

Leadership Styles in Health Crisis Management: Staff Nurses Perspective

Hanaa E Sabra¹, Manal Mohamed Bakr², Soad Said Mahmoud³ & Karima H. Abdelhafez⁴

¹ Assistant Professor of Nursing Administration, Faculty of Nursing, South Valley University Qena Egypt

² Assistant Professor of Nursing Administration, Faculty of Nursing, Menoufia University Egypt

³ Assistant Professor of Psychology, Faculty of Arts, South Valley University, Qena Egypt

⁴ Assistant Professor of Nursing Administration, Faculty of Nursing, Assiut University Egypt

Abstract

Crisis management is the actions of managers and leaders. Effective response to the crisis and coordinating between strategic plan and leadership styles help in managing it. **Aim:** To determine the most effective leadership styles in health crisis management (HCM) from nurses' perspective. **Methods:** This explorative study incorporated a convenience sample of 282 nurses who worked at chest, ICUs, medical, orthopedic departments, ORs, emergency, and surgery units at Qena University Hospitals (QUHs). **Tools:** Two tools were used: Leadership questionnaire, crisis management (CM) questionnaire. **Results:** The uppermost mean score of leadership styles were connected to transformational leadership (32.46±7.8) while the lowest was related charismatic leadership. There were a positive statistically significant correlation between leadership styles and CM. **Conclusion:** All transformational, transactional and charismatic leadership styles are effective in HCM but the studied nurses' preferred transformational leadership styles compared to both other leadership styles. **Recommendations:** Department heads of CM should receive concentrated training before being assigned to such positions and implement training courses about CM for nurses who are working in critical departments and whose have managerial and leadership positions.

Keywords: Crisis, Health, Leadership, Management, Nurses & Styles

Introduction

Nowadays, the health crises became part from our life, it challenging to expect, health professionals need comprehensive preparation to deal with it. It is known that hospitals play a main role in management most of these crises. Therefore, it is essential for these hospitals to equip with competent leaders, who can manage and lead effectively. Crisis is the condition in which the basic constructions, standards and rules are affected damagingly due to unpredicted state (Liu & Froese, 2020 & Rathi et al., 2021).

Crisis management (CM) is the actions and decisions taken by the organization as a result of an unexpected event that may result in damage at the level of the organization. Also it defines as a process which hospitals managers and leaders use to deal and response to the unexpected and accidental event complex events (Varma, 2021). The major leader's role during crisis management is to convey the situation to usual and respond to the threats of crisis, in spite of the undesirable effects that are occur in crisis. The response of skillful leader is essential for the continuousness of the performance of an organization. In spite of the harmful effects of the crisis, there is some constructive effects to the crisis if managed effectively, such as; chance for staff teaching, skills obtaining and acquisition experiences, crisis provides opportunities for

organizational development, reform structures at the organization and putting long-term policies and rules. Leaders are accountable for recognizing the strong point and weaknesses of their team members direct them to established goals and to establish confidence, respect and help their team members during crises (Antonopoulou et al, 2021). The leadership defined as abilities of an individual that could encourage the group of individuals to accomplish a particular goal. During leadership, is best chance to the impact of the leader on health care providers to achieve the best response during health crises by using appropriate effective leadership style. There are many leadership styles that influence positively on hospital crises. It is defined as the method in which the leader, influences the subordinates, guides them, encourages them and affects their performance, and they include the explicit and implicit actions of the leader (Nuel, et al., 2021).

A good leadership style is the pattern that takes into account the future of the organization and contributes to the unification of the efforts and visions of the workers and positively affects the direction of human and material potential towards the vision and interest of the organization regardless of the conditions and difficulties. Among different types of leadership styles; many examples presented, transformational style of leadership has gained more

popularity and attention, due to its logic, arguments, and components. The four dimensions of transformational leadership are: (1) Idealized Influence; (2) Individualized consideration; (3) intellectual stimulation ;(4) inspirational Motivation (Qadoud,, 2018).

Second leadership a style is transactional prefers external motivation and stimulate workers through the policy of reward and punishment, comprises three components; contingent reward, management-by-exception (active) and management-by-exception (passive). Some research studies revealed that the transactional leadership was the dominant leadership style during crisis time. The third type of leadership style is charismatic which stimulus his followers and collect them through the mysteries of his personality and his emotional style more than any other kind of external power. No one can deny that there are many similarities between the charismatic leader and the transformational leader in that the transformational leader may well be charismatic but there are also many differences, pure charismatic leaders, who succeed through a belief in themselves rather than a belief in others maybe narcissistic (Negussie & Demissie, 2017 & Truninger, et al., 2021).

Leaders in nursing profession are suffering from extraordinary penetrating of health crises. Nurse leaders need many skills such as; effective communication, conflict management, self-awareness, and social awareness to help them to use leadership styles in health crises effectively (ANCC, 2020).

Significance of the Study

Today's hospitals and other health care settings have become at risk due to various unpredictable health crises such as COVID-19. So, skilled leaders with proficient leadership style are required to direct and guide the efforts of the staff to accomplish the quality performance particularly during health crises. While reviewing the literatures, the researchers found that there are no studies about this theme in Qena University Hospitals (QUH). At the international and national levels, crises are occurring all the time. So, the researchers choose to conduct this study in an attempt to explore the leadership styles in health CM from nurses' perspective at QUHs.

