Educational Program about Organizational Preparedness for Crisis Management: It's Effect on Organizational Commitment and Occupational Stress in the Time of Covid19

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Abstract

Background: The pandemic of the Coronavirus has already had a huge impact on practically every aspect of human life, particularly the health-care sector. As a result, organizations must be well-prepared for crisis management while preserving a healthy workforce's sincere commitment. **Aim:** To determine the effect of an educational program about organizational preparedness for crisis management on organizational commitment and occupational stress in the time of Covid19. **Design:** Quasi-experimental design with one group pre and post-test assessment was utilized. **Setting:** The study was carried out in all in-patient medical, surgical, and intensive care units at Benha Teaching Hospital **Subjects:** A convenient sample of all available head nurses from the above- mentioned study setting (60) head nurses within inclusion criteria **Tools:** Four tools were used to collect the data as follows; (I): Knowledge about Crisis Management Questionnaire, (II): Perceived organizational preparedness for Crisis Management Scale, (III): Organizational Commitment Questionnaire and (IIII): Nurses' Occupational Stress Scale. **Results:** There was an improvement in Mean scores and St-deviations of head nurses' total level of knowledge and perception regarding hospital preparedness for crisis management, organizational commitment, and occupational stress immediately after program implementation. **Conclusion:** Providing an educational program about "organizational preparedness for crisis management" was effective in improving head nurses' knowledge and perception levels regarding hospital preparedness for crisis management which in turn improved head nurses' commitment and occupational stress. **Recommendations**: Hospital managers have to arrange awareness programs about "Preparedness for crises management" for all hospital staff, and make sure that all staff members know their roles, and responsibilities during facing crisis.

Keywords: Crisis Management, Organizational Preparedness, Organizational Commitment, Occupational Stress

Introduction

At the end of 2019, the health-care sector was hit by an uncontrollable unknown disaster dubbed (COVID-19). This unique coronavirus pneumonia first appeared in Wuhan, Hubei Province, China, and hassince gotten a lot of interest around the world [(1)]. Because of the extremely infectious nature of COVID-19, all nursing personnel have worked under great physical and psychiatric stress [(2)].

Any occurrence that leads to an insecure situation affecting one person or group of people is referred to as a crisis. Crises are unfavorable alterations in social or environmental situations, mainly when they happen unexpectedly with no previous preparation. Generally a crisis is a challenging moment or an emergency. A crisis is a scenario in which a "complex system" for family, economy, and society is in confusion [(3)].

Due to the unpredictability of global events, many modern organizations try to forecast future crises ahead of time so that strategies can be made to deal with them. In order to survive a crisis, the organization must be able to significantly alter its course of actions. As a result, the crisis management approach is primarily concerned with recognizing dangers to the hospital and its stakeholders [(4).]

Crisis management is a set of targeted activities carried out by managers in charge of a specific domain in order to deal with emergencies or crises. It's used to deal with issues including prevention (planning), emergency management (announce alert), and emergency scenarios [(5)]. Preparation of health care organizations, especially hospitals is necessary before the occurrence of the crisis to provide better health services and reducing losses and waste [(6)]. Therefore, hospital preparation for crises locates at the top of crisis management at national and international levels [(7)].

Organizational preparation for crisis management is a continual, dynamic, and progressive process that identifies changes in crisis and risk. If head nurses can complete their jobs on time, coordinate their efforts, and deliver adequate results in emergencies or crises, hospitals will be better prepared. In hospitals, the formation of a crisis team capable of providing timely health services in emergency situations has been approved as a policy. Hospitals, notably head nurses should be able to deliver services in a timely manner in a severe circumstance that harms society [(8)].

Hospitals, as the initial responders to injuries, must keep up with and expand their activities in emergency and crisis

situations. The objective of hospital preparation is to provide immediate reaction mechanisms, self-staff training, and eventually respond to the demands when a crisis happens. Managers should concentrate on internal programming to improve hospitals' crisis preparation. When an unpredictable incident occurs, hospitals that have a preparedness plan and practices have experienced less damage [(9)].

Organizational commitment is described as an individual's identification with and involvement in a specific work organization and includes an individual's acceptance of the organization's aims and ideals, as well as a strong desire to continue working for that organization [(10)]. Understanding the organizational behaviors of staff nurses in the workplace requires an understanding of organizational commitment. It reflects how dedicated nurses are to the organization's goals and the work they do. As a result, devoted nurses are more consistent in their actions. Organizational commitment can lead to feelings of fulfillment, belonging, affiliation, and attachment among hospital staff, as well as improved job performance and motivation [(11)].

The nursing profession is usually regarded as one of the most stressful jobs in the world. Many studies have been conducted to identify the contributing factors of stress among nurses, and it has been reported that stress occurs when perceived demands exceed individuals' coping abilities, also stress occurs as a result of interaction between external and internal components involving the individual's perception and taking into account the ongoing relationship between the individual and the environment [(12)].

Occupational stress is frequently described as sensation of being overworked, anxious, and worried. It's a disruptive situation that occurs as a result of negative influences from the inside or outside world [(13).] Occupational stress can be caused by four different elements: the environment, social stressors, physiological stressors, and thoughts. Furthermore, one of the most significant sources of stress is the workplace [(14)].

