The Relationship between Head nurses' Authentic Leadership and Nurses' Resilience

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Abstract: **Background: Authentic leadership is crucial to create a healthy work environment as it is the glue needed to hold together positive working behaviors as well as building nurses' resilience. Aim of the study: to investigate the relationship between head nurses' authentic leadership and nurses' resilience at kafr El-Dawar General Hospital. Methods: A descriptive, correlational research design was utilized in all inpatient units (medical and surgical) and Intensive Care Units (ICUs) at Kafr El-Dawar General hospital, EL-Beheira, Egypt for all head nurses and staff nurses. Tools: two tools were used: Tool I: Authentic Nurse Leadership Questionnaire (ANLQ); Tool II: Conner-Davidson Resilience Scale (CD-RISC). Results: Highly statistically significant differences were found between head nurses and staff nurses toward total authentic leadership and all its dimensions and no statistically significant differences were found between head nurses and staff nurses toward total nurses' resilience and all its dimensions. The highest mean±SD for total authentic leadership was relational integrality for head nurses and staff nurses; also, aspects of persistence / tenacity for total nurses' resilience. Conclusion: There were positive statistically significant correlations between total authentic leadership and total nurses' resilience for head nurses; compared to, positive highly statistically significant correlations were found between total authentic leadership and total nurses' resilience for staff nurses. Recommendations: design authentic leadership programs, attend resilience training program, and disseminate organizational resilience policy.**

Keywords: **Authentic leadership, nurses' resilience, head nurses, staff nurses.**

1. INTRODUCTION

Today's health care system is characterized by increasingly complex patient care needs and soaring public demand for quality services. Amidst a backdrop of ongoing transformational change, technological advancements, and spiraling costs, a shortage of health care professionals threatens to shake the foundation of health care. Even more disturbing, the current state of the health care system has resulted in a chaotic workplace environment, placing an increased burden of stress upon a growing shortage of registered nurses. These unique stressors call for positive, better quality and higher authentic leadership effectiveness to address these concerns.[1-3] Walumbwa et al. (2011)[4] defined authentic leadership as: " a pattern of leader behaviors that promotes positive psychological capacities and a positive ethical climate to foster greater self-awareness, develop an internalized moral perspective, enhanced balanced processing of information and improved relational transparency on the part of leaders working with followers, fostering positive self-development ".

Authentic leadership consists of five dimensions including: (1) **self-awareness:** refers to the leader's ability to understand his/her motivations, values, beliefs, ideals, strengths, and weaknesses; (2) **relational integrality:** having the innate ability to connect with others through sharing their own experiences or stories; (3) **shared decision making:** authentic leaders are open to their followers,

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share information openly, make important decisions by first consulting all that could possibly be affected; (4) **moral ethical courage:** refers to behaviors demonstrated by leaders guided by sound moral convictions, values even under pressure; and finally, (5) **caring:** focus on caring about followers in a more cohesive environment.[5-8] Furthermore, Harland et al. (2005)[9] determined that leadership actions have a relationship with subordinate resilience and demonstrated that positive leadership such as authentic leadership should increase resilience levels.

According to Lee et al. (2013)[10] resilience is " the person's skills and capabilities that enable him/her to rebound back and stand in the face of difficult situations". Moreover, American Psychological Association (APA)(2014)[11] defined resilience as: " the process of adapting well in facing adversity, threats or significant sources of stress". In this context, resilience consists of five dimensions, namely: (1) persistence / tenacity, which refers to the quality of not giving up when facing difficulties; (2) self-efficacy is self-evaluation of one's competence to successfully execute a course of action necessary to reach desired outcomes. (3) adaptability and ability to bounce back is the capacity to make appropriate responses to changed or changing situations; (4) emotional and cognitive control refers to nurses' ability to adapt when changes occur and maintaining close and secure relationship even under pressure; and finally, (5) control and meaning is a nurse's belief that, fate or God can help them in solving their problems and most of things occur for a reason.[12-16]

Wei et al. (2019)[17] have found that resilience positively affect personal and organizational outputs, improve nurses' professional skills, job and increase life satisfaction and reduce the rates of leaving, the sense of exhaustion and psychological problems such as depression. Therefore, It is vital for nurse leaders to recognize how resilience can be cultivated among nursing staff. Moreover, leadership behaviors is based on positive psychology, such as authentic leadership that have been determined to increase nurses' resilience and coping ability.[18, 19]

AIM OF THE STUDY

To investigate the relationship between head nurses' authentic leadership and nurses' resilience.

RESEARCH QUESTION

What is the relationship between head nurses' authentic leadership and nurses' resilience?

2. MATERIAL AND METHODS

2.1 Research Design:

Descriptive, correlational research design was used.

2.2 Setting:

This study will be conducted in all inpatient units (medical and surgical) and Intensive Care Units (ICU) at Kafr El-Dawar General hospital (N=22) . The hospital is the second largest hospital at El-Beheira Governorate , with bed capacity (278). It is classified as follows: *(1) medical units* (n=7): medical , coronary , pediatrics , hematemesis , obstetrics and gynecology , burn and urology units ; *(2)surgical units* (n=6): general surgery(A and B), orthopedics , ear , nose and throat, neuro-surgery and vascular; *(3) Intensive Care Units* (n=9): general ICU, pediatric, neonatal ICU, neuro-surgery ICU, coronary care unit , dialysis, toxicology, eclampsia and burn ICU.

