrates that the majority of head nurses had negative attitude in both study and control groups before the program implementation (36.4% & 80% respectively). While after the program implementation 38.2% of head nurses in the study group had positive levels of attitude compared to control group. In addition, three months after program implementation half of head nurses in the study group had high positive of attitude compared to control group. Hypothesis one was accepted.

Table (3) demonstrates that there is no significant relationship before and immediately after the program implementation for all variables, while three months after program implementation there is a significant relationship for the dimension (Effective communication skills, Active listening skills and Negotiation) where the p.value (0.027, 0.039 & 0.019 respectively).

Figure (3) shows that the highest percentage of head nurses in the study group had low level regarding skills that used to deal with authentic leadership (98.2%) before implementation of the program and none of them had high levels of skills. While immediately after the program implementation 9.2% of head nurses had high levels of skills and 18.2% of them had moderate levels of skills .Additionally, three months after program implementation, 22.4% of head nurses had high levels of skills. Hypothesis one was accepted.

Table (4) shows that (75.5%) of the studied nurses sample were females, (74.4%) of studied staff nurses sample had aged from 20 to less than 30 years old(43.2%). Moreover, the majority of them (72.5%) were married, as regard to staff nurses' educational qualification, (53.9%) of them had technical institute of nursing. As regard to experience, (43.2%) of staff nurses had experience from 1 to 10 years of experience. Additionally, (20%) of nurses worked in New-Surgical Hospital.

Figure (4) illustrates that 49.9%of nurses had low level of creativity and 33.1% of them were uncreative before implementation of the program and 1.1% of them had high levels of creativity. While immediately after the program implementation 47.9% of staff nurses had moderate levels of creativity .Additionally, three months after program implementation, 35.2% of nurses had moderate levels of creativity. Hypothesis two was accepted

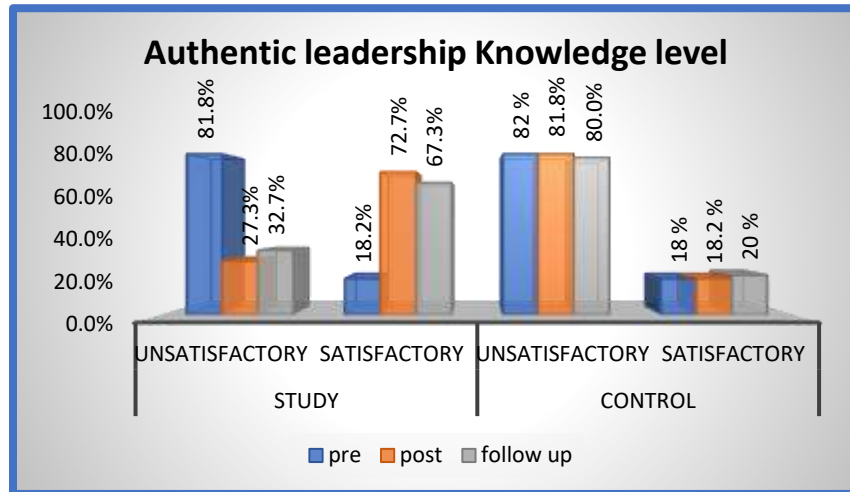
Figure (5) shows that 51.5% of nurses had low level of innovative work behavior before implementation of the program. While post test 50.9% of nurses had low levels of innovative work behavior .Additionally, three months after program implementation, 44.3% of studied nurses had high levels of innovative work behavior. Hypothesis two was accepted.

Table (5) indicates that there was statistically significant correlation between head nurses' knowledge and their attitude score ($r=.302$ at $P\text{-value}=.025$ & $r=.363$ at $P\text{-value}=.007$ respectively) and, there was statistically significant correlation between head nurses' knowledge and their skills score ($r = .032$ at $P\text{-value} = .001$)

Table (1): Frequency distribution of head nurses' personal data (n=80).

Personal characteristics	Study group (n=55)		Control group (n=55)		X ²	p-value
	No	%	No	%		
Age in years						
20 to < 30 year	12	21.8	16	29.1	4.021	0.134
30 to < 40 year	24	43.6	25	45.5		
40 to < 50 year	19	34.5	15	25.5		
Mean	2.22		1.96			
SD ±	±0.786		±0.744			
Gender						
Male	2	3.6	4	7.3	0.705	0.339
Female	53	96.4	51	92.7		
Educational qualification						
Bachelors	48	87.3	47	85.5	0.653	0.721
Master	4	7.3	3	5.5		
Doctorate	3	5.5	5	9.1		
Mean	1.18		1.24			
SD ±	±0.512		±0.607			
Years of experience						
1 year to ≤ 10 years	11	20.0	17	31.5	2.319	0.314
11 year to ≤ 20 years	27	49.1	20	37.0		
> 20 years	17	30.9	17	31.5		
Mean	2.11		2.00			
SD ±	±0.712		±0.801			
Marital Status						
Single	6	10.9	5	9.1	1.769	0.622
Married	44	80.0	45	81.8		
Divorced	1	1.8	3	5.5		
Widow	4	7.3	2	3.6		
Mean	2.05		2.04			
SD ±	±0.650		±0.543			
Hospital affiliation:						
A. Emergency sector:						
Emergency Hospital	5	9.1	9	16.4	6.202	0.625
Internal Medicine Hospital	6	10.9	6	10.9		
Delivery and Premature Hospital	7	12.7	3	5.5		
Outpatient Hospital	7	12.7	5	9.1		
New-Surgical Hospital	6	10.9	9	16.4		

B. El-Salam sector:				
Cardiac and Chest Hospital	7	12.7	7	12.7
El-Salam Hospital	4	7.3	8	14.5
El-Sadat Hospital	5	9.1	3	5.5
Pediatric Hospital	8	14.5	5	9.1
Mean	5.05		4.76	
SD ±	±2.599		±2.575	

