# **Evaluation of Education Crisis Management Preparedness Among Faculty of Nursing Staff at Damanhour University During Pandemic Covid-19**

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## Abstract

Background: The ongoing COVID-19 pandemic has presented unprecedented challenges, impacting various sectors, including education. This study aimed to evaluate education crisis management preparedness among faculty of nursing staff at Damanhour University during pandemic COVID-19. Methods: Research design: A cross sectional descriptive design. Setting: The study was carried out at the Faculty of Nursing, Damanhour University at the nine scientific academic departments Subject: The study involved all available Nursing staff who agreed to participate in the data collection during the academic years 2021-2022. The total number of faculty nursing staff who took part in this study was 130 (N= 130). Results: More than three quarters (77.7%) of the study sample reported negative effect of pandemic on instructional delivery, about three quarters (73.1%) also reported negative effect of pandemic on evaluation process. While more than three quarters (77%) reported negative effect of pandemic on education process, and less than one quarter (23%) reported positive effect of pandemic on education process. Conclusion: The global impact of COVID-19 on education has been profound and farreaching. The pandemic has disrupted educational systems worldwide, leading to school closures, learning loss and significant challenges for students, educators, and parents. The shift to online learning has exacerbated existing inequalities in access to education. Furthermore, the pandemic has highlighted the importance of digital literacy and the need for robust infrastructure to support distance learning. The long-term consequences of COVID-19 on education are still unfolding. Moreover, the findings of this study revealed that faculty nursing staff perceived a high overall level of negative impact of the pandemic COVID-19 on the education program. Additionally, the results indicated a highly statistically significant relationship between the total perception of faculty staff and their experience in educational crisis management, their educational crisis management training, and their remote learning training. **Recommendation:** Provide comprehensive training to faculty of nursing staff in online teaching methods. Develop crisis management plan in place that outlines procedures for responding to emergencies. Investigate the integration of technology into educational settings and its accessibility among diverse student populations.

Keywords: Education crisis, preparedness, faculty nursing staff, pandemic, Covid-19

#### Introduction

A critical moment or turning point in a course of life a person, nation or an institution may be called a crisis. Crisis as a sudden catastrophic event that seriously disrupts the functions of a community, causing physical, financial, and environmental damages, which are out of the control of the impacted community. Crisis is an unexpected situation to community, organization, or institutions, in general. The crisis is interpreted as an event that will have negative implication. As a threat, the crisis must be dealt with quickly so that, the institution or organization can return to normal (Kılcı et al., 2015 and Fajri et al., 2018).

Crisis and emergency preparedness is in need of continuous risk assessment and educational interventions to a wider group of professionals. The lack of knowledge and readiness regarding crisis management may lead to organizational dysfunction, chaos, and confusion. A successful crisis management needs the right knowledge, attitude, and skills to further develop a competency. Since such a learning process cannot be gained by exposure emergencies situation, educational to interventions and training programs might be safer and cheaper alternatives. Furthermore, an educational intervention within an organization or an interdisciplinary network increases the possibility of coordination and cooperation involved organizations among all and departments leads to standardization of efforts to improve the quality of the response and its effectiveness (Seeger et al., 2005)

However, dealing with crisis requires proper knowledge, attitudes and skills that can be achieved through education. Training in crisis management would be of great assistance in increasing the available workforce to deal with calamities. Crisis education for all faculty of nursing staff is vital. All curricula in the nursing and medical educational institution have issues in emergency and crisis that would go a long way in improving knowledge and skills related to crisis. Faculty's leaders have an important responsibility at the time of the crisis. Leaders must possess elements such as calmness, analytical skills and timely decision-making to handle situations effectively. If leaders are not competent enough to take a proactive approach, the consequences of the crisis can be greater than the crisis itself.

## (Ncube and Chimenya, 2016).

In addition, managing the complexity of crises requires that each member of the nursing faculty acquire a knowledge base and a minimum set of skills that will enable them to plan for and respond to crises in a timely and appropriate manner.

Therefore, it is essential to identify the crisis preparedness needs of healthcare personnel by determining their level of knowledge, awareness, and attitude toward crisis preparedness.

So that, is crucial identifying faculty of nursing staff's needs regarding crisis preparedness by determine the level of faculty of nursing staff' knowledge, awareness, and attitude about crisis preparedness. Universities should actively participate in disseminating and fostering a culture for crisis management among faculty of nursing staff, students, and the community (Veenema, 2009).

Therefore, crisis management preparedness is an response. Therefore. emergency crisis management preparedness refers to a strategy for addressing emergencies that is grounded in an applied scientific approach. This approach involves systematically observing crises and analyzing them in order to identify the necessary preventive measures that should be taken in the event of a crisis. The aim is to enhance the ability of the public and professionals to respond to emergencies by improving their readiness and competency in key management functions such organization, command, control, as communication, coordination. and planning. Possessing the knowledge and skills to effectively handle and mitigate the effects of such events is a fundamental requirement of the crisis management function. (Asgari, 2007).

Furthermore, the aim of crisis management readiness for any establishments and society is to guarantee that suitable frameworks. protocols. and assets are established to offer timely and efficient aid to individuals impacted by crises, thereby expediting relief efforts and the restoration of essential services. (Savoia et al., 2013). Also, providing a chance to handle the crisis or prepared them to avoid them. An effective crisis management system relies on two key factors: accountability personnel and effective communications (Savoia et al., 2013).

Personal accountability means that each member of the crisis management team, as well as all employees of the organization, take responsibility for their roles in managing the crisis. This includes following the crisis management plan, communicating effectively, and working collaboratively to resolve the crisis (Coombs, 2014).

Effective communication is also essential in a crisis management system. It is important to communicate quickly, clearly and accurately with all stakeholders. This communication should include regular updates about the situation. Effective communication can help to minimize confusion, build trust, and reduce the impact of the crisis on the organization's reputation (Usher, 2011 and Saidemehr et al., 2015).

Furthermore, it is of utmost importance for organizations to engage in efficient crisis management in order to mitigate the consequences of a crisis and safeguard their standing and stakeholders. The procedure of crisis management for any given organization encompasses various phases: assessing risks, creating a crisis management plan (CMP), establishing a crisis management team (CRT), responding to and communicating during the crisis, providing training and education, as well as facilitating recovery, evaluation, and feedback. (**Roux-Dufort et al., 2018**).