Occupational stress has been linked to a variety of detrimental outcomes for both the individual and the workplace in several studies. Job stress is associated with higher job dissatisfaction, absenteeism, increased drinking and smoking frequency, increased negative psychological symptoms, and lower goals and self-esteem [(15)]. Occupational stress should not be viewed primarily as a personal issue, but as a serious consideration in the healthcare sector. As a result, management must take many steps to assist their staff in overcoming the negative consequences [(16)]

As manager, the head nurse is in charge of developing an action plan that includes goals and methods for crisis management, as well as training and preparing nursing team members for crisis management. Within that context, it is critical for the head nurse to clarify and define roles and responsibilities, to exercise fair judgment, to treat others with respect, and to appreciate and encourage accomplishments and positive behaviors. The head nurse, on the otherhand, is responsible for enforcing discipline, pointing out shortcomings, and providing constructive feedback to team members [17].

Significance of the study

The COVID-19 pandemic has triggered worldwide devastation. Egypt is still dealing with a difficult situation, as the number of infected/positive patients continues to climb. As a result, health-care organizations have faced difficulties enforcing COVID 19 regulations within their operations, as well as pandemic- related stress which has increased tensions and stress among nursing staff [18].As a natural outcome, there was a necessary need for organizations to find out ways to reduce occupational stress levels among their staff and in the same time increasing their organizational commitment levels that proved to have a great impact on productivity of the work.

Depending on the fact that education enlighten minds and relieving stress" the researchers conducted this study to find out "Can an educational program about crisis management enhance head nurses' knowledge and perception regarding organizational preparedness for crisis management and improve their organizational commitment and occupational stress levels.

Research Aim

Determine the effect of educational program about organizational preparedness for crisis management on organizational commitment and occupational stress in the time of Covid19.

Research Hypothesis:

- There will be significant improvement of head nurses' knowledge and perception regarding organizational preparedness for crisis management after implementation of the program than before.
- There will be significant improvement of head nurses' organizational commitment and occupational stress after implementation of the program.
- There will be negative correlations among head nurses' knowledge and perception regarding organizational preparedness for crisis management, organizational commitment and occupational stress after implementation of the program.

Subjects and Methods

Research design

Quasi-experimental design with one group pre, post and follow- up assessment was utilized.

Research Setting:

This research was conducted in all units at Benha Teaching Hospital in benha city at Qalubyia governorate affiliated to the Ministry of Health. It includes twobuildings (medical and surgical), it contains 30 units. Total bed capacity is about (650) beds. The hospital works 7days / week / 24hrs/ day.

Research Subjects:

A convenient sample of all available head nurses from the above-mentioned study setting who met the inclusion criteria; Having Bachelor degree of nursing science, two years of experience, accept to participate in the study and available at the time of the study. The total final number was 60 head nurses.

Tools for data collection:

Four tools were used for data collection namely;

Tool I: Knowledge about Crisis Management Questionnaire:

A structured questionnaire developed by Khalil, (2019) [19] and modified by the researchers to assess head nurses' knowledge regarding organizational preparedness for crisis management.

It consisted of two parts as follows;

Part I: Personal data of Head nurses

It concerned with personal data of head nurses such as (age, sex, educational qualifications, and experience years and etc…)

Part II: Knowledge about Crisis Management Questionnaire

It composed of 15 questions in the form of multiple-choice questions (MCQ) such as; Definition of crisis (1 item), Types of crises (2 items), Causes of crisis (3 items), Management of crisis (3 items) and Role of hospital and head nurse during crisis (6(items. Study subjects were instructed to select the best correct answer.

Scoring System:

The responses of head nurses were given (1) for the right answer and (0) for thewrong answer. The total score is ranging from (1 to 15), and cut point was done at 60%=9.

In this respect the level of head nurses' knowledge regarding organizational preparedness for crisis management was categorized as the following; " satisfactory level" if the percent ≥ 75% that equals ≥ 11 points, "fair level" from 60% to less than 75% equal to 9 - < 11 points and " unsatisfactory level" < 60 % those equal to< 9 points.

Tool II: Perceived Organizational preparedness for Crisis Management Scale:

It was developed by Fowler et al. (2007) [20] and was modified by the researchers to assess head nurses' perception regarding organizational preparedness for crisis management. It comprised of 30-items such as; "I am very familiar with our hospital crisis plan, as part of our emergency plan, customers and suppliers would be able to contact us for information".

Scoring system:

Using a five-point Likert- scale ranging from 1-5 strongly disagree=1, disagree=2, neutral=3, agree=4 and strongly agree=5. The total score is ranging from 30 to 150, and cut point was done at 60%= 90. In this respect the level of head nurses' perception regarding organizational preparedness for crisis management was categorized as the following;

- "High level" if the percent ≥ 75% that equal ≥ 112.5 points,
- "Moderate level" from 60% to less than 75% equal to 90 - < 112.5 points &
- "Low level" < 60 % those equal to < 90 points.

Tool III: Organizational Commitment Questionnaire:

A structured questionnaire developed by Meyer & Allen, (1991) [21] and modified by the researchers to assess head nurses' organizational commitment level. It consisted of 3 domains covering 18 items as follows; affective 6 items, normative 6 items and continuance 6 items.

Scoring system:

Using a five-point Likert- scale ranging from 1-5 strongly disagree=1, disagree=2, neutral=3, agree=4 and strongly agree=5. The total score is ranging from 18 to 90, and cut point was done at 60%=54

Accordingly, scores that reflect the level of head nurses' organizational commitment was categorized as the following;

- "High level" if the percent ≥ 75% that equal ≥ 67.5 points,
- "Moderate level" from 60% to less than 75% equal to 54 - < 67.5 points&
- "Low level" < 60 % those equal to <54 points.