2.3 Subjects:

A) All head nurses and their assistants, who were working in the previously mentioned settings and who were available at the time of data collection, were included in the study (N=44).

b) All staff nurses who were working in the previously mentioned settings and who were available at the time of data collection, were included in the study (N=270) .

2.4 Tools of the study:

Two tools were used in this study as follows:

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Tool I: Authentic Nurse Leadership Questionnaire (ANLQ):

It was developed by **Mulligen (2017)**,[5] to measure head nurses' authentic leadership and their staff nurses' perceptions. It consists of 29 items divided into five dimensions:(a) self-awareness (6-item); (b) moral ethical courage (4-item); (c) relational integrality (7-item); (d) shared decision making (6-item) and (e) caring ; (6- item) . Responses will be measured on 5- point Likert scale ranging from (1) Never to (5) All of the time . The overall score level will range from 29 to 145 . The higher score will state a higher authentic leadership . The level of authentic leadership will be as follows: low ≤ 29 to 48; moderate ≥ 49-97; high ≥ 98-145.

Tool II: Conner- Davidson Resilience Scale (CD-RISC):

It was developed by **Conner- Davidson (2003)**,[20] to measure nurses' resilience , it includes 25 items grouped into five dimensions, namely: (1) aspects of persistence/tenacity (8-item); (2) strong sense of self-efficacy (7-item); (3) emotional and cognitive control under pressure (5-item); (4)adaptability and ability to bounce back (3-item) ; and (5) control and meaning (2-item). Responses will be measured on 5 point Likert scale ranging from (1) not true at all to (5) true nearly all of the time .The overall score level will range from 25 to125 . The higher score will illustrate higher nurses' resilience. Resilience level will be measured as follows; low ≤ 25 to 41; moderate ≥ 42 to 83; high ≥ 84 to 125.

In addition, demographic data sheet will be developed by the researcher , it will include questions about; gender, age , educational qualification , working unit , years of experience both nursing and unit ….etc.

2.5 Methods

1. An official permission was obtained from the Dean of Faculty of Nursing, Damanhour University and the responsible authorities of the study settings after explanation of the purpose of the study.

2. The two tools were translated into Arabic Language, and were tested for its content validity and translation by five experts from the field of the study.

3. The two tools were tested for its reliability, using Cronbach's Alpha Coefficient test, to measure internal consistency of the items composing each dimension of the tool. The result of Cronbach's Alpha Coefficient test was found as follows: Authentic Nurse Leadership Questionnaire (ANLQ): head nurses (α=0.835), staff nurses (α=0.819) and Conner- Davidson Resilience Scale (CD-RISC), head nurses (α=0.846); staff nurses (α=0.822); which indicating good reliability.

4. A pilot study was carried out on (10%) of total sample size; head nurses (n=4) and staff nurses (n=27), who were not included in the study sample. The pilot study was done to ascertain the relevance of the tool, to test the wording of the questions, clarity and feasibility of the tools; to estimate the average time needed to collect the necessary data and to identify the different obstacles and problems that might be encountered during data collection. Based on the findings of the pilot study, no modifications were done.

5. Data collection for this study was conducted by the researcher through hand -delivered questionnaire to head nurses and staff nurses after individualized interview with each one for about (5) minutes to explain the aim of the study and the needed instructions were given before the distribution of the questionnaire in their settings. Every subject took from 15 to 20 minutes to fill out the two tools. Data collection took a period of three months, starting from the beginning of March 2020 to the end of May 2020.

Ethical consideration:

- The research approval was obtained from the ethical committee at the Faculty of Nursing, Damanhour University, prior to the start of the study.

- An informed written consent was obtained from the study subjects after explanation of the aim of the study.

- Privacy and right to refuse to participate or withdraw from the study were assured during the study.

- Confidentiality and anonymity regarding data collected were maintained

3. STATISTICAL ANALYSIS

The collected data were organized, coded and analyzed by using the Statistical Package for Social Sciences (SPSS), version 22. The reliability tests were confirmed by using Cronbach's Alpha Coefficient tests. Level of significance was considered at P value ≤ 0.01 highly statistically significant and at P value ≤ 0.05 statistically significant. Scoring system for the two tools was modified from 1 to 5 point Likert-rating scale to overcome any error while treating the ordinal by summing items and "0" was treated for missing data.

Data was divided as: (1) Descriptive statistics: in the form of frequencies and percentages for qualitative variables, mean, and standard deviation for the quantitative variables. (2)Analytic statistics: Chi-square test, Pearson correlation coefficient test, Multiple Linear regression analysis and ANOVA. P value ≤ 0.01 highly statistically significant and P value ≤ 0.05 statistically significant.

4. RESULTS

The present study is mainly aimed to investigate the relationship between head nurses' authentic leadership and nurses' resilience in all inpatient care units, at Kafr El-Dawar General Hospital, at El-Beheira Governorate.