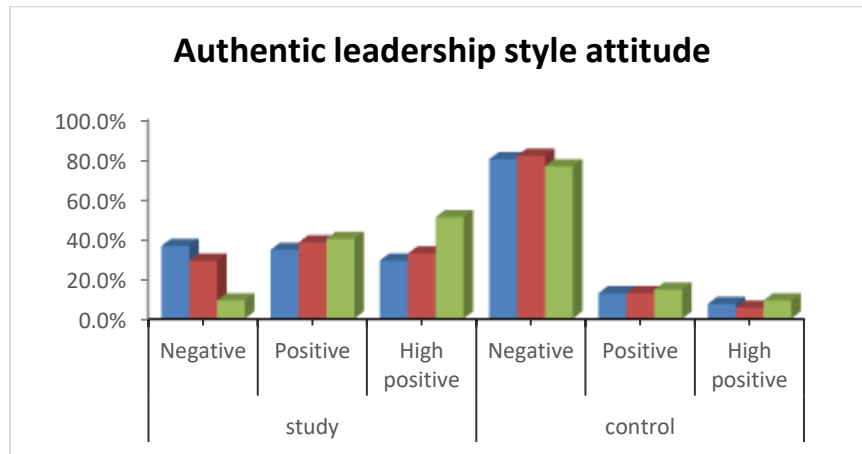


Satisfactory= >60% Unsatisfactory= ≤60%

Figure (1) Knowledge levels of head nurses regarding authentic leadership style throughout the program phases in the study and control groups (n= 110)

Table (2): Head nurses’ mean scores of total authentic leadership attitude during pre, post and follow up program.

Total authentic leadership attitude	Time	Study group (n=55)	Control group (n=55)	P-value
		Mean ± SD	Mean ± SD	
	Pre	28.5091 ± 2.538	24.618 ± 2.5129	0.767
	Post	28.7636 ± 2.5529	24.618 ± 2.5129	0.844
	Follow up	48.9273 ± 5.5071	24.564 ± 2.5442	0.000
P-value	Pre - Post	0.000	1.000	
	Pre - Follow	0.000	0.371	

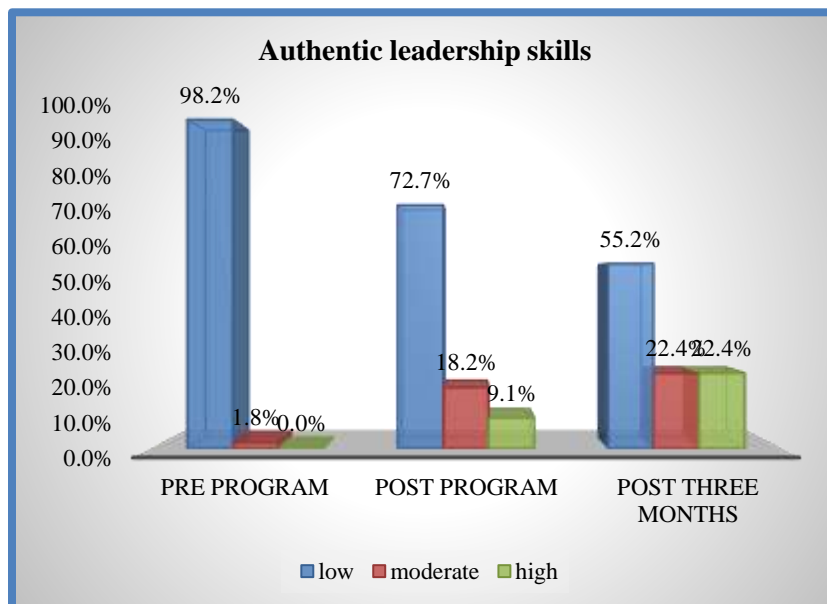


High positive > 75% Positive = 60-75% Negative < 60

Figure (2) Head nurses' attitude levels regarding authentic leadership style throughout the program phases in the study and control groups (n= 110)

Table (3) Mean scores of skills dimensions of head nurses used to deal with authentic leadership throughout the program phases in study group (n=55)

Authentic leadership skills observational check list dimensions	Time	Mean	SD	ANOVA test	p-value
A. Problem solving skills	pre	0.1697	± 0.47658	2.472	0.088
	post	2.2788	± 3.82480	1.247	0.290
	Follow up	4.7515	± 4.90073	1.150	0.319
B. Effective communication skills	pre	0.0485	± 0.24210	1.668	0.192
	post	1.4545	± 2.43314	0.920	0.400
	Follow up	2.2970	± 2.38957	3.705	0.027
C. Active listening skills	pre	2.8727	± 3.09635	1.728	0.181
	post	1.6364	± 2.71421	0.552	0.577
	Follow up	0.0606	± 0.26358	3.319	0.039
D. Motivates others skills	pre	0.0364	± 0.32928	0.500	0.607
	post	0.8182	± 1.34015	0.000	1.000
	Follow up	1.5030	± 1.61783	0.229	0.795
E. Negotiation	pre	2.2667	± 2.59016	0.562	0.571
	post	1.6364	± 2.71421	0.552	0.577
	Follow up	0.0606	± 0.23933	4.061	0.019
F. Personal skills	pre	0.0788	± 0.29192	2.238	0.110
	post	5.8182	± 9.57147	1.247	0.290
	Follow up	10.5218	± 11.02853	2.108	0.125
Total authentic leadership skills observational check list	pre	5.4727	5.52551	0.864	0.423
	post	13.6424	22.44667	0.226	0.789
	Follow up	19.1945	19.48761	0.988	0.375