Study aim

To determine the leadership styles in health Crises Managements from nurses' perspective

Specific aims:

1. To identify the most effective leadership styles in health CM from nurses' perspective
2. To identify relation between leadership styles and CM.

3. To determine the relationship between leadership styles and health CM in regard to socio-demographic characteristics of study sample.

Research questions

1. What are nurses' perception regarding leadership styles in health CM at QUHs?
2. What are nurses' perceptions toward health CM at QUHs?
3. Is there a relation between leadership styles and CM?
4. What are the most effective leadership styles in health CM from nurses' perspective at QUHs?
5. Is there a relation between leadership styles and health CM and socio-demographic characteristics of study sample?

Methods

Design: An explorative design was used to achieve the purpose of the study.

Setting: This study was carried out at Qena University Hospitals (chest, ICUs, medical, surgical, orthopedic, ORs, and emergency units).

Sampling: A convenience sample of 282 nurses was utilized in the current study. Sample size was calculated by using G Power Software, with a power of 0.80, 0 alpha of .05, and a medium effect size. The minimum sample size required for multiple regression analysis was 200 nurses. The total sample size of the current study was increased to 282 nurses (41 of them work in chest units, 49 in ICUs, 55 in medical units, 27 in reception units, 35 in operation unit, 33 in emergency units and 42 in surgery).

Study Tools:

Two instruments were used in the current study:

Tool one: Leadership questionnaire,

It was divided into two parts. First part is socio-demographic data. and the second part is leadership questionnaire.

First part: personal characteristics sheet: It comprised of 10 questions (age, sex, marital status, residence, qualification, unit, job title, experience years, did you occupy administrative position, and training courses).

Second part: It was developed by Anwar, (2017), It contained 30 questions divided into three leadership style; the first transformational leadership 10 questions, the second transactional leadership 10 questions and the third charismatic leadership 10 questions.

Scoring of leadership questionnaire was five-point likert scale as follows; from 1=never, to 5=always. The scores of each subscale were determined by computing the average value of all questions for the items in each style. Each mean score is linked by each style; a total of three mean scores obtained are

compared. The highest score on style shows the greatest effective style.

Tool two: Crisis management questionnaire (CMQ) it was developed by Anwar, (2017) it was used to recognize the efficacy of stated leadership styles in CM as perceived by study sample. It contained ten questions: The responses five (from never, to always), scoring from 1 to 5 respectively.

Validity

The instruments were appraised for face validity by five experts (2 professors and 3 assistant professors) in the field of nursing administration from faculties of nursing at Qena and Assiut universities.

Reliability of the instruments:

Instruments reliability was measured by calculating their internal consistency using Cronbach alpha, coefficient analysis. The results were as follows; 0.911 for transformational leadership, 0.861 for transactional leadership, 0.918 for Charismatic leadership and 0.920 for crisis management, this indicating to a great degree of reliability.

Pilot Study:

Was conducted before the beginning of data collection on a sample of 10 % of contributors, their number were 28 to assess simplicity and applicability, of the study instruments, and to estimation the time necessary to response the questions. It also assisted to evaluate the appropriateness of the study places. Data attained from the pilot study were investigated; no modifications were done. So, participants in the pilot study were included in the study sample.

Procedures:

A letter was sent from the Dean of the Faculty of Nursing, Qena University to the directors of selected settings indicating the purpose and methods of data collection. The researchers met with studied nurses to explain the study purpose. Then, the researchers distributed the questionnaires between them. One researcher stayed with them for any clarification. Data were collected in various shifts according to their work schedule. The questionnaire took about 25 minutes for each participant to fulfill. Data collection took around 2 months started in February 2023 until the end of March 2023.

Ethical Considerations

Ethical approval was attained from the ethical committee and the graduate studies committee in the Faculty of Nursing, Qena University, Egypt, and formal permission was obtained from Board of director of QUHs. To collect data, the researchers met with units' managers to explain the aim of study for them, to gain their agreement and assistance. Oral agreements were obtained from study sample and they knowledgeable that their contribution was

voluntary and they have the right to approve or refuse to contribute in the study without offering any reason. Moreover, confidentiality of collected information and privacy of the participants was assured.

Statistical analysis

After data were collected and fed into computer. Data analysis and presentation were done using SPSS version 20.0. Data were presented using descriptive statistics such as number, percentage, mean, standard deviation and compare between continuous variables by **t-test** and **ANOVA** test. Person Correlation was used for correlation between scores, Univariate and Multivariate Linier regression to determine most effective leadership styles in health crisis management. A two-tailed $p < 0.05$ was considered statistically significant.