The results of the present study are presented in the following order:

o   Demographic characteristics of studied subjects, working at Kafr El- Dawar General Hospital.

o   Mean scores of authentic leadership among studied subjects, working at Kafr El-Dawar General Hospital.

o   Mean scores of nurses' resilience among studied subjects, working at Kafr El-Dawar General Hospital.

o   Relationship between head nurses' demographic characteristics and authentic leadership and nurses' resilience, working at Kafr El-Dawar General Hospital.

o   Relationship between staff nurses' demographic characteristics and authentic leadership perceptions and nurses' resilience, working at Kafr El-Dawar General Hospital.

o   Correlation matrix between head nurses' authentic leadership and their nurses' resilience perceptions, working at Kafr El-Dawar General Hospital.

o   Correlation matrix between staff nurses' perceptions of authentic leadership and their resilience, working at Kafr El-Dawar General Hospital.

o   Multivariate regression analysis of authentic leadership among head nurses, working at Kafr El-Dawar General Hospital.

o   Multivariate regression analysis of nurses' resilience among staff nurses, working at Kafr El-Dawar General Hospital.

Demographic characteristics of studied subjects, working at Kafr El-Dawar General Hospital.

Table 1 represents that the mean±SD of head nurses was 38.6±4.8; compared to 33.9±8.6 for staff nurses. Less than two thirds of head nurses (63.6%) and less than half of staff nurses (40.7%), had from 30 to less than 40 years old and from 20 to less than 30 years old, respectively. Pertaining to working units, above one third of head nurses and staff nurses were working in surgical units (38.7%, 35.2%), consecutively. Regarding gender, all head nurses and the majority of staff nurses were female (100%, 99.3%), respectively. Concerning educational qualifications, all head nurses had Bachelor of Sciences in Nursing; whereas less than half of staff nurses (41.1%) had Diploma of Secondary School of Nursing.

In relation to years of nursing experience, mean± SD of head nurses was 17.75±4.32; compared to, 13.77±9.37 for staff nurses. Less than two thirds of head nurses (63.6%) had from 10 to less than 20 years of nursing experience; while less than half of staff nurses (44.8%) had less than 10 years of the same experience. As for unit experience, mean± SD of both head nurses and staff nurses were (6.8±3.8, 9.6±8.0), consecutively. Less than half of head nurses (43.2%) and staff nurses (44.4%) had from 5 to less than 10 years and 10 years and more of this experience, respectively. Concerning marital status, the majority of head nurses and staff nurses were married (95.4%, 90.4%), consecutively.

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Table (1): Demographic characteristics of studied subjects, working at Kafr El-Dawar General Hospital. (N=314)

Demographic characteristics	Study subjects (N=314)			
	Head nurses (n=44)		Staff nurses (n=270)	
	No	%	No	%
Age (years)				
20-	2	4.6	110	40.7
30-	28	63.6	88	32.6
40+	14	31.8	72	26.7
Mean± SD	**38.6±4.8**		**33.9±8.6**	
Working Unit				
Medical	13	29.5	90	33.3
Surgical	17	38.7	95	35.2
ICU	14	31.8	85	31.5
Gender				
Male	0	0.0	2	0.7
Female	44	100	268	99.3
Educational qualifications				
Bachelor of Sciences in Nursing	44	100	67	24.8
Diploma of Technical Institute of Nursing	0	0.0	92	34.1
Diploma of Secondary School of Nursing	0	0.0	111	41.1
Years of nursing experience				
<10	2	4.6	121	44.8
10-	28	63.6	71	26.3
20+	14	31.8	78	28.9
Mean± SD	**17.75±4.32**		**13.77±9.37**	
Years of unit experience				
<5	14	31.8	96	35.6
5-	19	43.2	54	20.0
10+	11	25.0	120	44.4
Mean± SD	**6.8±3.8**		**9.6±8.0**	
Marital status				
Single	2	4.6	19	7.0
Married	42	95.4	244	90.4
Divorced	0	0.0	3	1.1
Widow	0	0.0	4	1.5

Mean scores of authentic leadership among studied subjects, working at Kafr El-Dawar General Hospital.

Table 2 shows that there were highly statistically significant differences between head nurses and staff nurses toward total authentic leadership and all its dimensions, where (P ≤ 0.01).

The mean± SD for total authentic leadership is 128.6±7.8 for head nurses; compared to, 112.5±20.4 for staff nurses. The first dimension was relational integrality for head nurses and staff nurses (30.5±3.4, 26.9±5.3), respectively. However, the last dimension was moral ethical courage for head nurses and staff nurses (16.9±2.3, 15.2±3.3), consecutively.

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Table (2): Mean scores of authentic leadership among studied subjects, working at Kafr El-Dawar General Hospital. (N=314)

Authentic leadership dimensions	Head nurses (n=44)			Staff nurses (n=270)			T	P-value
	Min	Max	Mean± SD	Min	Max	Mean± SD		
Self-awareness	24	30	27.4±1.7	10	30	24.1±4.6	4.7	.000**
Moral Ethical Courage	10	20	16.9±2.3	6	20	15.2±3.3	3.2	.001**
Relational Integrality	24	35	30.5±3.4	11	35	26.9±5.3	4.4	.000**
Shared Decision Making	20	30	28.0±2.1	9	30	23.3±5.0	6.4	.000**
Caring	20	30	26.5±2.9	11	30	23.7±4.9	3.5	.001**
Total Authentic Leadership	**96**	**142**	**128.6±7.8**	**50**	**141**	**112.5±20.4**	**5.0**	**.000****

**Highly significant at P≤0.01. *Significant at P ≤0.05. Not significant at P>0.05

Mean scores of nurses' resilience among studied subjects, working at Kafr El-Dawar General Hospital.