Risk assessment: The first step in crisis management is to conduct a risk assessment to identify potential risks and hazards that could lead to a crisis. This may involve reviewing past analyzing industry trends and incidents, performing a SWOT analysis in order to organization's ascertain the strengths, weaknesses, opportunities, threats. and Developing crisis management plan: Once potential risks have been identified. The organization should develop а crisis management plan that outlines policies, procedures, and protocols for managing a crisis (Sellnow & Seeger, 2016).

Crisis management team formation: The organization should form a crisis management team that is responsible for implementing the crisis management plan. Crisis response and communication: When a crisis occurs, the crisis management team should immediately activate the crisis management plan and begin implementing the response procedures. This may involve coordinating with emergency response services, implementing safety measures, and communicating with stakeholders. Clear and effective communication is critical during a crisis. Organizations should establish communication protocols and channels to ensure that information is shared quickly and accurately (Roux-Dufort et al., 2018; Wooten et al., 2016).

Training and education: Organizations should train staff on emergency procedures and provide education on crisis management preparedness. This includes regular drills and exercises to test the effectiveness of contingency plans. Recovery and evaluation & Feedback: After the crisis has been managed, the organization should focus on recovery and evaluation. This may involve implementing measures to restore normal operations, reviewing the crisis management plan to identify areas for improvement and providing support to stakeholders who may have been affected by the crisis (Wooten et al., 2016).

To respond to the rapid changes brought about by the COVID-19 pandemic, it is essential for universities and schools to anticipate, plan, react, and adapt to unexpected interruptions. The crisis has exposed significant deficiencies and obstacles. For instance, nursing faculties must be equipped for future emergencies, which could involve video recording of procedures using mannequins and standardized patients. This need is critical while they await funding and further updates to their facilities and infrastructure for simulation-based teaching. Moving forward, it is essential for all faculties to draft contingency plans for extraordinary circumstances like this pandemic. The urgency to upgrade facilities and teaching platforms is of utmost importance. (Agu et al., 2021).

Moreover, the worldwide reaction to the pandemic necessitates every medical and nursing educational institution to prepare for the future. The issue of the faculty lesson and learning process management globally has been underscored by COVID-19. A speedy initial response was seen from many universities as they suspended in-person classes to mitigate community spread. This was succeeded by a transition from in-person instruction to online or virtual delivery of the theoretical components of the curriculum. This swift and commendable action needs to be maintained even post-crisis once things regain normalcy, as it ensures consistent teaching and learning. The focus of this study is on discussing the crisis management efforts in the educational sector, particularly by the nursing faculty related to the implementation of the learning process during the COVID-19 pandemic. (Krishnamurthy, 2020).

## Aims of the study

#### The current study aimed to

evaluate education crisis management preparedness among faculty of nursing staff at Damanhour University during pandemic COVID-19.

#### **Research Question:**

- What are the Faculty of Nursing staff's, Damanhour University perception toward the impact of pandemic COVID-19 on education?
- What are the Faculty of Nursing staff, Damanhour University perception toward education crisis management preparedness?

#### SUBJECTS AND METHOD

#### Materials:

#### **Study Design:**

A descriptive cross sectional research design was utilized to conduct the present study.

#### **Study Setting:**

The study was carried out at the Faculty of Nursing, Damanhour University at the nine academic departments, scientific namely: Medical Surgical Nursing, Critical Care and Emergency Nursing, Obstetric and Gynecological Nursing, Pediatric Nursing, Psychiatric and Mental Health Nursing, Community Health Nursing, Gerontological Nursing, Nursing Administration and Nursing education department.

#### **Study Subjects:**

The study involved all available Faculty of Nursing staff who agreed to participate in the data collection during the academic years 2021-2022. The data was collected in the aforementioned settings. The total number of faculty of nursing staff who took part in this study was 130 (N= 130). The participants were categorized based on their academic degrees as follows: Professor (n= 8), Assistant Professor (n=17), lecturer (n=25), Assistant lecturer (n= 38), Demonstrator (n=32), Clinical instructor (n=10).

## Tools of the study:

**Tool I:** Nursing staff personal, professional profile and Assessment of Healthy Lifestyle. **It consist of two parts:** 

Part I: Nursing staff personal, professional profile

This section was designed to gather data from the participants to determine various aspects of their personal and professional profiles. The collected information includes the following: gender, academic specialty, academic degree, type of residence, socio-economic level, marital status, experience or training in remote learning, experience or training in crisis management, estimated hours spent per week in using online platforms.

Part II: Assessment of Healthy Lifestyle.

This section was developed bv researcher after reviewing relevant literature (Ammar et al., 2020 and Arora T et al., 2020) to collect data from the participants and assess the lifestyle of faculty of nursing staff during pandemic COVID-19. It consists of six domains comprising 37 questions in a Likert format, aimed at evaluating diet, nutrition, physical activity, stress, restorative sleep, social support, environmental and exposures (screen time/outdoor time).

#### Scoring system:

Each of the 37 items in the assessment includes a forced-choice 4-point Likert scale, categorized, and coded as follows: (1) Always; (2) Often; (3) Seldom; (4) Never.

The overall score level of faculty of nursing staff's lifestyle assessment during the pandemic COVID-19 ranged from 0 to 111 and was categorized as follows: 0-37 indicate negative assessment, 38-73 indicate ambivalent assessment, 74-111 indicate positive assessment.

**Tool II:** Assessment of Nursing Staff's Perception toward Impact of Pandemic COVID-19 on the Education Program.

This tool was developed by researcher after reviewing relevant literature (Raaper R et al., 2020 and Al-Samarrai S et al.,2020) to assess the faculty of nursing staff's perception toward the impact of pandemic COVID-19 on the education program. It consist of five dimensions as following: Impact on instructional delivery (8 items), Impact on evaluation process; the crisis affected on the evaluation (3 items), Impact on research (4 items), Economic pressure (5 items), International staff mobility (2 items)

#### Scoring system:

A 5-point Likert scale with forced choices is included for each component. The scale is coded and categorized as follows: (1) strongly agree; (2) agree; (3) neutral; (4) disagree; and (5) strongly disagree.

The overall score level of faculty of nursing staff's perception toward negative impact of pandemic covid-19 on the education program ranged from 22 to 110 and was categorized as follows; 22 - 50 indicate low perception, 51 - 80 indicate moderate perception and 81 - 110 indicate high perception.