Results

Table (1): Distribution of Studied Nurses According to Personal Characteristics (n=282)

Personal data	No	%
Age:		
< 30 year	174	61.7
From 30-40 year	77	27.3
> 40 year	31	11.0
Mean±SD (range)	30.14±7.18(20-49)	
Sex:		
Male	104	36.9
Female	178	63.1
Marital Status:		
Single	85	30.1
Married	197	69.9
Residence:		
Rural	144	51.1
Urban	138	48.9
Qualifications:		
Nursing secondary school diploma	111	39.4
Technical institute of nursing	154	54.6
Bachelor	17	6.0
Unit:		
Chest	41	14.5
ICU	49	17.4
Medical	55	19.5
Orthopedic	27	9.6
Operation	35	12.4
Emergency	33	11.7
Surgery	42	14.9
Job title:		
Nursing technician	153	54.3
Nurse	100	35.5
Professional nurse	29	10.2
Years of experience:		
< 5 years	113	40.1
from 5<10 years	54	19.1
from 10-15 years	46	16.3
>15 year	69	24.5
Mean ±SD(range)	10.31±7.67(1-30)	
Did you occupy administrative position?		
Yes	30	10.6
No	252	89.4
Training courses:		
Yes	95	33.7
No	187	66.3

Table (2): Distribution of Studied Nurses' Perception Regarding to Transformational Leadership Style (n=282)

Items	Never		Rarely		Sometimes		Often		Always	
	No	%	No	%	No	%	No	%	No	%
1. Leaders teach genuine pride for nurses	35	12.4	38	13.5	85	30.1	71	25.2	53	18.8
2. Leaders deal with nurses in respect manner	25	8.9	41	14.5	69	24.5	71	25.2	76	27
3. Leaders have a high level of pride, esteem and confidence	22	7.8	26	9.2	60	21.3	74	26.2	100	35.5
4. Leaders connect certain ideals and	23	8.2	37	13.1	78	27.7	82	29.1	62	22

Items	Never		Rarely		Sometimes		Often		Always	
	No	%	No	%	No	%	No	%	No	%
objectives										
5. Leaders motivate teams to think from a broader perspective	31	11	59	20.9	76	27	62	22	54	19.1
6. Leaders realize the future in an hopeful manner	62	22	44	15.6	92	32.6	45	16	39	13.8
7. Leaders strive for diverse views during problem solving	38	13.5	49	17.4	97	34.4	61	21.6	37	13.1
8. Leaders make creative and constructive suggestions	34	12.1	54	19.1	78	27.7	71	25.2	45	16
9. Leaders are trying to maximize their teams ability and skills	26	9.2	55	19.5	90	31.9	58	20.6	53	18.8
10. Leaders are working to advance the system for performance improvement	41	14.5	56	19.9	59	20.9	57	20.2	69	24.5

Table (3): Distribution of Studied Nurses' Perception Concerning to Transactional Leadership Style (n=282)

Items	Never		Rarely		Sometimes		Often		Always	
	No	%	No	%	No	%	No	%	No	%
Leaders provide nurses with support for their efforts	59	20.9	42	14.9	90	31.9	60	21.3	31	11
Leaders express satisfaction when nurses meet their anticipation	49	17.4	58	20.6	75	26.6	54	19.1	46	16.3
Leaders know team members for their creativity taking	30	10.6	58	20.6	88	31.2	62	22	44	15.6
Leaders are exist when they are needed	25	8.9	43	15.2	90	31.9	66	23.4	58	20.6
Leaders lead their team in an active way	25	8.9	51	18.1	84	29.8	63	22.3	59	20.9
Leaders do not forgive errors for subordinate simply	52	18.4	75	26.6	77	27.3	49	17.4	29	10.3
Leaders delay responding to urgent situation.	37	13.1	62	22	71	25.2	55	19.5	57	20.2
Leaders evade decisions making	40	14.2	50	17.7	72	25.5	45	16	75	26.6
Leaders desire to work within system to minimize discrepancy in health care setting	49	17.4	53	18.8	61	21.6	63	22.3	56	19.9
Leaders focus on outcomes and they evaluate success based on organization's policies	61	21.6	68	24.1	56	19.9	43	15.2	54	19.1

Table (4): Distribution of Studied Nurses' Perception in Relation to Charismatic Leadership Style (n=282)

Items	Never		Rarely		Sometimes		Often		Always	
	No	%	No	%	No	%	No	%	No	%
Leaders unify groups through personality charm, rather than any form of authority	51	18.1	66	23.4	82	29.1	65	23	18	6.4
Leaders are allow representing subordinates to higher authority	38	13.5	62	22	86	30.5	64	22.7	32	11.3
Leaders support employees who take intended risks	46	16.3	68	24.1	76	27	63	22.3	29	10.3
Leaders consider the moral and ethical results of their decisions	44	15.6	43	15.2	93	33	58	20.6	44	15.6
The Leaders support team followers to advance their strong point points	43	15.2	55	19.5	88	31.2	68	24.1	28	9.9
Leaders show a sense of influence and sureness	30	10.6	40	14.2	83	29.4	54	19.1	75	26.6
Leaders guide subordinates to look at administrative problems from various viewpoints	38	13.5	51	18.1	95	33.7	54	19.1	44	15.6

Items	Never		Rarely		Sometimes		Often		Always	
	No	%	No	%	No	%	No	%	No	%
Leaders have a vision of fruitful future for their team	43	15.2	62	22	84	29.8	61	21.6	32	11.3
Leaders are enthusiastic to sacrifice everything in order to illustration their obligation	44	15.6	75	26.6	67	23.8	54	19.1	42	14.9
Leaders have a communication skills enable them to connect with their team	61	21.6	56	19.9)	74	26.2	44	15.6	47	16.7

Table (5): Studied Nurses' Perception Regarding to Crisis Management (n=282)