Tool IV: Nurses' Occupational Stress Scale (NOSS):

A structured questionnaire adapted from Chin, et al., (2020)[22]. It aimed to assess head nurses' occupational stress level. It consisted of 12 factors covering 53 items as follows; work demands 6 items, work–family conflict 5 items, insufficient support from coworkers or caregivers 5 items, organizational issues 5 items, occupational hazards 5 items, difficulty taking leave 2 items, powerlessness 3 items, interpersonal relationships 5 items, and unmet basic physiological needs 3 items, Uncertainty concerning treatment 5 items, Inadequate preparation 3 items, Work load 6 items.

Scoring system:

Using a Five-point Likert- scale ranging from 1-5, strongly disagree =1, disagree =2, neutral= 3, agree= 4 and strongly agree =5. The total score is ranging from 53 to 265, and the cut point was done at 60% = 159.

Administrative Approval:

An official permission was obtained from the dean of Faculty of Nursing, Benha University and the director of Benha Teaching Hospital and from all participants in the study through official letters explaining the aim of the study.

- The researchers met the head nurses of units at Benha Teaching Hospital. To discuss with them "aim of the study, time for data collection, and time for sessions of the program" which were determined according to their views and workload to ensure full cooperation.
- Also, the researchers assured complete confidentiality of the obtained information, the study would not affect the work and the results of the study along with the recommendations will be forwarded to the hospital administration for possible application.

Operational design

It covered a period of six months (from the beginning of Aug 2020 to the end of Feb 2021), the operational design covers the preparatory phase, the pilot study, and the fieldwork.

Preparatory phase

The preparatory phase lasted two months, from the beginning of Aug to the end of Oct 2020, and included the following activities; reviewing national and international materials related to the topic. The three tools were designed, and then were translated into Arabic form. Finally, tools validity, reliability were tested.

Tools Validity and Reliability

The tools were reviewed by expert panel consisted of five nursing administration professors from five universities as follows; Tanta, Benha, Menofia, Cairo and Ain Shams university. The panel ascertained the face and content validity of the tools and according to their recommendations the researchers modified the tools for clarity of sentences.

-The reliability was examined by Cronbach's Alpha coefficient test and the results were as follows; (r= 0.87, 0.94, 0.85 , 0.89) Knowledge about Crisis Management Questionnaire, Perceived organizational preparedness for Crisis Management Scale, Organizational Commitment Questionnaire and Nurses' Occupational Stress Scale, respectively.

Pilot study:

Before starting data collection, the revised tools 'clarity, objectivity and feasibility the time needed for filling the them were tested through pilot study on 10% of the total number of head nurses 6. No modifications were done and head nurses of the pilot study were included in the main study subjects.

Field work:

This research was carried out for ten months from the start of Oct 2020 to the end of May 2021 throughout the following four phases;

Phase 1 (assessment phase): This phase covered two months (from the start of to the end of Oct 2020). This phase was designed to allow the researchers to collect a baseline data through assessment of study subjects' knowledge and perception of organizational preparedness for crisis management and defining their learning needs to be considered duringpreparation of the program. In addition to, assessing study subjects' organizational commitment and occupational stress levels to compare it with the same tools at immediately-post program and follow-up phases. The data collected in two days per week in the morning and afternoon shifts.

Phase 2 (planning phase): During Nov 2020, according to the results of the pretest, and after reviewing the related literature. The educational materials were prepared and "The Educational Program on Organizational Preparedness for Crisis Management" was designed.

Phase 3 (implementing phase): The program was conducted by the researchers throughout two months, from the beginning of Dec 2020 till the end of Jan 2021. The subjects were divided into six groups according to their units; each group includes ten headnurses. Each researcher implemented the program to three groups. The program was implemented in about 16 hours distributed as follows; 8 sessions, 2hours/session, 2days/week in morning and afternoon shifts.

- Program sessions were organized as the follows;

1st session: Introduction about the aim of the current study, objectives and content of the program. 2nd session: Theoretical background about concept of crisis and crisis management. 3rdsession: Crisis communication challenges and resources. 4th session: Organizational preparation of crisis management (principle, strategies and steps). 5th session: Psychological preparedness of the hospital for dealing with crisis. 6th session: Role of head nurse in crisis management. 7th session: Psychological management of individuals during crisis time and 8th session: Summary about theprogram sessions, and open discussion with the study subjects was done to answer any questions or difficulties.

Phase 4 (evaluation phase): during Feb 2021, immediately after implementing the program , the same tools which were used before the program were used to examine to-what extent the educational program improved head nurses' knowledge and perception regarding organizational preparedness for crisis management, their organizational commitment and occupational stress levels. After three months, June 2021, follow-up study was done. The results were analyzed and interpreted and presented in tables and figures.

Limitations of the Study

-The problem which faced most of the time during the completing the questionnaire was increased work load of head nurses.

Results

Table (1) shows that less than two-thirds (61.7%) of nurses were aged between 30- 45 years. And more than half of them (56.7%) had more than 15 years of experience. also, 45% of the studied nurses had bachelor degree of nursing science. Additionally, more than half of them(53.3%) did not attend crisis management training courses previously; and majority of them (86.7%) had not participate in formulating crisis management plan

Table (2) illustrates that there was an improvement in mean-scores and standard deviations of head nurses' total level of knowledge regarding hospital preparedness for crisis management after program than pre-program phase (3.35±1.47,12.88±2.99,8.11±6.27, respectively)

Figure (1) reveals that the highest percent of head nurses (83.3%, 75%) had adequate level of knowledge regarding hospital preparedness to crisis management after implementation of the program while at pre-program phase, the highest percent of them (78.3%) had inadequate level of knowledge.