**Tool III:** Faculty of Nursing Staff Preparedness Toward Educational Crisis Management Questionnaire.

This section was specifically designed by the researcher after conducting a comprehensive literature review (Naser and Saleem, 2018 and Wunderlich et al., 2017 and Al-Ziftawi et al., 2021) to assess the preparedness of faculty of nursing staff concerning educational crisis management.

Knowledge Assessment (22 points): This section aims to evaluate the level of knowledge possessed by faculty of nursing staff in relation to educational crisis management. Attitude Assessment (10 points): Here, the questionnaire seeks to gauge the attitudes and perceptions of faculty members regarding educational crisis management. Readiness to Practice Assessment (18 points): This category assesses the readiness of faculty of nursing staff to implement educational crisis management strategies in practical scenarios.

## Scoring system:

Each dimension includes a forced choice 5- point Likert scale that are categorized and coded as follows; (1) strongly agree; (2) Agree; (3) Neutral; (4) Disagree; (5) strongly disagree.

The overall score level of faculty of nursing staff preparedness toward educational crisis management ranged from 50 - 250 and was categorized as follows; 50 - 149 indicate low preparedness, 150 - 199 indicate moderate preparedness and 200 -250 indicate high preparedness.

Category I: Consists of 22 points concerning faculty of nursing staff's knowledge about crisis management plan. Overall, the score ranged from 22-110 and was categorized as follows; 22 -65 indicate low knowledge, 66 - 87 indicate moderate knowledge and 88 - 110 indicate high knowledge.

Category II: Consists of 10 points concerning faculty of nursing staff's attitude toward education crisis management. The overall score level ranged from 10 -50 and was categorized as follows; 10 - 29 indicate negative attitude, 30 - 39 indicate ambivalent attitude, 40 -50 indicate positive attitude.

Category III: Consists of 18 points used to evaluate faculty of nursing staff's readiness to practice. The overall score level ranged from 18 -90 and was categorized as follows; 18 - 53indicate low readiness, 54 - 71 indicate moderate readiness and 72 - 90 indicate high readiness.

# Validity:

The validity of the tools was evaluated and revised by a panel of five experts in the field of study at Faculty Nursing, Damanhour University, who reviewed the instrument for clarity, relevance, comprehensiveness, and applicability. Necessary modifications were done.

# **Reliability:**

The Cronbach's alpha correlation coefficient test was used to assess the internal consistency of the items in the three instruments in order to determine their reliability. It was shown that all three tools were trustworthy, with tool I having a r=0.789 (nursing staff personal, professional profile and assessment of the lifestyle tool) accepted reliability, r=0.814 for tool II (staff perception toward educational crisis management' tool) good reliability and r=0.825 for tool III (staff preparedness toward educational crisis management' tool) good reliability at a statistical significance level of  $\leq$ 0.05

# Fieldwork:

Data was collected from faculty of nursing staff through the distribution of structured questionnaires using both written and online methods. For the written questionnaires, distribution took place at the work settings after the clinical day or theoretical lectures. Similarly, for the online questionnaires, Google Forms were utilized. Prior to the distribution of the questionnaires, informed consent was obtained from all study subjects. Clear instructions were provided to participants, ensuring they were fully aware of the study's purpose and the questionnaire's completion process.

The time required to complete the questionnaires was approximately 20-30 minutes after providing a detailed explanation of the study's objectives.

The data collection phase spanned two months, commencing from the beginning of October 2021 and concluding at the end of November 2021. Throughout this period, all participants responded to the questions, and explanations were provided as necessary.

#### **Pilot study:**

A pilot study was conducted by the researcher on 13 faculty members who made up proximal 10% of the sample size and were not included in the study. The purpose of the study was to assess the tool's clarity and applicability, identify potential roadblocks and issues during data collection, and make any necessary modifications.

#### Administrative and Ethical considerations

An official approval to carry out the study was acquired from Damanhour University's Faculty of Nursing Dean, Vice Dean of Education student affairs and heads of departments at Faculty of Nursing, Damanhour University.

Research Approval: The ethical committee of Damanhour University's Faculty of Nursing approved before the study was permitted to start, ensuring that the research adhered to established ethical guidelines.

Informed Consent: All study subjects provided oral informed consent after receiving a clear explanation of the study's objectives and procedures.

Privacy and Voluntary Participation: Participants were guaranteed their right to privacy, and they had the option to refuse participation or withdraw from the study at any point without facing any consequences.

Confidentiality and Anonymity: There were precautions made to ensure the privacy and confidentiality of all the data that was gathered for the study to safeguard the participants' identities and sensitive information.

#### Statistical Analysis:

Using a personal computer (PC), data that was gathered from the sample under study was updated, coded, and input. The Statistical Package for Social Sciences (SPSS) version 22 was used for statistical analysis and computerized data entry. Descriptive statistics were used to report the data as mean standard percentages, frequencies deviation. and graphical presentation(pie chart). It is common practice to assess correlations between categorical data using the Chi Square statistic. The degree of link between two variables is measured using correlation coefficients. Relevance of the findings: Significant at p-value less than 0.01. For statistical significance, a pvalue of less than 0.05 was used. At p-value above 0.05, non-significant.

#### **Results:**

Table (1): Distribution of the studied sample according to their personal and professional profile (N= 130). As shown in table (1a), this study was conducted on 130 faculty of nursing staff members. Regarding their personal and professional profile, the majority of the faculty of nursing staff (94.6%) were females. As regard their academic degree, 29.2% of them were assistant lecturer while 6.2% of them were professors. Near to half of them (44.6%) were from urban area. As well, the mean value (x S.D)of their experience in educational crisis management were  $(2.51\pm1.71)$  years. Almost three quarters of them (73.8%) didn't have educational crisis management training, while 26.2% had. Moreover, 43.9% of them didn't know about presence of ongoing educational crisis management training.

**Table (2):** Distribution of the studied sample according to their total staff lifestyle assessment during pandemic COVID-19. The table illustrates that the total staff lifestyle assessment of the faculty of nursing staff during pandemic COVID-19. It was found that, more than half of them (56.2%) had negative effect during pandemic COVID-19, while 43.8% of them had positive effect during pandemic COVID-19.