Items	Never		Rarely		Sometimes		Often		Always	
	No	%	No	%	No	%	No	%	No	%
1. Leaders have aptitude in recognizing and forecasting probable difficulties in crises	41	14.5	70	24.8	77	27.3	64	22.7	30	10.6
2. Leaders take the essential actions to organize and communicate with the various departments	34	12.1	50	17.7	80	28.4	66	23.4	52	18.4
3. Leaders take appropriate actions to build health and safety system and assess the risk management	29	10.3	61	21.6	88	31.2	67	23.8	37	13.1
4. Leaders depend on qualified and experienced workforces in crisis	32	11.3	62	22	79	28	66	23.4	43	15.2
5. Leaders share information occurs	42	14.9	68	24.1	63	22.3	67	23.8	42	14.9
6. Leaders are gathering data from quality and quantity view for safety equipment in crisis	27	9.6	121	42.9	63	22.3	47	16.7	24	8.5
7. Leaders share information from managers to personnel and vice versa	54	19.1	64	22.7	73	25.9	59	20.9	32	11.3
8. Leaders can establish and keep up good relations with teams during crisis	46	16.3	62	22	87	30.9	55	19.5	32	11.3
9. Leaders have skill to take accountability and act skillfully	46	16.3	60	21.3	78	27.7	55	19.5	43	15.2
10. The Leaders remain steadfast in the field of work during the crisis	42	14.9	69	24.5	75	26.6	62	22	34	12.1

Table (6): Distribution of leadership styles and Crisis Management (n=282)

Domains	Max Score	Mean ±SD	Range	Mean%
Transformational leadership	50	32.46±7.8	10-50	64.9
Transactional leadership	50	30.56±5.42	19-45	61.1
Charismatic leadership	50	29.69±7.48	11-45	59.4
Crisis management	50	29.55±7.27	11-46	59.1



Figure (1): Correlation between CM and transformational leadership (n=282)

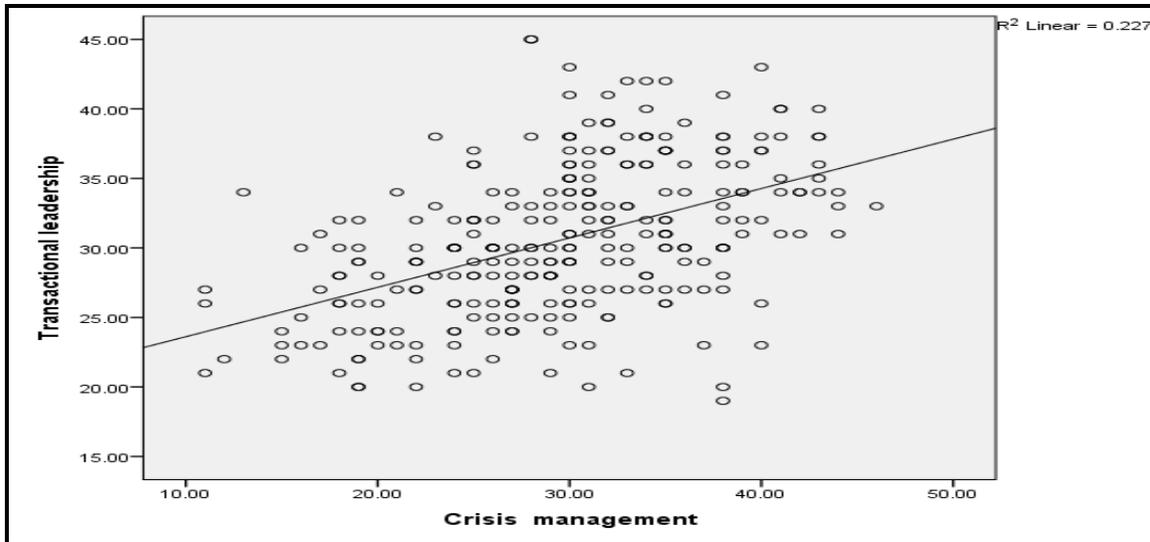


Figure (2): Correlation between Crisis Management and transactional leadership (n=282)