Table (3) illustrates that there was an improvement in mean-scores and standard deviations of head nurses' total level of perception regarding hospital preparedness for crisis management at immediate post program implementation and follow- up phases than pre- program implementation (77.48±, ±4.83, 71.25±, ±4.14, 56.43±, ±14.49), respectively

Figure (2) reveals that half of head nurses (50%) have high level of perception regarding hospital preparedness to crisis management after implementation of the program than pre-program phase, half of them (51.7%) were having low level of perception.

Table (4) illustrates that there was an improvement in mean-scores and standard deviations of head nurses' total level of commitment immediately at post program implementation and follow- up phases than pre- program implementation (52.68±5.22, 50.75±7.03, 41.13±10.59 respectively)

Figure (3) reveals that less than two thirds of head nurses (65%, 61.7% respectively) had high level of commitment after implementation of the program while only half of them (50%) have high level of commitment at pre-program phase.

Table (5) indicates that there was an improvement in mean scores and standard deviations of head nurses' total level of stress immediately post-program implementation and at follow- up phase than pre- program phase (119.76±17.28, 174.83±8.97, 167.50±17.58, respectively)

Figure (4) reveals that more than half of head-nurses (60%, 65% respectively) had low level of stress after implementation of the program while more than two thirds of them (68.3%) had moderate level of stress at pre-program phase.

Table (6) shows that there was a statistically significant correlation between head nurses' total levels of knowledge and commitment with their age, qualifications, experience years, training and participation in formulation of crisis management plan.

In addition, there was statistically significant correlation between head nurses' total level of perception with their age, experience years, training and participation in formulation of crisis management plan. Regarding total stress level, there was statistically significant negative correlation with all personal data of studied subjects after implementation of the program

Table (7) indicates that ***regarding head nurses' total level of knowledge***, the current result clarified that there was a highly positive statistical correlation with commitment levels, and there was a positive statistical correlation with head nurses' total perception level at post-program and follow- up phases. On the other side, there was a highly negative statistical correlation with total stress level after program implementation and at follow- up phase.

Regarding head nurses' total perception level, there was a positive statistical correlation with their total commitment levels immediately post- program and a highly positive statistical correlation at follow- upphase. On the other side, there was a highly negative statistical correlation between head nurses' total perception and stress levels immediately after program implementation and at follow- up phase.

Table (1): Frequency distribution of personal data of study subjects (n=60)

Personal characters	No (60)	%
Age		
25-30	14	23.3
30-45	37	61.7
≤45	9	15.0
Experience		
1-5	18	30.0
5-15	34	56.7
15≤30	8	13.3
Qualifications		
Nursing diploma	4	6.7
Nursing institute	25	41.7
Bachelor degree of nursing science	27	45.0
Master or doctorate degree of nursing science	4	6.7
Previously attended crisis management training courses		
Yes	32	53.3
No	28	46.7
Previously participated in formulating crisis management plan		
Yes	8	13.3
No	52	86.7

Table (2): Mean and St-deviation of head nurses' knowledge about hospital preparedness for crisis management throughout program phases (n=60)

phases / Variables	Min	Max	Pre		Post		Follow-up		t1	p-value	t2	p-value	t3	p-value
Total knowledge	2	15	Mean	±SD	Mean	±SD	Mean	±SD	21.21	.000**	1.98	0.649	5.84	.000**
			3.35	±1.47	12.88	±2.99	8.11	±6.27						

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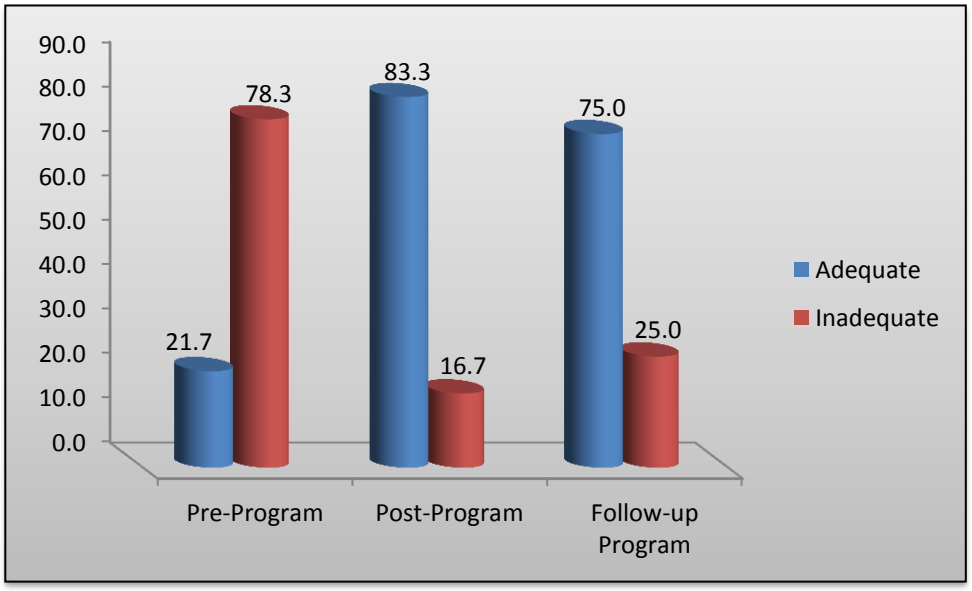