**Table (3):** Distribution of the faculty of nursing staff according to their total perception toward the impact of the crisis on education. The table represents that the total perception of the

faculty of nursing staff towards the impact of the crisis on education. It was found that, more than one thirds of them (38.5%) had low perception of the faculty of nursing staff towards the impact of the crisis on education, and 36.1% of them had moderate perception of the faculty of nursing staff towards the impact of the crisis on education, while more than one quarter of them (25.4%) had high perception of the faculty of nursing staff towards the impact of the crisis on education.

**Table (4):** Distribution of the studied sample according to the effect of pandemic on the education process. It represents the effect of pandemic on the education process. It was found that, more than three quarters (77.7%) of them reported negative effect on instructional delivery, about three quarters (73.1%) also reported negative effect on evaluation process. Moreover, the majority (84.6%) of them and more than two thirds (69.2%) reported negative effect on academic achievement and understanding of student.

**Figure (1)** shows that, more than three quarters (77%) reported negative effect of pandemic on education process, while less than one quarter (23%) reported positive effect on education process.

**Table (5):** Distribution of the studied sample according to their total preparedness towards the educational crisis management. The table illustrates that more than half of them (53.1%) had moderate knowledge while about one quarter (23.1%) of them had high knowledge. As well attitude assessment, nearly half of them (43.1%) had ambivalent attitude, whilst 16.2% of them had positive attitude. Additionally, more than one thirds (40.0%) of them had moderate readiness to practice, but more than one quarter (29.2%) of them had high readiness to practice.

**Table (6):** Relationship between demographic characteristics of faculty of nursing staff and their total perception toward the impact of the crisis on education. As regard, the relation between demographic characteristics of the faculty of nursing staff and their total perception toward the impact of the crisis on education, table (14) showed that, a highly statistically significant relation was found between total perception and their experience in educational crisis management (P =0.001\*\*)

Also, highly statistically significant relation between total perception and their educational crisis management training (P =0.005\*\*) and, highly statistically significant relation between total perception and having remote learning training (P =0.001\*\*). A statistically significant relation existed between total perception and their Presence of ongoing educational crisis management training (P =0.032\*). No statistically significant relation was found between total perception and their gender, residence type, experience in remote learning and so with description of internet service (P =0.052), (P =0.067), (P =0.071) and (P =0.084) respectively.

Table (7): Relationship between demographic characteristics of the faculty of nursing staff and their total staff preparedness toward educational crisis management. The table represents the relation between demographic characteristics of the faculty of nursing staff and their total staff preparedness toward educational crisis management. It reveals that there is highly statistically significant relation between total staff preparedness and their experience in educational crisis management (P =0.005\*\*), between total staff preparedness and educational crisis management training (P =0.003\*\*) and between total staff preparedness and presence of ongoing educational crisis management training  $(P = 0.009^{**})$ . As well as statistically significant relation existed between total staff preparedness and having remote learning training  $(P=0.021^*)$ . No statistically significant relation was found between total staff preparedness and gender, residence type, experience in remote learning and with description of internet service (P =0.069), (P =0.060), (P =0.057) and (P =0.061) respectively.

Table (8): Correlation between the studied variables. As shown in the table, Overall staff perception and the lifestyle assessment showed a highly statistically significant favorable association toward the impact of the crisis on education (p=0.000\*\*). Furthermore, there was highly statistically significant positive correlations between total lifestyle assessment and total staff preparedness toward educational crisis management (p=0.000\*\*). In addition, there was a highly statistically significant positive correlations between total staff perception toward the impact of the crisis on education and total staff preparedness toward educational crisis management (p=0.001\*\*)

Table (1): Distribution of the studied sample according to their personal and professional profile (N= 130).

Personal information	No.	%
Gender		
Male	7	5.4
Female	123	94.6
Academic specialty		
Medical –surgical nursing	19	14.6
Critical care and emergency nursing	11	8.5
Obstetric and gynecologic nursing	13	10.0
Pediatric nursing	14	10.8
Psychiatric and mental health nursing department	15	11.5
Community health nursing	14	10.8
Geriatric department	12	9.2
Nursing Administration	l /	13.1
A cademic degree	15	11.5
Drofessor	8	6.2
A agistant Drafaggar	17	12.1
	17	13.1
	23	19.2
Assistant Lecturer	38	29.2
Demonstrator	32	24.6
Clinical instructor	10	7.7
Residence type		
Urban	58	44.6
Semi-urban	38	29.2
Rural	34	26.2
Socio-economic level		
Upper class	2	1.5
Upper middle class	81	62.4
Lower middle class	41	31.5
Upper lower class	6	4.6
Marital status		
Married	106	81.5
Single	22	16.9
Divorced	1	0.8
Widow	1	0.8
Experience in educational crisis management		
<1 year	14	10.8
1-2 years	32	24.6
2.5 years	10	14.6
5-5 years	19	13.8
	24	19.5
	24	10.5
None	23	17.7
Having educational crisis management training	2.4	262
Yes	34	26.2
No	96	73.8
Presence of ongoing educational crisis management training		
Yes	38	29.2
No	35	26.9
Don't know	57	43.9

 Table (2): Distribution of the studied sample according to assessment of nursing staff healthy lifestyle during pandemic COVID-19 (N=130).

Total staff lifestyle assessment	Positiv	e effect	Negative effect		
i otal stall mestyle assessment	N	%	Ν	%	
Diet and nutrition	49	37.7	81	62.3	
Physical activity	42	32.3	88	67.7	
Stress management	38	29.2	92	70.8	
Restorative sleep	50	38.5	80	61.5	
Social support	55	42.3	75	57.7	
Environment exposures	59	45.4	71	54.6	
Screen time/outdoor time	60	46.2	70	53.8	
Total	57	43.8	73	56.2	

 Table (3): Distribution of the faculty of nursing staff according to their total perception toward the impact of the crisis on education (N=130).

Total staff perception toward the impact of the		High		Moderate		Low	
crisis on education	N	%	Ν	%	N	%	
Impact on instructional delivery	28	21.5	43	33.1	59	45.4	
Impact on evaluation process	30	23.1	45	34.6	55	42.3	
Impact on research	31	23.8	39	30.0	60	46.2	
Economic pressures	27	20.8	52	40.0	51	39.2	
International staff mobility	37	28.5	46	35.4	47	36.1	
Total	33	25.4	47	36.1	50	38.5	

 Table (4): Distribution of the studied sample according to the effect of pandemic on the education process (N=130).