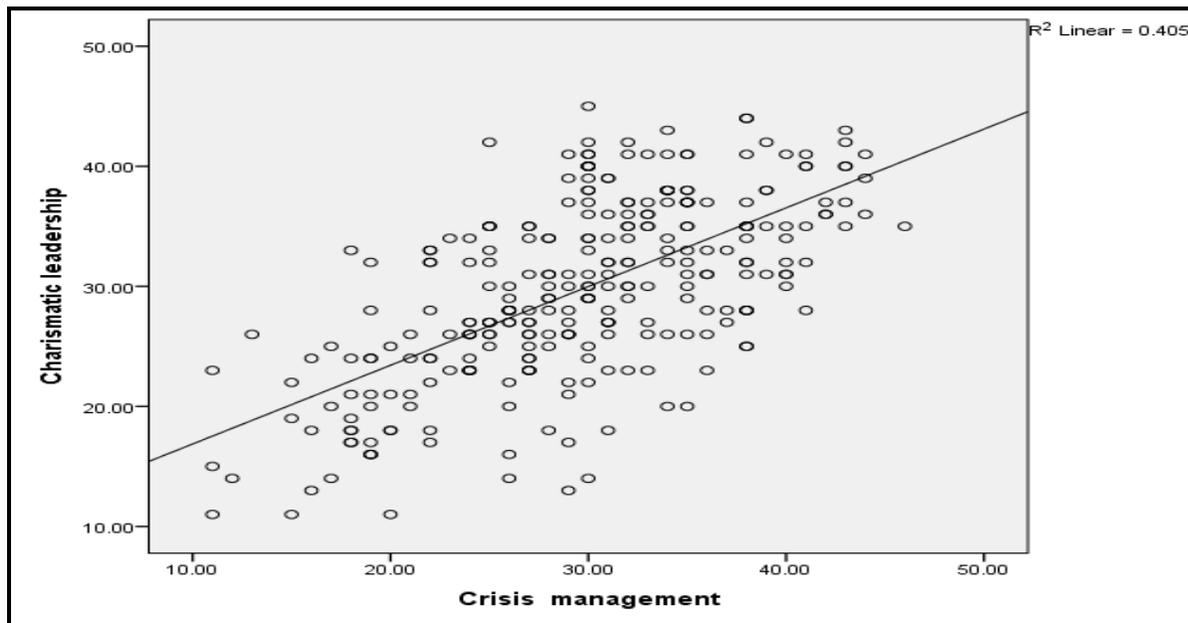


Figure (3): Correlation between Crisis Management and charismatic leadership (n=282)

Table (7): Leadership Styles, Crisis Management according to Studied Nurses Personal Characteristics (n=282)

Personal data	N	Transformational leadership		Transactional leadership		Charismatic leadership		CM	
		Mean± SD	Range	Mean± SD	Range	Mean± SD	Range	Mean± SD	Range
Age									
< 30 year	174	31.31±7.85	10-48	29.94±5.46	19-45	28.7±7.69	11-45	28.44±7.59	11-46
From 30-40 year	77	32.9±7.01	15-45	30.97±5.32	20-42	30.36±7.07	13-43	29.69±6.15	11-43
> 40 year	31	37.87±7.21	16-50	33.03±4.79	21-40	33.58±5.88	26-44	35.42±4.91	26-44
Test Used		F=10.08 P=0.000**		F=4.71 P=0.010*		F=6.24 P=0.002**		F=13.19 P=0.000**	
Gender									
Male	104	34.46±7.28	12-50	32.1±5.15	21-45	31.38±6.69	15-44	30.87±6.11	11-42

Personal data	N	Transformational leadership		Transactional leadership		Charismatic leadership		CM	
		Mean± SD	Range	Mean± SD	Range	Mean± SD	Range	Mean± SD	Range
Female	178	31.3±7.88	10-48	29.66±5.39	19-43	28.7±7.76	11-45	28.78±7.78	11-46
Test Used		t=11.18 P=0.001**		t=13.81 P=0.000**		t=8.66 P=0.004**		t=5.49 P=0.020*	
Marital Status									
Single	85	29.75±7.24	11-44	29.78±4.82	20-42	27.85±7.92	11-42	27.56±7.24	11-44
Married	197	33.63±7.76	10-50	30.9±5.64	19-45	30.49±7.17	13-45	30.41±7.13	11-46
Test Used		t=15.45 P=0.000*		t=2.55 P=0.111		t=7.56 P=0.006**		t=9.34 P=0.002**	
Qualification									
Nursing secondary school diploma	154	31.83±7.97	10-48	29.78±5.06	20-42	29.45±7.89	11-43	28.71±7.64	11-46
Technical institute of nursing	17	32.24±5.83	21-41	32.24±7.56	19-45	27.59±5.77	18-40	29.35±8.17	18-42
Bachelor	111	33.38±7.8	14-50	31.39±5.41	20-43	30.34±7.11	13-45	30.75±6.46	11-44
Test Used		F=1.28 P=0.280		F=3.77 P=0.024*		F=1.17 P=0.312		F=2.58 P=0.078	
Place of work									
Chest	41	37.63±4.82	22-45	32.24±3.99	24-41	33.17±4.67	26-42	31.95±5.75	22-44
ICU	49	29.24±6.5	11-41	29.37±6.38	20-45	26.88±7.56	11-42	26.84±7.83	11-44
Medical	55	30.69±8.54	10-45	30.07±5.82	21-43	27.93±7.66	13-45	28.62±8.26	11-46
Orthopedics	27	31.15±8.49	12-48	29±4.51	21-38	29.07±7.64	13-41	28.37±6.03	15-41
Operation	35	33.2±6.72	16-46	31.86±6.19	20-42	32.69±6.61	14-43	31.63±5.87	12-41
Emergency	33	35.61±7.21	23-50	31.52±4.74	19-38	31.52±6.7	18-44	33±5.57	24-42
Surgery	42	31.26±8.42	11-45	30.12±4.77	23-42	28.36±8.48	11-43	27.9±7.72	16-44
Test Used		F=6.86 P=0.000**		F=2.09 P=0.054		F=5.05 P=0.000**		F=4.54 P=0.000**	
Job title									
Nursing technician	153	31.78±7.97	10-48	29.76±5.07	20-42	29.38±7.86	11-43	28.63±7.61	11-46
Nurse	100	32.58±7.67	14-50	31.03±5.43	20-43	29.88±7	13-45	30.13±6.34	11-44
Head nurse	29	35.69±6.71	21-47	33.14±6.36	19-45	30.69±7.22	18-44	32.38±7.74	18-43
Test Used		F=3.128 P=0.045*		F=5.463 P=0.005**		F=0.42 P=0.675		F=3.80 P=0.023*	
Experience year									
Less than 5 years	113	29.74±7.41	10-45	29.32±5.23	19-43	28.11±7.96	11-43	27.93±8.2	11-46
From 5<10 years	54	33.91±7.89	14-46	31.17±5.67	22-45	29.35±6.78	14-39	29.41±6.45	17-44
from 10-15 year	46	33.39±7.16	16-48	31.74±5.89	21-43	32.11±7.25	13-45	30.46±6.34	15-43
More than 15 year	69	35.17±7.54	15-50	31.33±4.92	20-41	30.94±6.83	15-44	31.71±6.24	11-44
Test Used		F=8.88 P=0.000**		F=3.48 P=0.016*		F=4.10 P=0.007**		F=4.30 P=0.006**	
Did you occupy administrative position?									
Yes	30	36.17±6.54	24-47	32.5±4.59	23-43	32.03±7.92	15-45	32.43±7.38	11-43
No	252	32.02±7.83	10-50	30.33±5.48	19-45	29.41±7.4	11-43	29.21±7.19	11-46
Test Used		t=7.74 P=0.006**		t=4.34 P=0.038*		t=3.31 P=0.070		t=5.37 P=0.021*	
Obtaining Training courses									
Yes	95	34.79±7.02	16-50	31.99±5.65	20-45	30.87±6.58	15-44	31.76±6.3	11-43
No	187	31.28±7.93	10-45	29.83±5.17	19-43	29.09±7.86	11-45	28.43±7.48	11-46
Test Used		t=13.28 P=0.000**		t=10.27 P=0.002**		t=3.61 P=0.059		t=13.83 P=0.000**	