Table 3 shows that there were no statistically significant differences between head nurses and staff nurses toward total nurses' resilience and all its dimensions, where (P > 0.05).

According to total nurses' resilience, head nurses and staff nurses mean ±SD were (98.1±10.1, 99.5±12.7), respectively. The highest mean±SD for head nurses and staff nurses was aspects of persistence /tenacity dimension (31.2 ± 3.8, 31.7±4.9), consecutively. Whereas, the least mean ±SD for head nurses and staff nurses was control and meaning (8.4±1.6, 9.2±1.2), respectively.

Table (3): Mean scores of nurses' resilience among studied subjects, working at Kafr El-Dawar General Hospital. (N=314)

Nurses' resilience dimensions	Head nurses (n=44)			Staff nurses (n=270)			T. test	P-value
	Min	Max	Mean ± SD	Min	Max	Mean ± SD		
Aspects of Persistence/tenacity	24	37	31.2±3.8	19	40	31.7±4.9	-0.79	0.428
Strong sense of self-efficacy	20	31	25.9±3.5	14	35	25.9±4.4	0.15	0.884
Emotional and cognitive control under pressure	15	25	20.7±2.4	11	25	20.5±3.2	0.74	0.461
Adaptability and ability to bounce back	7	15	11.8±2.1	4	15	12.2±2.0	0.62	0.539
Control and meaning	9	10	8.4±1.6	6	10	9.2±1.2	0.78	0.364
Total nurses' resilience	**76**	**112**	**98.1±10.1**	**64**	**125**	**99.5±12.7**	**0.63**	**0.529**

. **Highly significant at P ≤ 0.01. *Significant at P ≤ 0.05 Not significant at P > 0.05

Correlation matrix between head nurses' authentic leadership and their nurses' resilience perceptions, working at Kafr El-Dawar General Hospital.

Table 6 reveals that there were positive statistically significant correlations between total authentic leadership and total nurses' resilience, where (P≤0.05). Moreover, there were found a positive high statistically significant correlations between total authentic leadership and self-awareness, moral ethical courage; and shared decision making dimensions, where (P ≤ 0.01).

Regarding total nurses' resilience, there were positive high statistically significant correlations between total nurses' resilience and shared decision making, caring, persistence / tenacity, strong sense of self- efficacy, emotional and cognitive control under pressure, adaptability/ability to bounce back, control and meaning, where (P ≤ 0.01).

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Furthermore, there were positive high statistically significant correlations between moral ethical courage and self -awareness, where (P ≤ 0.01); and between caring and shared decision making, where (P≤0.01); and between persistence/tenacity and both shared decision making and caring, where (P ≤ 0.01). Additionally, the same correlations were found between strong sense of self-efficacy and both shared decision making and persistence/tenacity, where (P≤ 0.01); and between emotional / cognitive control under pressure and shared decision making, persistence / tenacity and strong sense of self-efficacy, where (P≤0.01); and between adaptability / ability to bounce back and caring, persistence / tenacity and strong sense of self- efficacy and emotional /cognitive control under pressure, where (P ≤ 0.01) ; and between control /meaning, adaptability/ability to bounce back, where (P ≤ 0.01).

However, positive statistically significant correlations were found between moral ethical courage and relational integrality and shared decision making; and between caring and total authentic leadership and strong sense of self-efficacy; and between persistence/tenacity and control and meaning, where (P ≤ 0.05).

Whereas; negative high statistically significant correlations were found between control and meaning and self-awareness; and between persistence/tenacity and relational integrality, where (P ≤ 0.01). In addition to that, negative statistically significant correlations were found between adaptability / ability to bounce back and self- awareness, where (P ≤ 0.05). On the other hand, no statistically significant correlations were found between the other dimensions, where (P > 0.05).

Table (6): Correlation matrix between head nurses' authentic leadership and their nurses' resilience perceptions, working at Kafr El-Dawar General Hospital. (N=44)

Authentic Leadership / Nurses' resilience		Self-awareness	Moral Ethical Courage	Relational Integrality	Shared Decision Making	Caring	Total Authentic Leadership	Persistence /tenacity	Strong sense of self-efficacy	Emotional and cognitive control under pressure	Adaptability and ability to bounce back 10	Control and meaning	Total nurses' resilience
Self-awareness	r	1	.368	.070	.263	-.019	.444	-.181	-.099	-.133	-.352	-.435	-.272
	P		.014**	.651	.084	.902	.003**	.240	.521	.391	.019*	.003**	.074
Moral Ethical Courage	r		1	.299	.354	.071	.626	-.042	.194	.033	.068	-.062	.062
	P			.048*	.018*	.647	.000**	.788	.207	.834	.661	.688	.689
Relational Integrality	r			1	-.263	-.284	.233	-.389	-.078	-.135	-.215	.022	-.244
	P				.085	.061	.127	.009**	.613	.384	.161	.887	.110
Shared Decision Making	r				1	.630	.548	.493	.471	.358	.226	.000	.475
	P					.000**	.000**	.001**	.001**	.017**	.140	1.00	.001**
Caring	r					1	.303	.501	.323	.142	.395	.290	.456
	P						.046*	.001**	.032*	.360	.008**	.056	.002**
Total Authentic Leadership	r						1	.045	.244	.103	-.002	-.101	**.221**
	p							.772	.111	.507	.987	.512	**.037***
Persistence/tenacity	r							1	.485	.392	.554	.324	.794
	P								.001**	.009**	.000**	.032*	.000**
Strong sense of self-efficacy	r								1	.760	.549	.245	.850
	P									.000**	.000**	.109	.000**
Emotional and cognitive control under pressure	r									1	.472	.065	.745
	P										.001**	.676	.000**
Adaptability and ability to bounce back	r										1	.569	.798
	P											.000**	.000**
Control and meaning	r											1	.492
	P												.001**
Total nurses' resilience	r												1
	P												