Items	Positiv	e effect	Negative effect		
	n	%	n	%	
Effect of pandemic on instructional delivery	29	22.3	101	77.7	
Effect of pandemic on evaluation process	35	26.9	95	73.1	
Effect of pandemic on academic achievement	40	30.8	90	69.2	
Effect of pandemic on research	56	43.1	74	56.9	
Effect of pandemic on understanding of students and feedback	20	15.4	110	84.6	



Figure (1): Percentage distribution of the studied sample according to the effect of pandemic on education process (N=130).

Table (5): Distribution of the studied sample according to their total preparedness towards the educational crisis management (N=130).

Total staff preparedness	N	%
Knowledge Assessment		
High	30	23.1
Moderate	69	53.1
Low	31	23.8
Attitude Assessment		
Positive	21	16.2
Ambivalent	56	43.1
Negative	53	40.7
Readiness to practice assessment		
High	38	29.2
Moderate	52	40.0
Low	40	30.8
Total staff preparedness		
High	35	26.9
Moderate	73	56.2
Low	22	16.9

Table (6):Relationship between demographic characteristics of faculty of nursing staff and their total perception
toward the impact of the crisis on education (N=130).

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Items		High n=33		Moderate n=47		Low n=50		<b>X</b> <sup>2</sup>	P- Value
		Ν	%	Ν	%	Ν	%		
Candan	Male	2	6.1	2	4.3	3	6.0	1 209	0.052
Gender	Female	31	93.9	45	95.7	47	94.0	1.508	0.032
	Urban	17	51.5	23	48.9	18	36.0		
Residence Type	Semi-urban	9	27.3	13	27.7	16	32.0	1.521	0.067
	Rural	7	21.2	11	23.4	16	32.0		
	<1 year	0	0	1	2.1	13	26.0		
Experience in educational crisis management	1-2 years	0	0	15	31.9	17	34.0		
	3-5 years	2	6.1	10	21.3	7	14.0	10 114	0.001**
	5-10 years	8	24.2	9	19.1	1	2.0	10.114	
	>10years	20	60.6	3	6.4	1	2.0		
	None	3	9.1	9	19.1	11	22.0		
Educational crisis	Yes	31	93.9	2	4.3	1	2.0	0 751	0.005**
management training	No	2	6.1	45	95.7	49	98.0	8.731	0.003.**
Presence of ongoing	Yes	29	87.9	7	14.9	2	4.0	3.278	0.032*
educational crisis	No	1	3.0	4	8.5	30	60.0		
management training	Don`t know	3	9.1	36	76.6	18	36.0		
	<1 year	5	15.1	8	17.0	9	18.0		
	1-2 years	19	57.6	23	48.9	19	38.0		
Experience in remote	3-5 years	3	9.1	7	14.9	11	22.0	1 ( 4 4	0.071
learning	5-10 years	1	3.0	3	6.4	3	6.0	1.044	0.071
_	>10years	2	6.1	2	4.3	2	4.0		
	None	3	9.1	4	8.5	6	12.0		
Having remote learning	Yes	30	90.9	21	44.7	3	6.0	10.065	0.001**
training	No	3	9.1	26	55.3	47	94.0	10.965	0.001***
	Bad	1	3.0	2	4.3	3	6.0		
	Acceptable	15	45.5	19	40.4	17	34.0		
Description of internet	Good	7	21.2	19	40.4	21	42.0	1.685	0.084
SCIVICE	Very Good	10	30.3	7	14.9	9	18.0		
	Excellent	0	0	0	0	0	0		

\*Significant at p <0.05. \*\*Highly significant at p <0.01. Not significant at p>0.05  $X^2 = Chi$ -square

Table (7): Relationship	between demographi	c characteristics	of the facult	y of nursing	staff and	their tota	al staff
prepar	edness toward educa	tional crisis man	agement (N	=130).			

			Tota						
Items		H n:	ligh =35	Moc n=	lerate =73	Low n=22		<b>X</b> <sup>2</sup>	P- Value
		Ν	%	Ν	%	Ν	%		
Candan	Male	4	11.4	2	2.7	1	4.5	1 215	0.000
UCHIUCI	Female	31	88.6	71	97.3	21	95.5	1.215	0.069
Residence Type	Urban	19	54.3	33	45.2	6	27.3		
	Semi-urban	9	25.7	18	24.7	11	50.0	1.281	0.060
	Rural	7	20.0	22	30.1	5	22.7		
	<1 year	1	2.9	11	15.1	2	9.0		
Experience in educational crisis management	1-2 years	1	2.9	31	42.5	0	0		0.005**
	3-5 years	2	5.7	17	23.3	0	0	8 1 <u>2</u> 2	
	5-10 years	8	22.8	10	13.7	0	0	0.422	
	>10years	21	60.0	3	4.1	0	0		
	None	2	5.7	1	1.4	20	91.0		
Educational crisis	Yes	32	91.4	2	2.7	0	0	9.496	0.002**
management training	No	3	8.6	71	97.3	22	100		0.005
Presence of ongoing	Yes	31	88.6	6	8.2	1	4.5	6.935	0.009**
educational crisis	No	2	5.7	13	17.8	20	91.0		
management training	Don`t know	2	5.7	54	74.0	1	4.5		
	<1 year	4	11.4	13	17.8	5	22.7		
	1-2 years	14	40.0	38	52.1	9	40.9		
Experience in remote	3-5 years	9	25.7	9	12.3	3	13.6	1 205	0.057
learning	5-10 years	2	5.7	4	5.5	1	4.5	1.205	0.057
	>10years	2	5.7	3	4.1	1	4.5		
	None	4	11.4	6	8.2	3	13.6		
Having remote learning training	Yes	29	82.9	22	30.1	3	13.6	4 259	0.021*
	No	6	17.1	51	69.9	19	86.4	4.258	0.021*
	Bad	2	5.7	3	4.1	1	4.5		
	Acceptable	14	40.0	27	37.0	10	45.5		
Description of internet	Good	10	28.6	32	43.8	5	22.7	1.136	0.061
501 1100	Very Good	9	25.7	11	15.1	6	27.3		
	Excellent	0	0	0	0	0	0		

\*Significant at p <0.05. \*\*Highly significant at p <0.01. Not significant at p>0.05  $X^2 = Chi$ -square

#### Table (8): Correlation between the Studied Variables (N=130).

	1	2	3	
1 Total lifestyle assessment				
1. Total mestyle assessment	р			
2. Total staff perception toward the impact of the	r	0.814		
crisis on education p		0.000**		
3. Total staff preparedness toward educational	r	0.743	0.508	
crisis management	р	0.000**	0.001**	

(\*\*) Statistically significant at p<0.01. r Pearson correlation

#### Discussion

The COVID-19 pandemic posed severe difficulties to Egypt's higher education system, forcing a shift from traditional in-person learning to a virtual format. Transitioning physical university courses to an online platform posed a specific and immediate challenge. Preliminary data suggests that the pandemic has exacerbated learning deficits and inequality. In order to mitigate and counteract these adverse long-term impacts, it's necessary to launch programs aimed at recuperating lost learning, safeguard the funding for education, and prepare for potential future crises by focusing on a "build back better" approach. (**Rapanta et al.**, **2020**).