High > 75% Moderate = 50-75% Low <50%

Figure (3) Levels of authentic leadership skills of head nurses throughout the program phases in study group (n=55)

Table (4): Frequency distribution of nurses' personal data (n=375)

Personal data of staff nurses	Staff nurses (n=375)	
	No	%
Age in years		
20 to < 30 year	176	46.9
30 to < 40 year	108	28.8
40 to < 50 year	76	20.3
50 to < 60 year	15	4.0
Mean	1.81	
SD ±	± 0.894	
Gender		
Male	96	25.6
Female	279	74.4
Educational qualification		
Diploma	107	28.5
Technical institute	202	53.9
Bachelors	66	17.6
Mean	1.89	
SD ±	± 0.671	
Years of experience		
1 year to ≤ 10 year	162	43.2
11 year to ≤ 20 year	130	34.7
> 20 year	83	22.1
Mean	1.79	
SD ±	± 0.781	
Marital status		

Single	74	19.7
Married	272	72.5
Divorced	20	5.3
Widow	9	2.4
Mean	1.90	
SD ±	± 0.582	
Hospital affiliation:		
A. Emergency sector:		
• Emergency Hospital	47	12.5
• Internal Medicine Hospital	71	18.9
• Delivery and Premature Hospital	27	7.2
• Outpatient Hospital	26	6.9
• New-Surgical Hospital	75	20.0
B. El-Salam sector:		
• Cardiac and Chest Hospital	48	12.8
• El-Salam Hospital	40	10.7
• El-Sadat Hospital	6	1.6
• Pediatric Hospital	35	9.3
Mean	4.48	
SD ±	± 2.450	

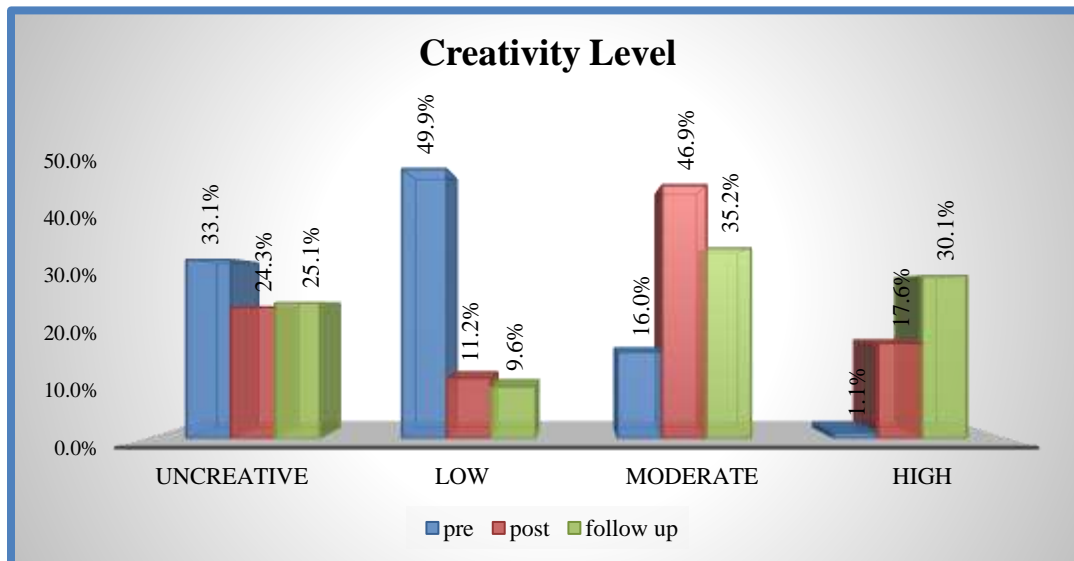
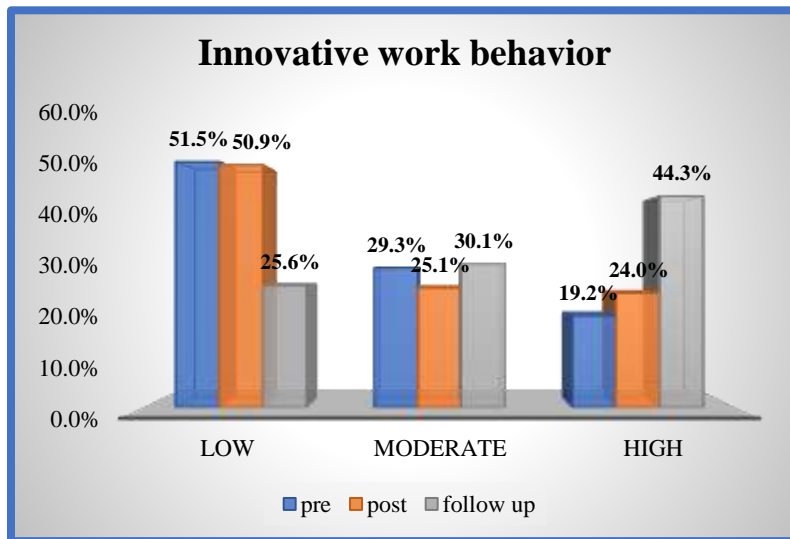


Figure (4) Creativity level among nurses during pre, post and follow up program (n= 375)



High > 75% Moderate = 50-75% Low < 50%

Figure (5) Innovative work behavior levels among nurses during pre, post and follow up program (n=375)

Table (5): Correlation between total nurses' creativity and total nurses' innovative work behavior throughout program phases in the study group (n=375)