r: Pearson coefficient   ** Highly significant at P ≤ 0.01   * Statistically significant at P ≤ 0.05

Interpretation of correlation coefficient   -Strong (0.75 - 0.99)   -Moderate (0.25- 0.74)   -Weak (0.1 - 0.24)   - Perfect (1)

Correlation matrix between staff nurses' perceptions of authentic leadership and their resilience, working at Kafr El-Dawar General Hospital.

Table 7 shows that there was positive high statistically significant correlation between total authentic leadership and total nurses' resilience. Moreover, there were positive high statistically significant correlations between total authentic leadership and all its dimensions and total nurses' resilience and all its dimensions; where (P≤ 0.01).

Table (7): Correlation Matrix between staff nurses' perceptions of authentic leadership and their total resilience, working at Kafr El-Dawar General Hospital. (N=270)

Authentic Leadership / Nurses' resilience	R/P	Self-awareness	Moral Ethical Courage	Relational Integrality	Shared Decision Making	Caring	Total Authentic Leadership	Aspects of persistence/Tenacity	Strong sense of self-efficacy	Emotional and cognitive control under pressure	Adaptability and ability to bounce back	Control and meaning	Total nurses' resilience
Self-awareness	R	1	.708	.694	.697	.691	.861	.331	.310	.331	.277	.222	.372
	P		.000**	.000**	.000**	.000**	.000**	.000**	.000**	.000**	.000**	.000**	.000**
Moral Ethical Courage	R		1	.776	.726	.677	.869	.420	.417	.394	.318	.202	.461
	P			.000**	.000**	.000**	.000**	.000**	.000**	.000**	.000**	.001**	.000**
Relational Integrality	R			1	.787	.646	.896	.413	.467	.422	.296	.194	.478
	P				.000**	.000**	.000**	.000**	.000**	.000**	.000**	.001**	.000**
Shared Decision Making	R				1	.731	.904	.400	.434	.410	.313	.202	.462
	P					.000**	.000**	.000**	.000**	.000**	.000**	.001**	.000**
Caring	R					1	.848	.344	.363	.310	.281	.156	.384
	P						.000**	.000**	.000**	.000**	.000**	.010**	.000**
Total Authentic Leadership	R						1	.432	.457	.425	.341	.220	**.492**
	P							.000**	.000**	.000**	.000**	.000**	**.000****
Persistence/tenacity	R							1	.727	.646	.530	.409	.895
	P								.000**	.000**	.000**	.000**	.000**
Strong sense of self-efficacy	R								1	.736	.496	.336	.896
	P									.000**	.000**	.000**	.000**
Emotional and cognitive control under pressure	R									1	.536	.443	.858
	P										.000**	.000**	.000**
Adaptability and ability to bounce back	R										1	.404	.687
	P											.000**	.000**
Control and meaning	R											1	.528
	P												.000**
Total nurses' resilience	R												1
	P												

r: Pearson coefficient ** Highly significant at P ≤ 0.01 * Statistically significant at P≤ 0.05

Interpretation of coefficient correlation   -Strong (0.75 - 0.99)   -Moderate (0.25- 0.74) -Weak (0.1 - 0.24)   - Perfect (1)

Multivariate regression analysis of authentic leadership among head nurses, working at Kafr El-Dawar General Hospital.

 Table **8** presents the results of multivariate regression between nurses' resilience as independent variable and authentic leadership as dependent variable. It was found that approximately 53.6 % of the explained variance of authentic leadership is related to nurses' resilience, where the model is significant (F= 3.39, P = 0.032).

However, coefficients table of regression analysis has displayed that nurses' resilience was highly significant predictor of authentic leadership; where (P= 0.01). Whereas, years of unit experience and marital status were significant predictors of authentic leadership; where (P= 0.036, 0.04), consecutively.

Table (8): Multivariate regression analysis of authentic leadership among head nurses, working at Kafr El-Dawar General Hospital. (N=44)

	Unstandardized Coefficients		standardized Coefficients		T	P. value
	B		B			
Years of unit experience	.149		.528		3.297	.036*
Marital status	.158		.568		3.218	.04*
Nurses' resilience	.190		.584		4.144	.01**
ANOVA						
Model	R^2	Df.		F		P. value
Regression	0.536	3		3.397		.032*

a. Dependent Variable: Authentic Leadership

b. Predictors: (constant): Unit experience, marital status and Nurses' resilience

**Highly significant P≤0.01   *significant P≤0.05

Df= degree of freedom   F= One Way Anova

T=Independent samples t-test   R^2= Coeffecient of multiple determination

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Multivariate regression analysis of nurses' resilience among staff nurses, working at Kafr El-Dawar General Hospital.