Figure (1): Head nurses' total levels of knowledge regarding hospital preparedness for crisismanagement throughout the program phases (n=60)

Table (3): Mean and St-deviation of head nurses' perception regarding hospital preparedness for crisis management throughout the program phases (n=60)

Variables	Pre		Post		Follow -up		t1	p value	t2	P value	t3	p-value
	Mean	±SD	Mean	±SD	Mean	±SD						
Total planning	12.90	±3.46	18.80	±1.86	17.20	±1.56	11.298	.000**	0.98	0.49	7.055	.000**
Total training	8.88	±2.65	13.36	±1.26	12.81	±1.06	11.183	.000**	1.15	0.52	9.028	.000**
Total awareness	15.03	±4.08	20.68	±1.95	19.90	±1.41	10.729	.000**	0.97	0.48	5.821	.000**
Total safety	3.98	±1.30	4.95	±0.96	3.70	±0.64	5.166	.000**	1.599	.115	3.54	.000**
Total rights	10.08	±2.56	12.31	±1.04	11.70	±1.31	6.099	.000**	1.632	.108	4.85	.000**
Total resources	5.55	±1.87	7.36	±1.08	6.93	±1.02	6.272	.000**	1.542	.175	4.798	.000**
Total	56.43	±14.49	77.48	±4.83	71.25	±4.14	10.815	.000**	1.25	.241	5.899	.000**

**0.000 a highly statistically significant.

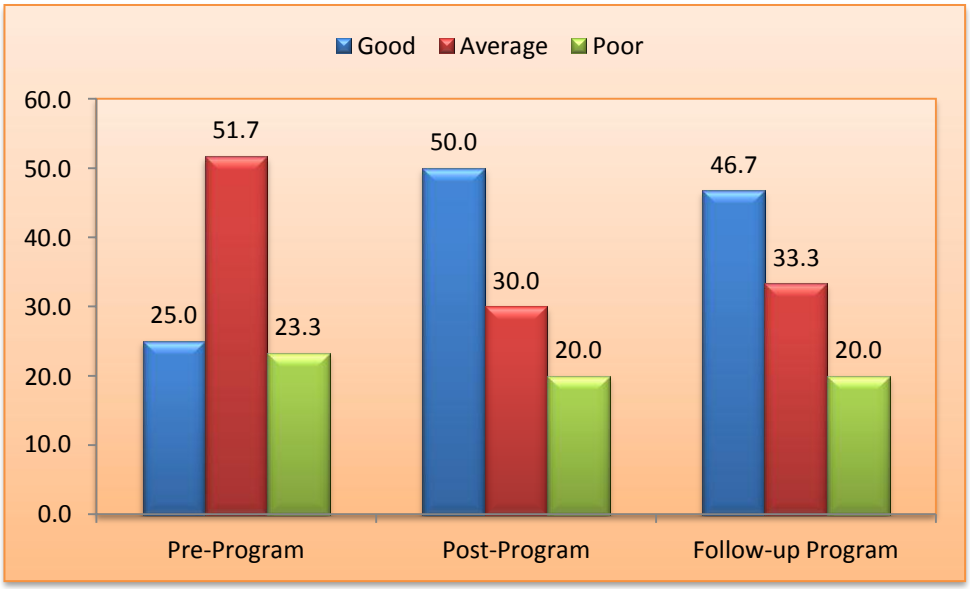

Figure (2): Head nurses' total level of perception regarding hospital preparedness for crisismanagement throughout the program phases (n=60)

Table (4): Mean and standard deviation of head nurses' organizational commitment levels throughout the program phases (n=60)

Variables	Pre		Post		Follow-up		t1	p-value	t2	p-value	t3	p-value
	Mean	±SD	Mean	±SD	Mean	±SD						
Affective commitment	12.50	±3.03	14.38	±2.41	13.63	±2.30	3.643	.001**	1.21	0.07	2.267	.027*
Normative commitment	13.20	±5.37	20.13	±2.22	18.86	±4.07	8.832	.000**	0.98	0.12	3.164	.002*
Continuance commitment	15.43	±4.01	18.16	±2.90	17.25	±3.28	4.350	.000**	0.64	0.54	3.273	.003*
Total commitment level	41.13	±10.59	52.68	±5.22	50.75	±7.03	7.219	.000**	1.24	0.09	2.219	.030*

(**0.000)= a highly statistically significant.