Variables	Creativity (pre)		Creativity (post)		Creativity (follow up)		Innovative work behavior (pre)		Innovative work behavior (post)		Innovative work behavior (follow up)	
	r	P value	r	P value	r	P value	r	P value	r	P value	r	P value
Creativity (pre)	1	-	.877**	.000	.808**	.000	.583**	.000	.550**	.000	.575**	.000
Creativity (post)	.877**	.000	1	-	.727**	.000	.532**	.000	.506**	.000	.519**	.000
Creativity (follow up)	.808**	.000	.727**	.000	1	-	.433	.000	.407**	.000	.425**	.000

Innovative work behavior (pre)	.583**	.000	.532**	.000	.433**	.000	1	-	.983**	.000	.990**	.000
Innovative work behavior (post)	.550**	.000	.506**	.000	.407**	.000	.983**	.000	1	-	.980**	.000
Innovative work behavior (follow up)	.583**	.000	.532**	.000	.433**	.000	.990**	.000	.980**	.000	1	-

Table (6) Correlation between total head nurses' knowledge, attitude and skills regarding authentic leadership style throughout the program phases in the study group (n=55)

Variables		Total Knowledge (Pre)	Total Knowledge (Post)	Total Knowledge (Follow up)	Total attitude (Pre)	Total attitude (Post)	Total attitude (Follow up)	Total skills (Pre)	Total skills (Post)	Total skills (Follow up)
Total Knowledge (Pre)	R	1	.176	-.100	-.203	-.134	.195	-.084	-.032	-.054
	P-Value	-----	.199	.467	.137	.328	.153	.541	.818	.696
Total Knowledge (Post)	R	-.176	1	.969**	.191	.302*	-.406**	-.072	-.115	-.295*
	P-Value	.199	-----	.000	.163	.025	.002	.602	.402	.029
Total Knowledge (Follow up)	R	-.100	.969**	1	.113	.252	.363**	-.083	-.121	-.289*
	P-Value	.467	.000	-----	.410	.063	.007	.549	.378	.032
Authentic leadership attitude (Pre)	R	-.203	.191	.113	1	.812**	-.011	.186	-.131	-.019
	P-Value	.137	.163	.410	-----	.000	.936	.174	.339	.888
Total attitude (Post)	R	-.134	.302*	.252	.812*	1	.282*	.163	-.119	-.076
	P-Value	.328	.025	.063	.000	-----	.037	.236	.385	.582
Total attitude (Follow up)	R	.195	-.406**	.363**	-.011	.282*	1	.013	.003	.066
	P-Value	.153	.002	.007	.936	.037	-----	.924	.983	.634
Total skills (Pre)	R	-.084	-.072	-.083	.186	.163	.013	1	.643**	.926**
	P-Value	.541	.602	.549	.174	.236	.924	-----	.000	.000
Total skills (Post)	R	-.032	-.115	-.121	-.131	-.119	.003	.643**	1	.702**
	P-Value	.818	.402	.378	.339	.385	.983	.000	-----	.000
Total skills (Follow up)	R	-.054	-.295*	-.289*	-.019	-.076	.066	.926**	.702**	1
	P-Value	.696	.029	.032	.888	.582	.634	.000	.000	-----

Discussion

Authentic leadership is currently becoming a crucial shared social practice among head nurses and across teams to achieve long-term innovative performance, improved work environments for nurses, and enhanced quality of care. Because authentic leadership is a new perspective that focuses on a leader's values and beliefs, it is critical for head nurses to incorporate authentic leadership into clinical nursing practice to foster a culture of trust and loyalty that encourages creative thinking and empowers staff nurses to promote creativity and innovation with the proper feedback making them more unique (Tijani & Okunbanjo, 2020).

The findings of the present study revealed that the highest percentage of head nurses had unsatisfactory knowledge level regarding authentic leadership before implementation of the program in both study and control groups. After the program implementation about two third of head nurses in the study group had satisfactory level of knowledge compared to head nurses in control group. Additionally, three months after the program implementation, the most head nurses in the study group had satisfactory level of knowledge about authentic leadership compared to head nurses in control group. This may be due to before program implementation, head nurses either in study or control group did not recognize authentic leadership and did not realize how to practice authentic leadership, which requires actual practice.

The enhancement in those head nurses' knowledge level also may be due to their active involvement and interest in the program sessions and frequent review of their knowledge. Other explanation of the improving knowledge in the present study that the researcher introduced examples, videos, simulation and let the head nurses make applications from work situations .

The findings were compatible with **Elmawla et al., (2020)** found that the knowledge of head nurses at two hospitals affiliated to Ministry of Health namely Elmenshawhy General Hospital and Kafer El sheikh General Hospital was below the acceptable level before implementing the program and also, reported that Preprogram no one had a good level of total knowledge, changed to be all and 98.6% of head nurses got good level respectively. Immediate and three months post-program. On the same line, **Rashed& Ali El-Said, (2020)** mentioned that the total knowledge score and levels of authentic leadership style among head nurses were low before the program implementation; after the program implementation, they had higher scores with statistically significant differences

Similarly , these results are congruent with **Nagib et al 2020.**, found that there was a highly statistically significant gain in level knowledge among head nurses about authentic leadership style at the pretest and different times of measures after the program implementation (immediately after, after three months of the program implementation). Head nurses were a low level of knowledge preprogram and significantly knowledge level improved to high immediately post and after the three months of the program implementation.