Table **9** presents the results of multivariate regression between authentic leadership as independent variable and nurses' resilience as dependent variable. It was found that approximately 64.7 % of the explained variance of nurses' resilience is related to authentic leadership, where the model is high significant (F=22.63, P= 0.000). However, coefficients table of regression analysis has displayed that, authentic leadership and years of unit experience were highly significant predictors of nurses' resilience; where (P= 0.000, P= 0.001), respectively. Whereas, years of nursing experience and marital status were significant predictors of nurses' resilience; where (P= 0.03, 0.042), consecutively.

Table (9): Multivariate regression analysis of nurses' resilience among staff nurses, working at Kafr El-Dawar General Hospital. (N=270)

	Unstandardized Coefficients		standardized Coefficients		T test	P. value
	B		B			
Years of nursing experience	0.117		0.114		2.325	0.042*
Years of unit experience	0.561		0.578		5.454	0.001**
Marital status	0.159		0.195		2.819	0.036*
Authentic Leadership	0.315		0.474		8.812	0.000**
ANOVA						
Model	R^2	Df.		F		P. value
Regression	0.647	3.00		22.63		0.000**

a. Dependent Variable: Nurses' resilience

b. Predictors: (constant): Nursing experience, Unit experience, Marital status and Authentic Leadership.

**Highly significant P≤0.01   *significant P≤0.05

Df= degree of freedom   F=One Way Anova

T=Independent samples t-test R^2= Coeffecient of multiple determination

5. DISCUSSION

Authentic Leadership

The findings of the current study clarified that there are highly statistically significant differences between head nurses and their staff nurses' perceptions for total authentic leadership and all its dimensions. This result may be due to the over evaluation of head nurses' status as a leader for themselves; being more oriented and aware of their strengths; they also work hard and have increase in routine and administrative work. Additionally, they are link between top management and their staff nurses and act as role model and have caring relationship with them. Moreover, Ibrahim et al. (2011),[21] revealed that head nurses had sense of self-confidence and are highly trusted as they deal with top management levels, act as a role model, had strong self of purpose and consider the moral and ethics of decisions.

This is in line with Zare (2015),[22] Boamah et al. (2018),[23] and Labrague et al. (2021),[24] who explained that nurse leaders and their staff nurses evaluated them as highly authentic. This is partially supported by Bahreini et al. (2011),[25] and Elhajjar (2017),[26] who found that there were significant differences between head nurses and staff nurses toward authentic leadership. Moreover, Alilyyani et al. (2018)[27] reported a more significant proportion of nurses favors or preferred authentic leadership over other leadership styles. Lee (2019)[28] found that there were significant differences between head nurses and staff nurses toward authentic leadership. On the other hand, this result is not in line with Cerne et al. (2014),[29] who indicated that no significant differences were found between leaders and followers**.** In addition to that, Petan et al. (2016)[30] found that there were no significant differences between the two groups toward authentic leadership.

Additionally, the current study revealed that the highest dimension, for head nurses and staff nurses, was relational integrality; whereas the least one was moral ethical courage for both of them. This result may be due to that head nurses deal with staff nurses with human relationships, sharing with them their special moments. They also provide for them a

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climate of respect and collaboration. The findings of the current study goes in line with Giallonardo (2010),[31] Bennett (2015),[32] who found that the highest mean±SD was observed in the relational integrality dimension.

Moreover, Erkutlu et al. (2016)[33] illustrated that the nurse managers with relational integrality establish an open communication with staff in all kinds of objectives, performance goals, development and conclusion issues in the organizations. Furthermore, Abd Elmawla et al. (2020)[34] found that the highest mean±SD was observed in the relational integrality dimension. On the other hand, this result is incongruent with Raso al. (2020)[35] found that the highest mean±SD was self-awareness.

Resilience

The findings of the current study illustrated that there are no statistically significant differences between head nurses' and staff nurses' perceptions toward total nurses' resilience and all its dimensions. This may be due to the head nurses and their nurses are exposed to same working conditions and circumstances, leading to more abilities to deal with different conditions and problems. They also are acquainted to different applicable solutions as it is repeated most of the time.

This result is in the same line with Hernansaiz (2020),[36] who found that there was no statistically significant difference among studied subjects toward resilience. On the other hand, this is not in line with Sull (2015)[37] revealed that there were statistically significant differences between clinical and administrative staff. Moreover, West (2020)[38] stated that there was statistically significant difference between the studied subjects toward resilience.

The findings of the present study also, indicated that the highest dimension for head nurses and staff nurses was aspects of persistence / tenacity; whereas the least one was control and meaning for both of them. This may be due to head nurses and nurses are viewing problems as challenges and they are trying to find solutions to different difficulties and never give up, in order to attain their working objectives despite the obstacles faced. This is in agreement with Artuch –Grade et al.(2017),[39] and De La fuente et al. (2021),[40] who reported that the persistence/tenacity was first dimension predicting resilience. On the other hand, this is incongruent with Goodman et al. (2017),[41] who noted that control and meaning did not act as significant resilience factors.