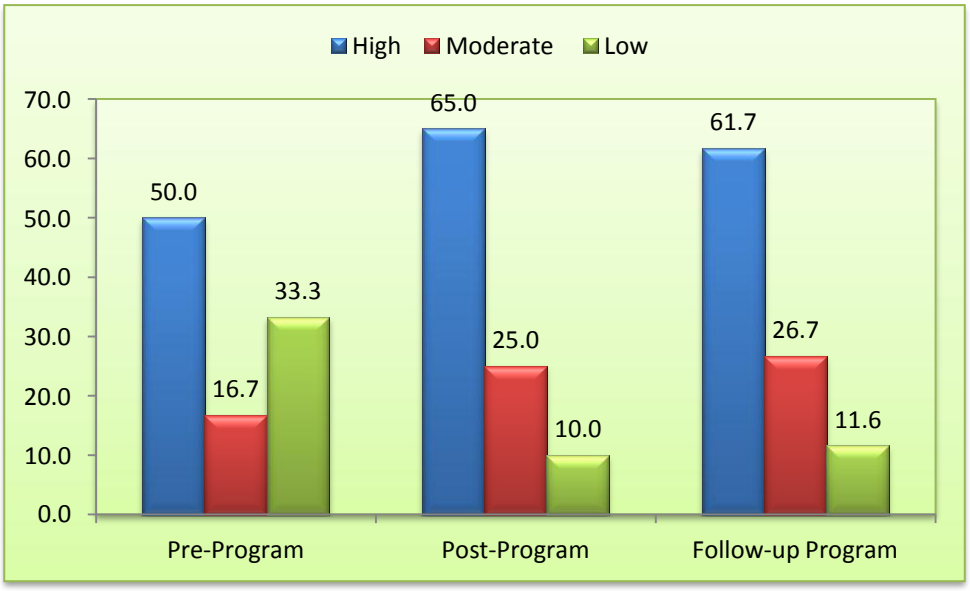

Figure (3): Head nurses' commitment levels throughout the program phases (n=60)

Table (5): Mean and St-deviation of head nurses' occupational stress levels throughout the program phases (n=60)

Dimensions	Min	Max	Pre		Post		Follow up		t1	p-value	t2	p-value	t3	p-value
			Mean	±SD	Mean	±SD	Mean	±SD						
Work Demands	**6**	**24**	**9.75**	**±2.58**	**20.61**	**±2.79**	**19.88**	**±4.27**	**24.080**	**.000****	**0.837**	**.54**	**7.538**	**.000****
Work–Family Conflict	**5**	**17**	**11.76**	**±3.56**	**16.55**	**±1.60**	**15.57**	**±4.03**	**8.596**	**.000****	**0.559**	**.13**	**5.526**	**.000****
Insufficient Support From Coworkers Or Caregivers	**5**	**20**	**9.15**	**±3.25**	**15.66**	**±4.60**	**14.76**	**±5.73**	**9.672**	**.000****	**1.394**	**.62**	**4.913**	**.000****
Organizational Issues	**5**	**19**	**13.95**	**±3.38**	**17.70**	**±2.67**	**16.20**	**±4.12**	**6.258**	**.000****	**1.501**	**.15**	**9.278**	**.000****
occupational hazards	**4**	**20**	**10.65**	**±5.18**	**17.63**	**±3.26**	**16.03**	**±4.81**	**8.204**	**.000****	**1.403**	**.41**	**5.899**	**.000****
Difficulty Taking Leave	**0**	**7**	**4.06**	**±2.42**	**6.31**	**±1.24**	**5.81**	**±1.78**	**6.316**	**.000****	**0.880**	**.54**	**3.435**	**.001****
Powerlessness	**3**	**12**	**4.70**	**±2.55**	**8.70**	**±2.57**	**7.89**	**±2.42**	**8.301**	**.000****	**1.483**	**.14**	**3.542**	**.001****
Interpersonal Relationships	**5**	**19**	**12.88**	**±4.57**	**16.38**	**±1.93**	**15.42**	**±2.80**	**5.141**	**.000****	**1.577**	**.31**	**3.527**	**.001****
Unmet Basic Physiological Needs	**3**	**10**	**7.31**	**±2.13**	**9.35**	**±1.93**	**9.33**	**±1.95**	**5.068**	**.000****	**1.068**	**.53**	**7.631**	**.000****
Uncertainty concerning treatment	**5**	**18**	**11.10**	**±5.36**	**17.56**	**±3.15**	**16.03**	**±2.79**	**9.259**	**.000****	**0.835**	**.41**	**4.761**	**.000****
Inadequate preparation	**3**	**12**	**8.40**	**±1.75**	**9.13**	**±1.34**	**8.13**	**±1.78**	**2.504**	**.015***	**.764**	**.44**	**7.285**	**.000****
Work load	**6**	**23**	**16.03**	**±4.50**	**19.21**	**±2.79**	**18.40**	**±4.04**	**4.441**	**.000****	**.612**	**.54**	**8.668**	**.000****
Total stress	53	168	119.76	±17.28	174.83	±8.97	167.50	±17.58	23.000	.000**	1.51	.47	14.819	.000**