The findings of the present study revealed that illustrates that the majority of head nurses had negative attitude in both study and control groups before the program implementation. While after the program implementation more than third of head nurses in the study group had positive levels of attitude compared to control group. In addition, three months after program implementation half of head nurses in the study group had high positive of attitude compared to control group

This may be attributed to the head nurse's negative attitude of authentic leadership before the program may be due to the fact that the head nurses have been performing their task without any strategies of authentic leadership all this leads to dissatisfaction with leadership behavior. Meanwhile, an improvement that happens for the greatest of head. nurses in authentic leadership behavior after the program can be related to that the most of head nurses have applied several authentic leadership strategies including (self-awareness, balanced processing, relational transparency, and an internalized moral perspective). They had understanding of basic authentic leadership role and demonstrated genuine and honest desire to serve self and others more effectively. As well **Elkholy,El Dahshan & Abd El Mageed (2020)**, The result of this study declared that the majority of nurses considered their leaders to be practicing moderate to high authentic leadership. This result was similar to **Wong et al., (2020)** and found that more than half of studied nurses perceived moderate authentic leadership. Also, this result was supported by **Teo et al., (2023)** whose stated that nurses reported their immediate supervisor's leadership behavior to be moderately authentic.

On the other hand, these findings were contradicted with a study conducted by **Qureshi & Aleemi, (2018)** entitled "Authentic Leadership and Turnover Intention: Mediating role of Work Engagement and Job Satisfaction in the Healthcare Sector of Pakistan" and discussion declared that the highest percentage of the studied participants perceived low authentic leadership

Moreover, a study performed by **Baek et al., (2019)** in Korea and reported that most of the studied nurses rated their unit managers as high positive attitude authentic leadership. Contradicting to previous results **Alilyyani, (2022)** in Saudi Arabia, who noticed that mean score of self awareness dimension of authentic leadership was the highest followed by internalized moral perspective domain.

The finding of the present study revealed that there is no significant relationship before and immediately after the program implementation for all variables, while three months after program implementation there is a significant relationship for the dimension (Effective communication skills, Active listening skills and Negotiation) From the researcher point of view, This might be due to shaping leadership skills is a complex process, and head nurses want a long time to acquire 'authentic leadership skills and apply these skills in the field , the content of program was valuable, the program helped the head nurses to, teaching methods used in program were helpful and effective, program provided them with knowledge and skills to authentic leadership, and improve their skills.

This finding agreed with **Thrall, (2009)** who mentioned that the nurse managers especially head nurses; are often served to managerial positions without adequate preparation and their continuing education agenda lacks studies of comprehensive managerial knowledge and skills. This contributed to the unsatisfactory levels of their knowledge and skills. In harmony with **Penger, & Černe, (2014)**; They stated that a great level of intrinsic motivation of authentic leader has a meaningful definite impact on their members whose behavior is affected by their leader.

This finding was in agreement with this finding agreed with **Baron, (2012)**, who carried out a study in Canada to measure the efficacy of experiential training programs to foster development of authentic leadership and developing skills. Increase in authentic leadership persisted from year to year during the development program was and conducted for self-assessed authentic leadership at the beginning of the first year of training compared to that at the beginning of the second and third years, as well as, suggests that the characteristics of the personal skills required for leadership make it difficult to teach in a traditional training environment. Improving interpersonal skills, such as relationship development, further empowers the master's prepared nurse to lead effectively

. Also, **Sonal, Sangeeta, and Vivek (2019)** who asserted that attitudes and work performance of staff nurses are affected by behavior of head nurses. Head nurses must develop authentic skills, resilience, conflict management skills and healthy relationships to achieve productive goals. Where, authentic leaders support staff members by engaging them in considering potential obstacles for moving toward the new reality.

Additionally, **Mondini et al. (2020) in Brazil**. Both pointed to communication, planning, and organization as competencies of the leader. Regarding the potentialities, both nurses and nursing technicians revealed to have good communication and transparency. This requires the leader's experience, knowledge and skills, building trust, improving interpersonal relationships and team performance

On the same direction, **Zhang et al. (2021)** came to the conclusion that leaders are effectively managing their responsibilities to increase their performance and productivity based on their negotiating skills.

Also, this finding agreed with **Koliopoulos et al, (2021)** who carried out a study in Thessaloniki, they reported that leaders' communication skills, as they emerge in negotiations, contribute decisively to sustainability of business.

This was supported by **Jaworski et al, (2022)** who reviewed " The Trend of Authentic Leadership Skills in Nursing Education: The Key Role of Perfectionism and Self-Efficacy" This study's results revealed that authentic leaders "...must be skilled communicators, team builders, agents for positive change, committed to service, results-oriented, and role models for collaborative practice

The finding of the present study revealed that near to half of staff nurses had low level of creativity and one third of them were uncreative before implementation of the program. While immediately after the program implementation near to half of nurses had moderate levels of creativity. Additionally, three months after program implementation, more than one third of staff nurses had moderate levels of creativity.

On the same line, **Saleh et al. (2013)** who mentioned that Nurses' leaders were below average and average level of creativity. Meanwhile staff nurses were below average level of creativity. This result consistent with **Abd-Elrhaman & Ghoneimy (2018)** in Egypt and found that there was a highly statistically significant improvement in staff nurses' level of creativity scores regarding creativity in work thorough the program

In agreement with, **Saleh et al (2021)** who reported that the overall creativity score of staff nurses increased significantly in a post and late follow-up compared to in the pre-intervention. This result was in agreement with **Panatik et al., (2016)**, who conducted a study entitled "The Effect of Personal Factors on Creativity among Research Officers in Malaysia" and revealed that the level of creativity was high among research officers in Malaysia post program application. In addition, **Kim and Hyunjae (2015)** who reported that more than two fifth exhibiting a high level of creativity post program, more than one third of them had a medium level of creativity, and more than one fifth had a low level of creativity.

The finding of the present study revealed that half of staff nurses had low level of innovative work behavior before implementation of the program. Additionally, three months after program implementation near to half of studied staff nurses had high levels of innovative work behavior. This could be because leaders respond positively to nurses and allow them to think for themselves, allowing them to be more innovative.