Correlation matrix between head nurses' authentic leadership and nurses' resilience, working at Kafr El-Dawar General Hospital.

The present study revealed that there was positive statistically significant correlation between total authentic leadership and total nurses' resilience for head nurses; whereas, a positive highly statistically significant correlation was found between total authentic leadership and total nurses' resilience for staff nurses. This may be due to the nursing staff is trying to develop themselves through attending workshops and training programs. Moreover, the hospital provides continuous in-service education for different staff categories that include leadership training, which impact staff's performance and lead to positive work environment, thus increase their resilience. Furthermore, head nurses, with many years of nursing experience, can demonstrate and utilize the skills of authentic leadership to favorably influence staff nurses, increasing their creativity, innovative behaviors; thus, facilitating their workplace resilience.

This result goes in the same line with Hodliffe (2014),[42] and Zhu et al. (2019),[43] who found that there is positive statistically significant correlation between head nurses' authentic leadership and nurses' resilience. However, this result is disagreed with Ford and Harding (2011),[44] who found that nurses are less resilient, when they are supervised by authentic leader.

Moreover, the findings of the present study revealed that there were positive high statistically significant correlations between head nurses' total authentic leadership and self-awareness, moral ethical courage; and shared decision making; as well as between moral ethical courage and self-awareness, and between caring and shared decision making. Additionally, there were positive statistically significant correlations between head nurses' moral ethical courage and relational integrality and shared decision making; and between caring and total authentic leadership; and strong sense of self-efficacy. On the other hand, high negative statistically significant correlations were found between control and meaning and self-awareness; and between persistence / tenacity and relational integrality for head nurses. As for staff nurses, there were positive high statistically significant correlations between total authentic leadership and all its dimensions.

This may be due to head nurses' authentic leaders, who show self-awareness through reflecting their own strengths, weaknesses and values, knowing themselves and values, their gifts and recognizing their limitations. Moreover, they openly share their own thoughts and beliefs; yet they do not overly display their emotions to nurses; as they maintain a good balance, they solicit opinions from nurses and welcome opposing view points in a fair manner; they also display a strong moral code that is demonstrated in their relationships and decision-making; this ethical foundation is resistant to external forces. Furthermore, their actions reflect core values, even in difficult situations, as they are not influenced by group pressure; their conduct is also, free of personal conflict or appearance of self-serving. In addition to that, head nurses have the ability to solve problems by themselves; to take the lead in solving problems rather than letting others make all the decisions; they also, believe that any problem has a solution.

This result is parallel to Martin (2015),[45] and Carmeli et al. (2015),[46] who revealed that caring was positive statistically significant correlated with authentic leadership and strong sense of self-efficacy. Moreover, Atwijuka et al. (2017),[47] and Kurniawan et al. (2019)[48] investigated that there was positive significant correlations between caring, strong sense of self-efficacy. Even though, Athiyallah et al. (2020)[49] reported that there was negative high statistically significant correlation between persistence/tenacity and relational integrality. Moreover, Sharafieh et al. (2021)[50] illustrated that a positive statistically significant correlation was found between moral courage and shared decision-making. Additionally, Kargar et al. (2021),[51] and Jiang (2022)[52] investigated that there was positive significant correlations between caring, strong sense of self-efficacy.

This is partially in line with kayoed (2014),[53] and Rego et al. (2016),[54] who demonstrated that authentic leadership was positively correlated to moral ethical courage and decision making. Moreover, Akwande (2021)[55] found that there was positive statistically significant correlations between authentic leadership, moral courage and self-awareness. On the other hand, this is not in line with AL-Hassan et al. (2013),[56] who examined that self-awareness and shared decision making was not statistically significant correlated with authentic leadership. Moreover, Stavrova et al. (2018)[57] revealed that there was negative statistically significant correlation between caring and strong sense of self-efficacy. Furthermore, Kreibich et al. (2020)[58] investigated that there was no statistically significant correlation between control and meaning and self-awareness.

The present study illustrated that the majority of nurses' resilience dimensions were high positive statistically significant correlations between each other for head nurses. Moreover, there were positive statistically significant correlations between persistence/tenacity and control and meaning. However, a negative significant correlation was found between adaptability/ability to bounce back and self-awareness. As for staff nurses, there were high positive statistically significant correlations between nurses' resilience and all its dimensions.

This may be due to the majority of head nurses and staff nurses are married and are more experienced; therefore they have the ability to cope through interaction in work; and also, they view that dealing with stress, will make them stronger, they able to face difficulties without top management help. They like challenges are capable to find creative ways to overcome the situation and consider the difficult situation as a challenge and a mean to grow; while considering failures as normal outcome. Moreover, they do all their effort, no matter what the outcome is, to achieve their goals. Even if there are obstacles, they do not give up, and they are able to handle unpleasant feeling, as they see the humorous side of things when facing problems. Furthermore, head nurses are self-aware and self-confident to deal with any problems facing their staff nurses.

This result is in line with Kannangara et al. (2020),[59] and Sarmiento (2021),[60] who found that there was positive statistically significant correlation between persistence/tenacity and control and meaning. Moreover, Kapinski (2021) [61] found that there were high positive statistically significant correlations between strong sense of self-efficacy, decision making and persistence / tenacity.