The study aimed to evaluate education crisis management preparedness among faculty of nursing staff at Damanhur University during pandemic COVID-19.

As regards to personal data, the current study presented that the majority of the faculty of nursing staff were females. As regard their academic degree, less than one third of them are assistant lecturer, less than half of them are from urban area. Almost three quarters of them didn't have educational crisis management training, less than half of them don't know about presence of ongoing educational crisis management training. The potential reason for this could be that in Egypt, nursing studies were primarily targeted towards women, not men. As a result, there were fewer male faculty members in the nursing departments. This aligns with the findings from the study conducted by Wafaa, and Ghonem, "2017" who reported that about three quarters of the faculty of nursing staff were females and living in urban areas, and majority of them didn't have educational crisis management training.

Concerning, total lifestyle assessment of the faculty of nursing staff during pandemic COVID-19. The current result displayed that more than half of them have negative effect, while more than one third of them have positive effect, this result was in agreement with **Pérez-Rodrigo et al., "2021"** who performed study and showed that more than half of the studied sample reported COVID-19 have negative effect on health life style.

Regarding, pandemic COVID-19 impact on instructional delivery, the present study illustrated that mean value (x S.D) of the faculty of nursing staff who reported "Practical courses in an online course are among the most difficult for nursing staff member" is highest than the mean value who mentioned "It is harder to administer theoretical courses through online learning".

Furthermore, this result could be due to design and organizational weaknesses resultin g from the rapid shift to online teaching in response to the pandemic, the lack of necessary infrastructure (e.g. digital equipment, internet connection) and technical barriers as well due to the lack of immediate feedback rather than teachers being a ble to assess student understanding during online lessons. Additionally, online teaching requires many different skills and competencies than traditional teaching.

This finding was in agreement with study by **Mukhtar et al., "2020"** who showed that faculty members through online learning modalities they were unable to teach and learn practical and clinical work more than theoretical course.

As regards to impact on evaluation process, the result of current study illustrated that the highest mean of who stated "Transparency of Assessment (Assessment tasks are well defined and clear to the learner." This outcome consistent with study by **Horvitz et al.**, "2015" who illustrated that highest percentage of the studied sample reported that "Assessment tasks are well defined and clear to the learner".

The study found that the faculty of nursing staff had varying perceptions on the impact of crisis on research, economic pressure, and international staff mobility. The highest mean was related to the deprivation of universities, research centers, and laboratories which are crucial for the development of new ideas. On the other hand, the lowest mean was associated with psychological stress, anxiety, tension, or depression, leading to decreased scientific collaboration among research participants.

Furthermore, economic pressures, the highest mean of them who stated, "Purchasing public health testing for addressing health and safety concerns". As regard international staff mobility, it was cleared that the highest mean was recorded for the variable "Staff perception of the value of studying abroad for their working" but the lowest mean of them stated that " The crisis affect the possibility of safety and legal status of staff".

These results were consistent with study **Zalat et al., "2021"** who concluded that most of the studied staff members reported that " Deprivation of research facilities, universities, and labs that foster the growth of novel concepts and employees' perceptions of the benefits of studying overseas for their careers ".

Concerning, total perception of faculty of nursing staff toward the impact of the crisis on education, the present study displayed more than one third had moderate perception of the faculty of nursing staff towards the impact of the crisis on education, while more than one quarter had high perception of the faculty of nursing staff towards the impact of the crisis on education. This outcome may be attributable to the COVID-19 pandemic's urgent need to "move online," which has increased the stress and burden for university faculty and staff, who were already finding it difficult to reconcile their duties to teaching, research, and service. This result was in agreement with result of Mohamed et al., "2021" who illustrated that more than one third of the studied sample had moderate perception towards the impact of the crisis on education.

Concerning, the effect of pandemic on education process. The present study demonstrated that about three quarters of the faculty of nursing staff reported negative effect on instructional delivery, evaluation process. Moreover, more than two thirds and majority of them reported negative effect on academic achievement and understanding of student, respectively.

This result contraindicated with study performed by Khlvstova et al., "2022" who concluded that majority of the studied sample reported that positive effect pandemic on instructional delivery, academic achievement and understanding of student. This may be justified by, the necessity of online learning during the pandemic has driven the adoption and integration of technology in education. This has led to the development and utilization of various digital tools and platforms that enhance instructional delivery and evaluation processes. Also, enhance flexibility in learning and the shift to online instruction has expanded access to educational resources for students. Furthermore, the pandemic has prompted faculty staff to explore alternative assessment methods beyond traditional exams such as project-based assessments, online quizzes, and multimedia presentations.

As regards to effect of pandemic on education process among the faculty of nursing staff, the current study illustrated that more than three quarters of them had negative effect of COVID-19 on education process. This result might be due to the faculty may be confronted with challenges to create learning resources; lack of supplies, training, and planning for remote teaching before pandemic, lack of access to technology and the internet or inadequacy of the technological formats used for students with special educational needs; lack of knowledge and skills for the integration of technology in teaching, economic hardship.

This outcome in same line with study by **Kumar et al., "2021"** who reported that most of the studied faculty staff had negative effect of COVID-19 on education process. Conversely, with study by **Hoq, "2020"** who showed that most of the studied academic member had positive effect towards pandemic on education process (**Kumar et al., 2021 and Hoq, 2020**). This is justified by the pandemic crisis was the reason for the widest experimentation in online education. Additionally, the pandemic has necessitated faculty of nursing staff to think outside the box and develop creative initiatives to overcome the limitations of virtual teaching. They had to re-plan and adapted education processes, adjust methods and curricula, design materials, and diversify media, formats, and platforms used for teaching.