The current findings consistent with, **Tung, Kkadechanunt and Chontawan (2014)** added that to involve nurses in innovative behavior, they need management support, caring work environment, enough resources, also, appropriate knowledge about their role and construct an innovative culture to enhance nurses' responsibility toward innovation to face challenges of healthcare imperative. This agrees with **Khan, Hui and Soomro (2021)** suggested that authentic leadership plays significant role in generating culture of knowledge sharing and innovation.

Also, **Abdallah & Mostafa (2023)** who carried out a study and revealed that more than half of Preprogram more than half of staff nurses had low level of innovation, changed to be two third of staff nurses at immediate and three months post program respectively which they had high level of innovation The findings of the current study were in agreement with **Ahmed et al., (2019)** who revealed that slightly less than half of nurses had a high level of innovative work behaviors. Correspondingly, the previous result goes in agreement with that of a study conducted by **Kamel & Aref, (2017)** who pointed out that half of staff nurses had a highly level of innovative work behaviors.

The finding of the present study revealed that there was statistically significant correlation between head nurses authentic leadership and nurses' creativity throughout program phases .These attributed to those authentic leaders can alter staff nurses' work attitudes and actions through their leader behaviors, which provide their staff nurses caring, resources and organizational support, involving them in any decision and providing needed information.

This finding agreed with **Cerne et al. (2013)** empirically tested the relationship between authentic leadership and creativity from the perspective of both the team leader and their employees, and concluded that team leaders' perceived AL directly influences members' creativity and team innovation. authentic leadership has a positive effect on employee creativity. For example, **Malik et al. (2016)** who found AL positively related to the creativity of employees, mediated by knowledge sharing and information technology. According to **Hughes et al. (2018)**, a leader exerts a crucial influence on individual-level and team-level creativity, because a leader is also a member of a team whose individual characteristics and behaviours influence the team's output the most.

On the same line **Lei et al. (2021)**, who concluded that AL affects team creativity and employee creativity at multiple levels simultaneously

This agrees with **Khan, Hui and Soomro (2021)** suggested that authentic leadership plays significant role in generating culture of knowledge sharing and innovation. As well as **Laguna, et al.. (2019)** found a significant association between authentic leadership and innovation, added that authentic leadership is necessary for

nurses as it promote a positive attitude and innovation performance as well as building their future hopes and help them to find meaningful connection with their work and assist them to do the required task in a novel way. The finding of the present study revealed that there was statistically significant correlation between nurses' creativity and innovative work behavior throughout program phases This finding agreed with **Tri et al,(2019)** who concluded that employee's creativity is positively related to sales employee's innovativeworkbehavior **Also,Andrietal,(2020)**who confirmed the role of innovative behavior as a mediator on the relationship between proactive personalities and creativity.

CONCLUSION

The training program regarding authentic leadership for head nurses was effective and improved their level of knowledge, attitude and skills, also the nurses' creativity level and innovative work behavior increases after the program implementation.

RECOMMENDATIONS

In the light of the main study findings, the following recommendations are proposed:

1. 1-Hospital administrators should create policies and strategies to support career growth and developmental opportunities of entrepreneurial nurses.
2. Creating a supportive environment that fosters nurses' independence and encourages them to take risks that foster their creativity
3. Encourage nurse's enthusiasm and curiosity and innovation
4. Support their innovative behaviors by rethink to solve the problems that facing them in their units in different ways.
5. 4- Reforming hospital's policies to emphasize using authentic leadership coaching behaviors as an effective approach to support head nurses in a variety of positions.
6. Attend workshops on innovative thinking and apply strategies to elevate their levels of sustainable development behavior and innovative work behavior.

References:

- Adro, J.C. & Leitao F.J. (2020): Leadership and organizational innovation in the third sector: A systematic literature review Francisco, International Journal of Innovation Studies (4), pp 51 -67.
- Richard, A. H., Mark T. Green,Y.U., , & Hinojosa, B.B., (2017): Authentic Leadership and Transformational Leadership: Journal Of Leadership Studies, 11, (1), pp (20-22) ,Available at online at wileyonlinelibrary.com
- Malik, M.B., Rajib, L.D., & Subhash, C. H., (2016): Authentic leadership and its impact on creativity of nursing staff: A cross sectional questionnaire survey of Indian nurses and their supervisors Nishtha International Journal of Nursing Studies 63 pp 28–36.
- Benevene, P., De Carlo, A., Carluccio, F., Dal Corso, L., Falco, A., & Vecina, M. L. (2018): Ethical Leadership as Antecedent of Job Satisfaction, Affective Organizational Commitment and Intention to Stay Among Volunteers of Non-Profit Organizations. *Frontiers in Psychology*, today. PP 1-5. Available at 9, 2069. <https://doi.org/10.3389/fpsyg.2018.02069>
- Onyalla, D. (2018): Authentic Leadership and Leadership Ethics: proposing a new perspective. *The Journal of Values-Based Leadership*.; 11 (2) pp 4 -8.
- Maric, A., (2017): Creativity and Innovation: The Leadership Dynamics, *Doktorski studij*, Pp -. available at <https://www.fsb.u.nizg.hr/brodogradnja/UZIR>
- Ibrahim, H., & Shahbudin, A., (2017): Organizational Support and Creativity: The Role of Developmental Experiences as a Moderator, *Procedia Economics and Finance*,6 (1), Pp: 1–15.
- Adro, J.C. & Leitao F.J. (2020): Leadership and organizational innovation in the third sector: A systematic literature review Francisco, International Journal of Innovation Studies (4), pp 51 -67.
- Masood, M., Afsar, B., &Umrani, W.A. (2019). The role of job crafting and knowledge sharing on the effect of transformational leadership on innovative work behavior. *Emerald publishing limited*;48(4): pp.1186- 1208
- Jokari .M, (2012): Study the Effect of Creativity and Innovation on Nurses' Productivity in Taleghani Hospital *interdisciplinary journal of contemporary research in business* vol 4, no 4 1055-1060.
- Rego, P., Lopes, M. P. & Nascimento, J. L. (2019). Authentic Leadership and Organizational Commitment: The Mediating Role of Positive Psychological Capital. *Journal of Industrial Engineering and Management*; 9(1): 129-151.