- Independent t -test quantitative data

- One-way Anova test quantitative data

*Significant level at P value < 0.05, **Significant level at P value < 0.01

Table (8): Univariate and Multivariate Linear Regression model Assess Effect of Leadership Styles in Health on CM from Nurses' Perspective at QUH (n=282)

	Univariate				Multivariate			
	Beta	t	Sig.	CI 95%	Beta	t	Sig.	CI 95%
Transformational leadership	0.637	13.820	0.000**	(0.53-0.71)	0.404	6.618	0.000**	(0.28-0.51)
Transactional leadership	0.476	9.056	0.000**	(0.5-0.78)	0.095	1.697	0.091	(- .02-0.27)
Charismatic leadership	0.592	12.289	0.000**	(0.46-0.64)	0.276	4.549	0.000**	(0.15-0.37)

**statistically Significant Factor at P. value <0.01

Table (1): Displays that the study sample were **282**, about **(61.7%)** of them aged < 30 years, about **(63.1%)** of them are females, more than two third of them **(69.9%)** are married, about **54.6%** of them from urban and had technical institute of nursing **(51.1% & 54.6%)** respectively, and about **(40.1%)** of them had <5 year of experience. and the majority of them not occupied administrative position (89.4%)

Table (2): Demonstrates that slightly more than one third of participants perceived that leaders always have a high level of pride, esteem and confidence **(35.5%)**. It is illustrates that participants agrees that leaders sometimes strive for diverse views during problem solving, realize the future in an hopeful manner, trying to maximize their teams ability and skills and teach genuine pride for nurses **(34.4%, 32.6%, 31.9% & 30.1%)** respectively. It is find that about **(29.1%)** of the studied nurses agrees that leaders often connect certain ideals and objectives and make creative and constructive suggestions and always deal with nurses in respect manner **(29.1%, 27.7% & 27%)** respectively.

Table (3): Reveals that nearly one third of study sample perceived that sometimes leaders provide nurses with support for their efforts, they are exist when they are needed and know team members for their creativity taking and lead their team in an active way **(31.9%, 31.9% & 31.2%)** respectively, slightly more than one quarter of them agreed that leaders evade decisions making and do not forgive errors for subordinate simply **(26.6% & 26.6%)**.

Table (4): Illustrates that studied nurses agrees that sometimes leaders guide subordinates to look at administrative problems from various viewpoints, leaders consider the moral and ethical results of their decisions, support team followers to advance their strong point points, and allow representing subordinates to higher authority, **(33.7%, 33%, & 30.5%)** respectively. It is find that slightly more than one quarter of study sample agrees that always leaders show a sense of influence and sureness and rarely they are enthusiastic to sacrifice everything in order to illustration their obligation **(26.6%)**.

Table (5): Displays that nearly one third of nurses agrees that leaders sometimes can establish and keep up good relations with teams during crisis, take

appropriate actions to build health and safety system and assess the risk management and take the essential actions to organize and communicate with the various departments **(31.2%, 30.9% & 28.4%)** respectively. It is find that participants perceived that Leaders have skill to take accountability and act cleverly **(42.9%)**.

Table (6): Clarifies that highest mean and standard deviation is related to transformational leadership **(32.46±7.8)** while the lowest is related charismatic leadership **(29.69±7.48)**.

Figure (1): Illustrates that there were a positive statistically significant association between Crisis Management and transformational leadership $R^2 = (0.350)$.

Figure (2): Shows that there were a positive statistically significant correlation between crisis management and transactional leadership $R^2 = (0.227)$.

Figure (3): Shows that there were a positive statistically significant correlation between crisis management and charismatic leadership $R^2 = (0.405)$.