Related to knowledge of the faculty of nursing staff about educational crisis management, the present study illustrated that the highest mean of them who mentioned "I have previous exposure to this topic "educational crisis management". Also, the highest mean of them who informed that "I know referral contacts in case of a crisis situation". As well, the mean of them who stated, "Educational crisis management is the sole responsibility of the faculty", whilst the lowest mean of them mentioned "Crisis come in many shapes and sizes". This outcome accordance with Saide & Sheng, "2021" who proved that most of the studied sample had knowledge about having previous exposure to this topic "educational crisis management" and "Educational crisis management is the sole responsibility of the faculty".

Related to attitude of the faculty of staff about educational nursing crisis management, the results of the current study; it was illustrated that the highest mean was recorded for the variable "I consider myself prepared for the management of education crisis." In addition, the highest mean of them who mentioned that "There is enough awareness on crisis and crisis that could effect on the educational system among the university educators". Furthermore, the mean of them who informed that "I would feel confident in my abilities as an educator in management of education crisis", whilst the lowest mean of them mentioned that "As a university educator, I consider myself prepared for the management educational crisis".

This result might be due to the notion that having access to equipment alone is insufficient for effectively managing remote learning. Hence, it becomes crucial to proactively plan and ensure the availability of both administrative and technical tools. Additionally, it is important to disseminate information pertaining to the equipment, staff qualifications, and electronic content availability. Moreover, sufficient communication and leadership skills are essential for overseeing this project amidst the ongoing crisis. This can be achieved by deploying a competent and trained team operating from different locations to ensure the smooth and high-quality execution of the work." These findings matched with **Samawi et al., "2021**" who represented that the educational crisis management requirements attitude that are at high levels, where the planning domain was ranked first with the highest mean, followed by leadership skills.

Regarding, readiness to practice assessment of the faculty of nursing staff on educational crisis management. The highest mean of them who mentioned "All staff receives orientation and training for crisis management.", though the mean of them who informed that "My coursework enables me to be ready to practice in the settings of crisis". As well, the lowest mean of them who stated that "I need to be more trained on educational crisis management plan".

This findings in same line with study by **Paliwal, & Singh, "2021"** who showed that the highest mean score "All staff received orientation and training for crisis management". Though the mean of them who informed that "My coursework enables me to be ready to practice in the settings of crisis".

Regarding, total preparedness of the faculty of nursing staff toward educational crisis management, the present study illustrated that more than half of them have moderate knowledge. As well attitude assessment, near to half of them have ambivalent attitude. Additionally, two fifths of them have moderate readiness to practice assessment. Moreover, more than half of them have moderate as regard total staff preparedness. This result in agreement with study **Abdelaliem et al.**, " **2022**" who reported that more than half of them have for them have moderate as regard total staff preparedness.

As regards to relationship between demographic characteristics of faculty of nursing staff and their total perception toward the impact of the crisis on education, the present study revealed that a statistically significant relation is found between total perception and their experience in educational crisis management. Also, with their educational crisis management training and with having remote learning training a statistically significant relation exist with presence of ongoing educational crisis management training.

These finding matched with study performed by **Ebner et al., "2020"** who showed that there was a significant relation was found between total perception and their experience in educational crisis management. Also, with their educational crisis management training. This may be attributed to faculty staff's perception of the crisis and its impact on education can affect their readiness to adapt and respond effectively, influence their motivation levels. Also, If faculty staff perceive the crisis as having a significant negative impact on education, they may expect additional resources and support to address the challenges effectively.

Concerning, the relation between demographic characteristics of faculty of nursing staff and their total staff preparedness toward educational crisis management. The current result revealed that there was a highly statistically significant relation between total staff preparedness and their experience in educational crisis management, educational crisis management training and presence of ongoing educational crisis management training.

As well, a statistically significant relation exists with having remote learning training. No statistically significant relation was found with their gender, residence type, experience in remote learning and with description of internet service. These results matched with study by Mobrad et al., "2021" who illustrated that there was a statistically significant between relation total staff preparedness and their experience in educational management, crisis educational crisis management training (Mobrad et al., 2022).

## **CONCLUSION**

The global impact of COVID-19 on education has been profound and far-reaching.

The pandemic has disrupted educational systems worldwide, leading to school closures, learning loss and significant challenges for students, educators and parents. The shift to online learning has exacerbated existing inequalities in access to education. Furthermore, the pandemic has highlighted the importance of digital literacy and the need for robust infrastructure to support distance learning. The long-term consequences of COVID-19 on education are still unfolding.

Moreover, the findings of this study revealed that faculty of nursing staff perceived a high overall level of negative impact of the pandemic COVID-19 on the education program. Additionally, the results indicated a highly statistically significant relationship between the total perception of faculty staff and their experience in educational crisis management, their educational crisis management training and their remote learning training.

## **RECOMMENDATIONS**

Based on the current study findings the following recommendations are proposed:

- 1. Provide comprehensive training to faculty of nursing staff in online teaching methods.
- 2. Develop crisis management plan in place that outlines procedures for responding to emergencies.
- 3. Investigate the integration of technology into educational settings and its accessibility among diverse student populations.

# **REFERENCES:**

- Agu CF, Stewart J, McFarlane-Stewart N, Rae T. COVID-19 pandemic effects on nursing education: looking through the lens of a developing country. Int Nurs Rev 2021; 68(2):153-8.
- Al-Ziftawi NH, Elamin FM, Mohamed Ibrahim MI. Assessment of Knowledge, Attitudes, and Readiness to Practice Regarding Disaster Medicine and Preparedness Among University Health Students. Disaster Med Public Health Prep 2021; 15(3):316-24.