This result is partially similar to Van Rijn (2020),[62] who reported that there was no statistically significant correlation between caring and resilience. Moreover, Warshawski (2022),[63] and Jin et al. (2022)[64] found that resilience was positive statistically significant correlated with decision making, caring and self-efficacy dimensions. Furthermore, She et al. (2023)[65] reported that there was positive significant correlation between self-awareness and adaptability.

On the other hand, this is incongruent with Holmquist (2013),[66] who explored that there was not statistically significant correlation between strong sense of self-efficacy and persistence / tenacity. Moreover, Graham et al. (2018)[67] found that there was negative correlation between emotional/cognitive control and strong sense of self- efficacy. Furthermore, Zeng

et al. (2020)[68] reported that there was a negative significant correlation between persistence/tenacity and control and meaning. Additionally, Safitri et al. (2021)[69] found that the control and meaning dimension was not statistically significant correlated with adaptability**.**

The findings of the present study showed that nurses' resilience was highly statistically significant predictor of authentic leadership; whereas, years of unit experience and marital status was statistically significant predictors of authentic leadership among head nurses. Moreover, the findings of the present study showed that authentic leadership and years of unit experience was highly statistically significant predictors of nurses' resilience; whereas, years of nursing experience and marital status that was statistically significant predictors of nurses' resilience among staff nurses.

This result may be due to head nurses had many years of experiences which make them naturally adopt authentic leadership style. Moreover, staff nurses' behaviors based on leadership styles used by their head nurses; thus, staff nurses' resilience based on authenticity of head nurses. Furthermore, staff nurses who have higher levels of work experience, are intrinsically motivated to work, more likely to be inquisitive and inclined for learning and change, cognitively active and flexible in procedures and application of mechanisms, determined in overcoming the obstacles and challenges, as well as to explore new opportunities. Additionally, most of staff nurses are professionally involved, which make them more resilient.

This is in accordance with Omari et al. (2012),[70] and Gaddy et al. (2021) ,[71] who found that years of unit experience was significant variable that affect on authentic leadership. Moreover, Mao et al. (2022)[72] indicated that nursing experience positively predicts nurses' resilience. On the other hand, this is not in line with Ren et al. (2018),[73] who reported that marital status and years of nursing experience are not affected by resilience.

6. CONCLUSION AND RECOMMENDATIONS

It is concluded from the present study that head nurses' auhentic leadership was positively related to nurses' resilience at Kafr El-Dawar General Hospital. In addition to that, there were highly statistically significant differences between head nurses and staff nurses toward total authentic leadership and all its dimensions. The first dimension was relational integrality for head nurses and staff nurses; however, the last dimension was moral ethical courage for both of them.

There were no statistically significant differences between head nurses and staff nurses toward total nurses' resilience and all its dimensions. The highest dimension was aspects of persistence / tenacity for head nurses and staff nurses; whereas, the last dimension was control and meaning for both of them. Total authentic leadership was positively statistically significant correlated with nurses' resilience for head nurses and it was positively high statistically significant with nurses' resilience for staff nurses.

Recommendations

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

Hospital Administrators should:

• Design and conduct Stress Management and Resilience Training (SMART) program and strategies that include authentic leadership and resilience skills for nursing staff

• Implement and enforce a Zero Tolerance Policy for disruptive behaviors (bullying and violence) to decrease stressors in the work environment.

• Provide professional development programs such as: interdisciplinary communication, coping strategies, team building and teamwork, and emotional intelligence to increase resilience of nursing staff.

• Implement healthy work environment standards within organizations to promote excellence in nursing care and focus on true collaboration, effective decision making, authentic leadership

• **Head nurses should:**

• Develop their skills through attending training programs on authentic leadership behaviors and resilience to strengthen their abilities and acquire necessary skills.

• Create good ethical climate, through encouraging staff nurses to participate in ethical decision making, that promote morally courageous acts, engage them in ethical decision making reflections by recognizing the moral issue, and evaluating alternative actions from various moral point of view.

- Cultivate staff nurses' flow experience by: setting appropriate and clear unit goals that could be achievable along with developing their skills; providing opportunities to develop their capabilities in coping with challenges.

- Implement techniques to overcome and reduce nurses' stress in the workplace, through applying flexible work schedule, encouraging open and trusting communication and collaboration, and conducting regular meetings with them.

Staff nurses should:

- Attend training programs about resilience in the workplace to identify resilience techniques, such as: time management, emotional intelligence, self-efficacy and adaptability, which can move the healthcare organization toward a supporting culture of resilience.

- Exchange experiences with expert nurses to learn how to deal with any difficult situations that are frequently repeated.

- Balance between working and personal life to deal with difficult work situations effectively.

- Educate themselves how to raise their personal resilience by using spiritual interventions which include: relaxation techniques, mindfulness, and religious customs (e.g., praying and worships) in a routine basis to increase their ability to cope with stress and any difficult circumstances.

Further research

- Relationship between leadership behaviors and nurses' resilience.

- Relationship between nurse managers' authentic leadership and creativity.

- Effects of nurses' resilience on their productivity.

- Impact of servant leadership on staff nurses' resilience

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