Table (7): demonstrates that there were a positive statistically significance difference between transformational leadership and studied nurses' personal characteristics except qualification with (P value = $P=0.280$), between transactional leadership and personal characteristics except for marital status and place of work with (P value = $P=0.111$, $P=0.054$) respectively and between charismatic leadership and personal characteristics except for qualification, Job title, occupy administrative position and obtaining training courses with (P value = $P=0.312$, $P=0.675$, $P=0.070$, $P=0.059$) respectively. Also, there were a positive statistically significance difference between personal characteristics and CM except for qualification work with (P value = $P=0.078$).

Table (8): Demonstrates that according to values of beta in **Univariate** and **Multivariate** for transformational leadership, transactional leadership and charismatic leadership P. value <0.01 this revealed that all leadership styles are affective during health CM but the transformational leadership was the most effective.

Discussion

Crisis is an unpredicted, situation or hazard that impact an organization without notification. CM is the practice of proficiently managing and dealing with such situation or hazard. CM must be fast and effective, with CM solutions must be flexible enough to deal with similar unexpected happenings in the future (Holenweger et al., 2017). Currently health care settings require to be staffed with leaders and managers who skilled in health CM and who able to manage health crises, when needed (Panos et al., 2019). The current study aimed to determine the most effective leadership styles in HCM from nurses' perspective at QUHs. The participants of study were 282 staff nurses from chest, ICUs, medical, orthopedic, ORs, emergency, and surgery units at QUHs. For data collection used personal data sheet, leadership questionnaire and CM questionnaire.

In relation to participants perception concerning to transformational leadership style, the current study results exposed that slightly more than one third of participants perceived that leaders always have a high level of pride, esteem and confidence, and leaders sometimes strive for diverse views during problem solving. These might due to that nurses at QUHs have good relationship with their leaders, they view them as role model and they confident in their abilities. These finding was consistent with, Inceoglu et al., (2018) found that transformational leadership supported of their employees to share a vision and use goals as stimulus, and they are seen as self-sufficient and confident. In the same line, Truninger et al., (2021) emphasized that leaders must pursue recent and creative ways of problem solving and detect crises not as a threat but as a challenge to overcome in uncertain times.

Additionally, the study results exposed that nearly one third of participants perceived that leaders sometimes realize the future in a hopeful manner, trying to maximize their team ability and skills, teach genuine pride for nurses and nearly one third of them agreed that leaders often connect undoubted ideals and objectives. These findings confirmed by Perez, (2021) has been stated that transformational leaders utilize techniques such as ideal influence, intellectual stimulation, and individualized consideration to accomplish greater results professionally, and effectively. In the same line ,Changing Mind.org, (2018) stated that transformational leadership developing a creative and inspiring thinking, having a clear vision, able to bond followers, and making a modification in their work and generate the future's vision.

As regard to studied nurses' perception regarding to transactional leadership style, the study results exhibited that, nearly one third of participants

perceived that sometimes leaders provide nurses with support for their efforts; they were exist when they were needed, know team members for their creativity taking and lead their team in an active way. This explained by the fact that leaders at QUHs during time of crisis provided nurses with support, assistance, direction and security. This finding was supported by Varma, (2021), who asserted that leadership must be remain committed in finding innovative ways to respond during time of crisis. In the same line, Krause (2022) mentioned that leader was accountable for classifying the strong point and weaknesses of the subordinated and persuading them to accomplish set goals.

Moreover, the study results stated that slightly more than one quarter of participants agreed that always leaders evade decisions making and delay responding to urgent situation and rarely do they not forgive errors for subordinate simply. This finding was in contrast with Fullan & Quinn, (2015) who emphasized that listening to followers and containing them in decision making so they can build their ability was crucial during a crisis. Also, Celik et al., (2016) asserted that during crisis, leaders must use participative approach in decision making, focuses on their subordinates and motivate them to give their ideas or inputs. In addition, Tisdale et al., (2022) stressed that leader during crises should be able adapt to the developed situation by maintaining harmony, creating cooperative teams, reply rapidly once a problem is identified and quickly addressing issues through effective communication.

With regard to participants perception concerning to charismatic leadership style, the study results indicated that, nearly one third of nurses agreed that sometimes leaders guide subordinates to look at administrative problems from various viewpoints consider the moral and ethical results of their decisions, help team followers to advance their strength points and allow representing subordinates to higher authority. This may due to that when subordinates are faced with problem and uncertainty; they are more likely to go to their leader. These findings were congruence with Lee, (2022) stated that leaders must provide followers with necessary orientation, guidance and support, and maintain sufficient respect and frankness in the relationship. Also et al., (2015) stated that charismatic leaders inspire group by gesturing high morals, and emotional passion, a shared decision making, engage others in a shared meaning and conviction for their collective goals. In addition, Ebrahim et al., (2022) asserted that leadership styles during crisis must be changed from authoritarian leadership to an attitude of collaboration, teamwork and participative management in many organizations.