- Ammar A, Brach M, Trabelsi K, Chtourou H, Boukhris O, Masmoudi L, et al. Effects of COVID-19 Home Confinement on Eating Behaviour and Physical Activity: Results of the ECLB-COVID19 International Online Survey. Nutrients 2020; 12(6).
- Asgari A. In the Search of Management and Planning principals: International Congress of Crisis Management in Disasters. Tehran: Tehran University; 2007.
- Coombs WT. Parameters for crisis communication in a digital age. J Busin Contin Emerg Plan 2014; 7(4):327-38.
- Ebner M, Schön S, Braun C, Ebner M, Grigoriadis Y, Haas M, et al. COVID-19 Epidemic as E-Learning Boost? Chronological Development and Effects at an Austrian University against the Background of the Concept of "E-Learning Readiness". Future Intern 2020; 12(6):94.
- Fajri C, Mawadati S. Manajemen krisis pemerintah kabupaten kulon progo. J ASPIKOM 2018; 3(4):783-97.
- Farghaly Abdelaliem SM, Baghdadi NA, Al Anizi AS. A Cross-sectional Study About Nurses' and Physicians' Experience of Disaster Management Preparedness Throughout COVID-19. Disaster Med Public Health Prep 2022; 17:e125.
- Hoq MZ. E-Learning During the Period of Pandemic (COVID-19) in the Kingdom of Saudi Arabia: An Empirical Study. Am J Educ Res 2020; 8(7):457-64.
- Horvitz BS, Beach AL, Anderson ML, Xia J. Examination of Faculty Self-efficacy Related to Online Teaching. Innov High Educ 2015; 40(4):305-16.
- Khamis Mohamed L, Mostafa Eid W, Hamdy Abou Ramadan A. Effectiveness of Nurse Managers' Political Skills on Preparedness and Response Activities during Coronavirus Disease 2019

Outbreak. Egypt J Health Care 2021; 12(4):28-46.

- Khlystova O, Kalyuzhnova Y, Belitski M. The impact of the COVID-19 pandemic on the creative industries: A literature review and future research agenda. J Bus Res 2022; 139:1192-210.
- Kılcı F, Kara BY, Bozkaya B. Locating temporary shelter areas after an earthquake: A case for Turkey. Eur J Oper Res 2015; 243(1):323-32.
- Krishnamurthy S. The future of business education: A commentary in the shadow of the Covid-19 pandemic. J Bus Res 2020; 117:1-5.
- Kumar A, Sarkar M, Davis E, Morphet J, Maloney S, Ilic D, et al. Impact of the COVID-19 pandemic on teaching and learning in health professional education: a mixed methods study protocol. BMC Med Educ 2021; 21(1):439.
- Mobrad A, Almorairi HM, Khan AA, Al-Wathinani A, Alotaibi R. Perception and Attitude of Medical Staff in the Saudi Red Crescent Authority Toward their Preparedness for Disaster Management and Response. Disaster Med Public Health Prep 2022; 16(4):1580-6.
- Mukhtar K, Javed K, Arooj M, Sethi A. Advantages, Limitations and Recommendations for online learning during COVID-19 pandemic era. Pak J Med Sci 2020; 36(Covid19-s4):S27-s31.
- Naser WN, Saleem HB. Emergency and disaster management training; knowledge and attitude of Yemeni health professionals- a cross-sectional study. BMC Emerg Med 2018; 18(1):23.
- Ncube A, Chimenya GNT. Hospital disaster emergency preparedness: A study of Onandjokwe Lutheran Hospital, Northern Namibia. Afr Safety Prom 2016; 14(2):1-17.

- Paliwal M, Singh A. Teacher readiness for online teaching-learning during COVID– 19 outbreak: a study of Indian institutions of higher education. Interact Technol Smart Educ 2021; 18(3):403-21.
- Pérez-Rodrigo C, Gianzo Citores M, Hervás Bárbara G, Ruiz-Litago F, Casis Sáenz L, Arija V, et al. Patterns of Change in Dietary Habits and Physical Activity during Lockdown in Spain Due to the COVID-19 Pandemic. Nutrients 2021; 13(2).
- Roux-Dufort C, Roussillon S, Laroche H. Crisis management and communication. In: Madu CN, Kuei C-H (eds). Handbook of Disaster Risk Reduction & Management. London: Springer; 2018. 389-406.
- Saide S, Sheng ML. Knowledge explorationexploitation and information technology: crisis management of teaching-learning scenario in the COVID-19 outbreak. Technol Analysis Strateg Manag 2021; 33(8):927-42.
- Saidemehr S, Geravandi S, Sahebalzamani M, Mohammadi MJ. The effect of education on awareness of nurses about disaster management. J Torbat Heydariyeh Univ Med Sci 2015; 2(4):52-46.
- Samawi F. Educational Crisis Management Requirements and its Relation to using Distance Learning Approach: A Cross-Sectional Survey Secondary Stage Schools in Al-balqa'a Governorate during Covid-19 Outbreak from the Perspectives of Teachers. Turk Online J Distanc Educ 2021; 22(3):196-212.
- Savoia E, Preston J, Biddinger PD. A consensus process on the use of exercises and after action reports to assess and improve public health emergency preparedness and response. Prehosp Disaster Med 2013; 28(3):305-8.
- Seeger M, Ulmer R, Novak J, Sellnow T. Post-Crisis Discourse and Organizational Change, Failure and Renewal. J Organiz Chang Manag 2005; 18:78-95.

- Sellnow TL, Seeger MW. Theorizing crisis communication. New York: John Wiley & Sons; 2013.
- Usher K, Mayner L. Disaster nursing: A descriptive survey of Australian undergraduate nursing curricula. Aust Emerg Nurs J 2011; 14(2):75-80.
- Veenema T. Essentials of disaster planning. In: Veenema T (ed). Disaster nursing and emergency preparedness for chemical, biological, and Radiological terrorism and other hazards. New York: Springer Publishing Company; 2007. 1-22.
- Wafaa A, Ghonem N. Knowledge and Awareness of Disaster Preparedness among Faculty of Nursing Members: Designing of Disaster Management Guidelines. Int Nurs Rev 2017; 65(1):41-53.
- Wunderlich R, Ragazzoni L, Ingrassia PL, Corte FD, Grundgeiger J, Bickelmayer JW, et al. Self-Perception of Medical Students' Knowledge and Interest in Disaster Medicine: Nine Years After the Approval of the Curriculum in German Universities. Prehosp Disaster Med 2017; 32(4):374-81.
- Zalat MM, Hamed MS, Bolbol SA. The experiences, challenges, and acceptance of e-learning as a tool for teaching during the COVID-19 pandemic among university medical staff. PLoS One 2021; 16(3):e0248758
- Arora T, Grey I. Health behaviour changes during COVID-19 and the potential consequences: A mini-review. J Health Psychol 2020; 25(9):1155-63.
- Raaper R, Brown C. The Covid-19 pandemic and the dissolution of the university campus: Implications for student support practice. J Prof Cap Commu 2020; 5(3/4):343-9.