- Hsing-Yuan, Changb. I, Teng. W, & Shu-Yuan, C (2020): The association between creativity, creative components of personality, and innovation among Taiwanese nursing students Thinking Skills and Creativity, 35 95-100
- Bamford, M., Wong, C. A., &Laschinger, H. (2013). The influence of authentic leadership and areas of worklife on work engagement of registered nurses. *Journal of nursing management*, 21(3),
- Hinojosa, A. S., McCauley, K. D., Randolph-Seng, B., & Gardner, W. L. (2014). Leader and followe. attachment styles: Implications for authentic leader–follower relationships. *The Leadership Quarterly*, 25(3), 595-610.
- Baquero, A., Delgado, B., Escortell, R., &Sapena, J. (2019). Authentic leadership and job satisfaction: A fuzzy-set qualitative comparative analysis (fsQCA). *Sustainability*, 11(8), 2412.
- Walumbwa, F. O., Avolio, B. J., Gardner, W. L., Wernsing, T. S., & Peterson, S. J. (2008). Authentic leadership: Development and validation of a theory-based measure. *Journal of Management*, 34(89), 89-126. doi:10.1177/0149206307308913
- Semedo, A. S., Coelho, A., &Ribeiro, N. (2018). The relationship between authentic leaders and employees' creativity. *International Journal of Workplace Health*
- Baquero, A., Delgado, B., Escortell, R., &Sapena, J. (2019). Authentic leadership and job satisfaction: A fuzzy-set qualitative comparative analysis (fsQCA). *Sustainability*, 11(8),
- Guilford, J. P. (1967). *The nature of human intelligence*. New York: McGraw-Hill.
- Tijani,O & Okunbanjo,O 2020);Authentic Leadership and Organizational Commitment: Empirical Evidence from Information Technology Industry in NigDecember 2020Kelaniya Journal of Management 9(2):55
- Elmawla, A., Bastawesy, S., Shabaan, F. M., & Abo Ramdan, A. H. (2020). Effect of Educational Program about Authentic Leadership and Mindfulness Factors on Head Nurses Practice Self–Evaluation. *Tanta Scientific Nursing Journal*, 18(1), 110-133.
- Rashed, N. M., & Ali El-Said, H. D. (2020). Effect of Educational Program about Head nurses Authentic Leadership Style on Staff Nurses Empowerment and Motivation. *Assiut Scientific Nursing Journal*, 8(23), 62-74
- Yan, D., Wen, F., Li, X. & Zhang, Y. (2020). The relationship between between psychological capital and innovation behavior in Chinese nurses. *Journal of nursing management*, 28(3), 471 -479. <https://doi.org/10.1111/jonm.12926>.
- Nagib, R., Rashed, N., & El-Said, H. (2020). Effect of educational program about head nurses' authentic leadership style on staff nurses empowerment and motivation. *Assiut Scientific Nursing Journal*, 8(23), 62-74.
- Elkholy, S., El Dahshan, M., & Abd El Mageed, H. (2020). Authentic leadership and its relation to structural empowerment and work environment among nurses. *American Journal of Nursing Science*, 9(3), 136-44.
- Wang, J., Mu, K., Gong, Y., & et al., (2023). Occurrence of self-perceived medical errors and its related influencing factors among emergency department nurses. *Journal of Clinical Nursing*, 32(1-2), 106-114.
- Teo, S., Lux, A., & Pick, D. (2023). Authentic Leadership and Psychological Well-Being of Nurses: A Mediated Moderation Model. *Journal of Nursing Management*, 2023, 1-9
- Qureshi, M.A., & Aleemi, A.R. (2018). Authentic Leadership and Turnover Intention: Mediating role of Work Engagement and Job Satisfaction in the Healthcare Sector of Pakistan. *Abasyn University Journal of Social Sciences*, 11(2).
- Baek, H., Han, K., & Ryu, E. (2019). Authentic leadership, job satisfaction and organizational commitment: The moderating effect of nurse tenure. *Journal of Nursing Management*, 27(8), 1655-1663.
- Alilyyani, B., Wong, C. A., & Cummings, G. (2018). Antecedents, mediators, and outcomes of authentic leadership in healthcare: A systematic review. *International Journal of Nursing Studies*, 83, 34-64.
- Thrall, T., (2009): Nurturing your nurse managers. *Hospitals and Health Networks*, 80(4), 71-74.
- Baron, L. (2012). Developing authentic leadership through experiential training: An empirical study. *Academy of Management Annual Meeting Proceedings*. doi:10.5465/AMBPP.2012.2 46
- Sonal, J., Sangeeta, J., & Vivek, S. (2019). Empowering leadership behavior: an empirical study with special reference to selected service sector in India. *Journal of Advances in Management*, 12 (1), 54-8.
- Mondini CCSD, Cunha ICKO, Trettene AS, Fontes CMB, Bachega MI, Cintra FMR.(2020). Authentic leadership among nursing professionals:knowledge and profile. *Rev Bras Enferm.*;73(4):e20180888. doi: <http://dx.doi.org/10.1590/0034-7167-2018-0888>
- Zhang, J., Raza, M., Khalid, R., Parveen, R., & Ramírez-Asís, E. H. (2021). Impact of team knowledge management, problem solving competence, interpersonal conflicts, organizational trust on project performance, a mediating role of psychological capital. *Annals of Operations Research*, 1-21.
- Koliopoulos,A ,Triantari, S ,Stavropoulou, E ,Spinthiropoulos ,K ,AlexandrosG(2021)The Role of Leadership Negotiation Power and the Management of Communication Policies *International Journal of Economics and Business Administration* 9(4):77-97 DOI:10.35808/ijeba/735
- Jaworski M, Panczyk M, Leńczuk-Gruba A, Nowacka A, Gotlib J. 2022 The Trend of Authentic Leadership Skills in Nursing Education: The Key Role of Perfectionism and Self-Efficacy. *Int J Environ Res Public Health*. 10;19(4):1989. doi: 10.3390/ijerph19041989. PMID: 35206180; PMCID: PMC8872341.
- Saleh, M., El-Gilany, A., Abdelhamid, Z., Hamed, S., & Elsabahy, H. (2021). Effect of Authentic Leadership Training Program of Head Nurses on Creativity and Motivation of Nurses Staff. *Egyptian Journal of Health Care*, 12(3), 600-14.
- Saleh, M. , Al-Sayed, N. , Ghallab, S and. Abd Alaa. ,(2013) Nurse leaders' behaviors, and its effect on Nurses creativity at Main Assiut University Hospital. *Journal of American Science*; 9(12)