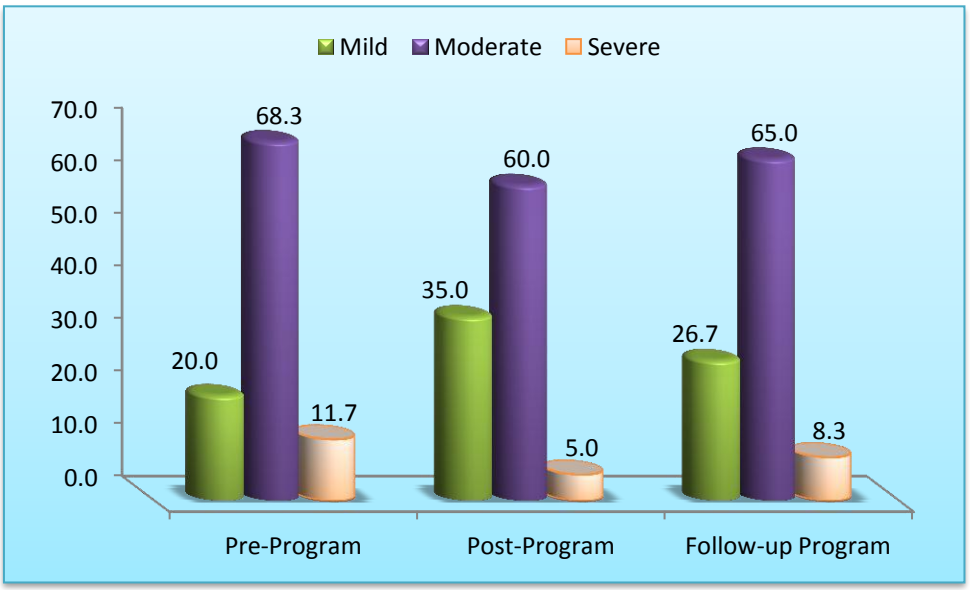

Figure (4): Head nurses' total levels of occupational stress throughout the program phases (n=60)

Table (6): Correlations among study variables and personal data of study subjects after implementation of the program (n=60)

Variables		Program phases									
		Post					Follow-up				
		Age	Experience	Qualifications	Training	Participation	Age	Experience	Qualifications	Training	Participation
Total knowledge level	r	0.731	0.541	0.417	0.681	0.571	0.621	0.351	0.517	0.571	0.629
	p-value	0.014*	0.021*	0.005*	0.041*	0.031*	0.023*	0.031*	0.015*	0.043*	0.050*
Total perception level	r	0.681	0.727	0.645	0.732	0.532	0.710	0.513	0.982	0.813	0.613
	p-value	0.029*	0.047*	0.061	0.045*	0.021*	0.015*	0.086	0.003*	0.038*	0.008*
Total commitment level	r	0.565	0.282	0.631	0.592	0.629	0.388	0.813	0.275	0.513	0.852
	p-value	0.002*	0.029*	0.032*	0.046*	0.050*	0.002*	0.038*	0.033*	0.008*	0.001*
Total stress level	r	-0.809	-0.798	-0.873	-0.879	0.629	-0.596	-0.348	-0.354	-0.962	0.713
	p-value	0.032*	0.012*	0.021*	0.020*	0.050*	0.022*	0.007*	0.005*	0.009*	0.001*

* *0.000 = highly statistically significant.

Table (7): Correlations among study variables after implementation of the program (n=60)

Variables		Program phases							
		Post				Follow-up			
		Total knowledge	Total perception	Total stress	Total commitment	Total knowledge	Total perception	Total stress	Total commitment
Total knowledge level	r	------	0.562	-.720	.653	------	0.612	-.720	.643
	p-value	------	0.001*	.001*	.000**	------	0.001*	.003*	.000**
Total Perception level	r	0.562	------	-.188	.330	0.612	------	-.533-	.621
	p-value	0.001*	------	.151	.010*	0.001*	------	.000**	.000**
Total stress level	r	-.720	-.188	------	-.132-	-.720	-.533-	------	.185-
	p-value	.001*	.151	------	.315	.003*	.000**	------	.156
Total commitment level	r	.653	.330	-.132-	------	.643	.621	.185-	------
	p-value	.000**	.010*	.315	------	.000**	.000**	.156	------

Discussion

Crisis Management provides a management framework for the prevention and reduction of harmful effects using available facilities and equipment for preparation at the time of natural events. Organizational preparation in the crisis management means providing response policy; determine response capabilities and standard practical guide for emergency activities of hospital Amerion et al, (2019) [23].The present study aimed to determine the effect of educational program about organizational preparedness for crisis management on organizational commitment and occupational stress in the time of Covid19.

Regarding the current study hypotheses, Firstly, the researchers hypothesized that "There will be significant improvement of head nurses' knowledge regarding organizational preparedness for crisis management after implementation of the program" The result of the present study revealed that the highest percent of head nurses have adequate level of knowledge after implementation of the program. This may be due to the ability of the professional head nurses to gain knowledge easily and they are interested in the research topics. Also, this improvement in knowledge can be influenced by the rate of memorization, ability of knowledge acquisition, the accumulation of learned knowledge of life, and the refreshing information using different approach of active learning during implementation of educational program which include group discussion, brain storming, group activities, ... etc.

This study finding is similar with Ahayalimudin et al (2019) [24] whose study indicated that the majority of the studied sample had an adequate knowledge about crisismanagement after crisis management program implementation.

Secondly, the researchers hypothesized that There will be significant improvement of head nurses' perception regarding organizational preparedness for crisis management after implementation of the program", the present study indicated that there was improvement of head nurses' total level of perception after program implementation.

This may be due to the training diminishes barriers and struggle to cope with crisis; ongoing educational program for head nurses can profitably havean effect on nursing perception and performance. Also head nurse's desire and ability to keep their knowledge up to date tobe able to improve their coping with crisis and improve perception toward crisis situation.

This agrees with Grant et al, (2019) [25] who indicated that the majority of head nurses have an improvement of perception regarding hospital preparedness to crisis management and indicates the significance of education about nurses' preparedness for crisis

Thirdly, the researchers hypothesized that "There will be significant improvement of head nurses' organizational commitment after implementation of the program". The findings of the current study showed that there was an improvement in head nurses' total level of commitment immediately after program implementation.