Concerning studied nurses' perception regarding to CM, the results revealed that nearly one third of participants agreed that leaders sometimes take proper actions to set up health and safety system and evaluate the risk management, keep up good relations with teams during crises and they take the essential actions to organize and communicate with the various departments. These results consistent with **Kapucu, & Ustun, (2018)** who mentioned that leaders during crises should identify risks and developing strategies to manage it, take various actions to bring about immediate change in people's behavior and beliefs as well as to accomplish desired outcomes. **Also & Cho et al., (2020)** emphasized that leader can struggle to encourage all followers of the organization work together to achieve the organization's vision. This connected to the value of communication skills in motivation to accomplish organizational goals during a crisis.

Moreover, the results indicated that around half of participants perceived that leaders rarely have the skill to take accountability and act skillfully. In contrast, **Plessis & Keyter, (2020)** found that leader ability to articulate a vision, set criteria for performance, generate focus, communicate efficiently, and show passion out of crisis becomes the critical factor.

In relation to mean scores of leadership styles and CM, the study results pointed that highest mean was related to transformational leadership while, the lowest was related charismatic leadership. This may explained by the fact that transformational leadership was the preferred leadership style during crisis and has gained more acceptance and consideration. This finding was supported by **Ghasabeh, et al., (2015)** who revealed that the transformational leadership had the utmost value among all leadership styles during CM. In contrast, **Hassan & Rjoub (2017)** has been discovered that the charismatic leadership was the main leadership style during CM.

In relation to correlation between leadership styles and CM, the study results indicated that there were a positive statistically significant correlation between all three leadership styles and CM. This may be due to that studied nurses perceived their leaders at QUHs, during health crisis they played a vital role in the crisis response process and quality of health care provided and due to clearness of administration. This was confirmed by **Teo et al., (2017)** who stated that during crisis the leadership was important in determining an organization's performance. Also, **Alzoub & Jaaffa, (2020)** mentioned that CM not only respond to the increasing expectations of the organization's leadership style, but also affect their overall firm performance.

Regarding to leadership styles and CM according to studied nurses socio-demographic characteristics, the finding of the present study illustrated a positive or highly positive statistically significant difference between transformational, transactional and charismatic leadership styles, CM and age, gender, and years of experience. This may due to that with increasing nurses' age and experience they were concerned with the administrative tasks and become more aware of CM. In contrast, **Ali & Mohammed, (2018)** found that there were no statistically significant differences between CM and sex; age, experience years and specialization.

As demonstrated by the study results, there was a statistically significant difference between transformational and charismatic leadership styles, CM and marital status and place of work. In agreement **Rathi et al., (2021)**, reported that there were differences in the contributors' views on the reality of CM techniques work setting. In contrast, **(Qadoud, 2018)** concluded that there were no statistically significant differences in both leadership styles and health CM and marital status.

Based on the study results there was a positive or highly positive statistically significant difference between transformational and transactional leadership styles, CM and job title, occupy administrative position, and obtaining training courses. This may explained by the fact that nurses when occupy administrative positions and attain training courses become more skilled in CM. This finding was supported by **Boin et al., (2016)** who asserted that leaders were an essential part of CM response success, in which they guiding groups, governing events, and encouraging personnel to achieve the quality performance.

As indicated by study results that there was no statistically significant difference between transformational and charismatic leadership styles, crisis management and qualifications. This may due to that there is no difference between the duties and functions which achieved by nurses based on their qualifications, therefore the leaders were deal with them in the same way. In contrast, **Prewitt & Weil, (2014)** indicated that more qualified nurses were sometimes highly qualified in their practical and administrative knowledge and they were more aware of clinical management. In the same context, **Higgins & Laschinger, (2015)** stated that the scientific set of courses of more qualified nurses comprises theoretical and applied materials in the administration and leadership science more than low qualified nurses.

Regarding to the effect of leadership styles in health on CM from nurses' perspective at QUH, the current study demonstrated that according to

values of beta in Univariate and Multivariate for transformational leadership, transactional leadership and charismatic leadership P. value <0.01 this revealed that all leadership styles were affective during health CM but the transformational leadership was the most effective. This in congruence with, **Tyssen et al., (2014)** had been declared that transformational leadership was utmost effective in many diverse situations and the best leadership style during crisis. Also, **(Qadoud, 2018)** had been found that all of transformational, transactional and charismatic leadership styles are effective during health crisis in hospitals. In addition, **Purnomo et al., (2021)** concluded that transformational leadership had a major helpful effect and a strong relationship in CM.

Conclusion

Based on the results we can conclude the following:

All transformational, transactional and charismatic leadership styles are effective during health CM but. The most preferable style for studied nurses' were transformational leadership styles. There were a positive statistically significant correlation between transformational, transactional, and charismatic leadership and CM. There were positive statistically significant differences between transformational leadership, CM and studied nurses' personal characteristics except qualification and between transactional leadership and studied nurses' personal characteristics except marital status. Age, sex, marital status, place of work and years of experience were positively linked to charismatic leadership while qualifications, job title, occupy administrative position, and obtaining training courses not significantly associated.

Recommendations:

1. Department heads of crises management should receive concentrated training before being assigned to such positions.
2. Provide department of CM with a proper number of competent personnel who able to manage and lead in response to any crisis as arises.
3. Prolonging period of service for leaders and managers who have high proficiency and experience after retirement under the name counselor to advantage from their experience in leadership and CM.
4. Further studies should be conducted for nurses to identify their perceptions about various leadership styles and its effects on CM.
5. Implement training courses about CM for nurses who are working in critical departments and whose have managerial and leadership positions.

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