- Abd-Elrhaman, E, Ghoneim, A(2018); Creativity in Work: An Educational Program for Improving Nurses` Productivity , international journal of innovative research & development DOI No. : 10.24940/ijird/2018/v7/i9/SEP18014, Vol 7 Issue 9
- Panatik, Siti & Katimin, M & Shaari, Roziana & Utm, Johor & Tó, My. (2016). The Effect of Personal Factors on Creativity among Research Officers in Malaysia. 33-48
- Kim, B. H., & Yu, J. (Hyunjae). (2015). Level of Creativity and Attitudes Toward an Advertisement. *Creativity Research Journal*, 27(2), 133–138. <https://doi.org/10.1080/10400419.2015.1030302>
- Cerne, M., Jaklic, M. and Skerlavaj, M. (2013), “Authentic leadership, creativity, and innovation: a multilevel perspective”, *Leadership*, Vol. 9 No. 1, pp. 63-85.
- Malik, N., Dhar, R.L. and Handa, S.C. (2016), “Authentic leadership and its impact on creativity of nursing staff: a cross sectional questionnaire survey of Indian nurses and their supervisors”, *International Journal of Nursing Studies*, Elsevier, Vol. 63, pp. 28-36.
- Hughes, D.J., Lee, A., Tian, A.W., Newman, A. and Legood, A. (2018), “Leadership, creativity, and innovation: a critical review and practical recommendations”, *Leadership Quarterly*, Vol. 29 No. 5, pp. 549-569
- Lei, Shen & Qin, Cuijuan & Ali, Muhammad & Freeman, Susan & Shi-Jie, Zheng. (2021). The impact of authentic leadership on individual and team creativity: a multilevel perspective. *Leadership & Organization Development Journal*. ahead-of-print. 10.1108/LODJ-12-2019-0519.
- Khan, N., Hui, Z., Khan, A., & Soomro, N. (2021). Impact of women authentic leadership on their own mental wellbeing through ego depletion: moderating role of leader's sense of belongingness. *Engineering, Construction and Architectural Management*, 1(1), 143-155.
- Laguna, M., Walachowska, K., Marjan, J. Duijvesteijn, J., & Moriano, J. (2019). Authentic leadership and employees' innovative behavior: a multilevel investigation in three countries. *International Journal of Environmental Research and Public Health*, 16(1), 4201-18.
- Andri, G., Adawiyah, W. R., Purnomo, R., & Sholikhah, Z. (2020). The Minang-Nomads Businesses' Performance: The Role of Proactive Personality, Creativity and Innovative Work Behavior. *Jurnal Pengurusan*, 58, 91-104.
- Tri ,H ,Nga ,V , Sipko,J(2019); Predicting overall Staffs' Creativity and Innovative Work Behavior in BankingVol. 14, No. 2,Summer, pp. 188-202, ISSN 2069-8887| *Management & Marketing. Challenges for the Knowledge Society*
- Mahgoub, S., Shazly, M., & El-sayed, S. (2019). Relationship between work environment and innovative behavior among staff nurses. *Egyptian Journal of Health Care*, 10(3), 64-77.
- Tung, V., Kkadechanunt, T., & Chontawan, R. (2014). Factors related to innovation behavior among nurses in tertiary general hospitals, the central region, the socialist republic of Vietnam. *Nursing Journal*, 41 (2), 117-32.
- Khan, N., Hui, Z., Khan, A., & Soomro, N. (2021). Impact of women authentic leadership on their own mental wellbeing through ego depletion: moderating role of leader's sense of belongingness. *Engineering, Construction and Architectural Management*, 1(1), 143-155.
- Abdallah.S.A& Mostafa .S.A(2023) Effect of Educational Program about Authentic Leadership for Head Nurses on Staff Nurses' Resilience and Innovation Behavior Port Said Scientific Journal of Nursing Vol.10, No. 1
- Kamel, F., & Aref, A. (2017). Staff nurses' perception toward organizational culture and its relation to innovative work behavior at critical care units. *American Journal of Nursing Science*, 6(3), 251-60.
- Ahmed, A. K., Ata, A. A., & Abd-Elhamid, Z. N. (2019). Relationship between the leadership behaviors, organizational climate, and innovative work behavior among nurses. *American Journal of Nursing Research*, 7(5), 870-878.