From researcher's opinion, the results of the current study may be due to impact of implementing the educational program about hospital preparedness for crisis management which provides baseline information about crisis management and guides head nurses to hospital policies designed for crisis management which indicates how cares for and support their employees which affect the level of commitment. On the same line, Kang et al, (2020)[26] found that there was an improvement in commitment level of head nurses after providing an educational program about crisis management.

Fourthy, the researchers hypothesized that " There will be significant improvement of head nurses' occupational stress levels after implementation of the program". The findings of the current study illustrated that there was an improvement in mean scores and standard deviations of head nurses' total level of stress after implementation of the program. This may be due to the head nursesperceived that the hospital can be prepared to deal with any crisis whenever happens, this reassured them and decreased their stress level.

This finding was similar to the study that was done by Jacob (2015) [27] who found that head nurses during crisis were experiencing severe stress but after sessions of crisis management program were experiencing mild stress and showed a significant difference in stress score before and after practicing the program.

Concerning correlations among study variables and personal data of head-nurses, The present study revealed that there was a statistically significant correlation between head nurses' total level of knowledge and commitment with all their personal data; age, qualifications, experience years, training and participation in formulation of crisis management plan.

This result is similar with results of Nogueras et al, (2018) [28] they found that nurses who had high educational degrees and more years of experience in nursing were more committed to their hospital. On the other side, this result is dissimilar with Teng et al, (2020) [29] they found no significant relationship between years of nursing experience and commitment. Also, LeDuc &Kotzer (2019) [30] they found thare was not relationship between the professional commitment and years of expertise.

Furthermore, the present study results showed that there was statistically significant correlation between head nurses' total level of perception with their age, experience years, training and participation in formulation of crisis management plan. This result goes in the same line with the study was done by Sökmen & Şimşek (2018) [31] they reported that there is ahighly statistically significant correlation between items of socio-demographic characteristics and total level of perception.

However, the present results contradicted with the study carried out by Serinikli (2018) [32] who showed that there was no statistically significant differences found between socio-demographic characteristics and head nurses' total levelof perception.

Regarding total stress level, there was statistically significant negative correlation with all personal data of studied subjects after implementation of the program. The current result goes in the same line with the study done by Suyog et al (2019) [33] they mentioned that there is a highly statistically significant relationship was found between socio-demographic data and stress. On other hand, the result of the study was done by Daneshpazhooh et al, (2017) [34] they illustrated that no statistically difference was noted between items of socio-demographic characteristics and total stress level.

Regarding correlations among study variables after implementation of the program, the current study results revealed that there was a highly positive statistical correlation between head nurses' total level of knowledge and their commitment levels, and there was a positive statistical correlation with head nurses' total perception level at post-program and follow- up phases. This finding was in agreement with LeDuc et al., (2019) [35] they found that nurses' professional commitment was significantly and positively correlated with head nurse knowledge and perception.

On the other side, there was a highly negative statistical correlation between head nurses' total level of knowledge and total stress level after program implementation and at follow- up phase. This finding was in agreement with Al-Hamdan et al, (2020) [36] they reported that negative correlation between nurses` total knowledge about crisis management abilities and their stress score post-theprogram.

With regard to head nurses' total perception level, the current study results revealed that there was a positive statistical correlation with their total commitment levels immediately post-program implementation and a highly positive statistical correlation at follow- up phase. The result of the present study was supported with a study done by Sarıdede and Doyuran (2017) [37] they reported that there is a positive statistically significant difference between head nurses' total perception level and total commitment levels

On the other side, there was a highly negative statistical correlation between head nurses' total perception and stress levels immediately post-program implementation and at follow- up phase. The present study results were consistent with the study carried out by Tekingündüz and Kurtuld (2018) [38] they found that there is a negative statistical correlation between head nurses' total perception and stress levels. While, the present study results disagree with the study results carried out by Ünsal (2018) [39] who showed that no statistically significant differences was found between head nurses' total perception and stress levels

The result of the present study showed that there was a no statistically significant correlation between head nurses' total perception and stress levels after program. The present study results were consistent with the study carried out by Khatibi et al., (2019) [40] they showed that there was no statistically significant correlation between head nurses' total commitment perception and stress levels.

This result is contradicted with the study done by Akhtar (2017) [41] who found that there was a highly positive statistical correlation between head nurses' total commitment and stress levels after program. Also the study done by Ahmed & Ramzan (2018) [42] found that there was a highly negative statistical correlation between head nurses' total commitment and stress levels.

Conclusion

According to the results of the current study we can conclude that "Providing an educational program about "organizational preparedness for crisis management" was

effective in improving head nurses' knowledge and perception levels regarding hospital preparedness for crisis management. Moreover, the program was effective in improving head nurses' total levels of commitment and stress. Moreover, when head nurses have a good knowledge and perception about their hospital preparedness for managing crises, they will be more committed and less stressful toward their hospital.

Recommendations:

Based on the findings of the current study, the following recommendations can be suggested;

Regarding organizational preparedness for crisis management

- The crisis management committee should maintain pre-prepared plan for overcoming crisis and make sure that all nursing staff know their roles, responsibilities and tasks during a crisis
- Hospital managers have to arrange awareness programs about" preparedness for crises management" for all hospital staff
- Publishing posters containing tips about crisis management at each department.
- Academic staff at nursing institutions should educate the future generation of nurses about the possible course of actions to be followed in crisis circumstances.

-Regarding organizational commitment

-Nurse Managers should empower head nurses to improve organizational commitment

-Regarding occupational stress

-Hospital management support to create healthy working environment and provide socializing opportunities for head nurses

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