

Students' Perception of Disaster Management in Benha University

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Abstract

Background: Disaster is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts. **The aim: the study aimed to** evaluate students' perception of disaster management in Benha University. **Research design:** Descriptive research design was utilized to conduct this study. **Setting:** The study was conducted at 14 Faculties at Benha University in Qaliubya Governorate. **The Sample:** A systematic random sample was used in this study, it includes 400 students from 4627. **Tools:** A structured interviewing questionnaire to assess the socio- demographic characteristics. Students' knowledge about the disasters, Students attitude about disaster, an observation checklist to measure A: observe the presence of facilities and precautions for preventing the disaster. **B:** Observe the plan used for preventing disaster in the faculty. **Results:** 65.5% of the students were aged 18- < 20 years, 56.8% of them were female, 40.3% of the students had incorrect knowledge about meaning of the disaster, 50.5% of the students had average knowledge, 56.5% of them had average attitude, 42.8% of them had an average practice, 54.5% of the facilities had good facilities, and 53.3% of them had a good plan. **Conclusion:** There was a highly statistically significant relation between knowledge, practices and attitude and general characteristics in age and sex, but there were no statistically significant relation between knowledge and general characteristics in exposed to the crisis. There was no statistically significant relation between the knowledge and the practices, but there was a highly statistically significant relation between the knowledge and the attitude. **Recommendations:** Health education program should be given to students about the disaster, its causes, classification and disaster management.

Key words: Disasters, students, Knowledge, Practices & Attitude.

Introduction

Every country is at the risk of exposure to some types of disaster, whether natural or man-made. In order for a country to be prepared for any kind of disaster, the local residents must also be aware of how they can

effectively participate in preparing for a disaster, mitigating potential impacts of a disaster and having the recovery operation after a disaster (*Gebbie & Qureshi, 2012*).

Disaster is any occurrence that causes damage, economic destruction, loss of human life, deterioration in health and health services on a scale sufficient to warrant an

extraordinary response from outside that affected community or area.” A disaster is the product of a hazard such as earthquake, flood or windstorm coinciding with a vulnerable situation, which might include communities, cities or villages (*The Disaster Management Act, 2008*) disaster is” a catastrophe, mishap, calamity or gave occurrence affecting any area, arising from natural or man- made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, or degradation of the environment, and is of such a nature magnitude as beyond the coping capacity of the community of affected area“(WHO, 2010).

Disaster management includes four phases : mitigation, preparedness, response and recovery Mitigation includes any activity taken to prevent occurrence of the disaster whenever possible (*Maurer &Smith, 2009*).Preparedness is defined as activities and measures taken in advance of an event to ensure effective response to the impact of hazards (*WHO ,2012*). Response is the point at which actions are starting to save lives, property, and the environment and to prevent secondary harm. During the recovery phase efforts are starting to restore the community to normal (*JCAHO, 2003*).

Disasters strike without warning in areas often unprepared for each event, it is essential for all emergency services personnel to receive a foundation in the practical aspects of preparedness and response Emergency staff has an integrated role in disaster management. All disasters follow a cyclical pattern know as disaster cycle, which describes four reactionary stages: preparedness, response, recovery, and mitigation/ prevention. Nurses have a role in each part of this cycle .As an active member of their community; emergency nurses should take part in mitigation and preparedness to the hospital, local, regional levels. Once disaster strikes their role continues into the response and recovery phases (*Gregory & Ciottone, 2006*).

However, disaster management is everybody’s business. The impact on the lives and livelihood of peoples as well as damage to infrastructure are huge. The communities must be more proactive towards preparedness and reduction of risks during disasters natural or man-mode.People will depend a lot on the resources and the traditional knowledge to be prepared in terms of subsistence studied (*Seynaeve, 2006*).

One of the most effective mechanisms for a country to be prepared for a disaster is by conducting education and public awareness programs at the local community level. Public awareness in disaster management is a process of training and empowering the population through sharing knowledge and information about the various types of disasters and their potential risks as widely as possible so that people act appropriately when a disaster happens (*Carley & Jones, 2010*).

Members of a community are the immediate victims of adverse effects of a disaster. They have the best knowledge about their local surroundings in terms of the most disaster-prone areas, the demography of their community and their social and traditional organization. It is important to have the capacity to cope with the impacts of a disaster and be involved in the development of disaster management activities right from the initial planning stages (*Newport & Jawahar, 2009*).

Nurses, by virtue of their professional education, are experts in the nursing process(assess, plan, implement, and evaluate), steps that closely parallel the phases of disaster management (mitigation, planning, response, and recovery).The strategic position of nurse within the hospital environment represents a vital resource to those planning comprehensive crisis management for hospital (*Doyle & Loyacono, 2006*).

Significance of the problem:

Through the clinical observation after the revolution of the 30th of June 2013, the faculties were the most setting exposed to sudden disaster of civil disturbance (Violence terrorism), rapid flow rate of the students dropped with crush accident, gun shots and different degree of burn. All the staff of disaster management should be able to deal with the incident and lead to multitude of hazards that can adversely affect the safety of the students, whole organization and general welfare of the students, doctors and the staff, in additional to that readiness of the organization and preparedness for disaster management in the emergency casualty faculty of a crucial need (*World Health Organization, 2013*).

Aim of the study:

The aim of the present study is to evaluate students' perception of disaster management in Benha University.

It will be done through:

- 1- Evaluating students' knowledge of disaster management to detect the students need.
- 2- Evaluating students' knowledge about practice of disaster management to detect the students need.
- 3- Evaluating students' attitude of disaster management to detect students need.
- 4- Developing health educational guidelines for them about disaster management.

Research question:

- 1- Is there is a relation between general characteristic of students and their perception (knowledge, attitude & practices) regarding disaster management?

- 2- Is there is a relation between students knowledge, attitude and their practice?

Subjects and methods:

Research Design:

A descriptive research design was utilized in the present study.

Setting:

The study was conducted at 14 Faculties at Benha University in Qaliubya Governorate including Faculties of Commerce, Arts, Law, Medicine, Veterinary Medicine, Engineering, Science, Applied Arts, Computing, Education, Specific Education, Agriculture, Physical Education and Nursing.

Sampling:

Type: A systematic simple random sampling was intended to be used to achieve study aims. However, some operational limitations were confronted.

Size: Students which represent 25% of students in this year from each faculty of Benha University. The total sample were included 400 students.

Certain criteria: First year students, age range between 18-21years, both gender and accepted to participate in the study.

Tools of data collection:

It consists of two tools:

I:A structured interviewing questionnaire: It was developed by investigators, based on reviewing related literatures, and written in simple Arabic Language: It comprised of three parts to assess the following:

First part: General characteristics of the studied sample. It included questions about age, sex, training courses and exposed to the crisis.

Second part: -1- Students' knowledge about the disasters: Included questions about the meaning of the disasters, types of disasters, classifications of disasters, factors can lead to disasters and phases of disasters.

2- Included students' knowledge about different types of disasters. Which includes:

A: - The students' knowledge about the fire disaster

It included questions of fire disaster, degree of burn and measures are used to prevent the it.

B: -The students' knowledge about the earthquake disaster. Included questions about; meaning, causes, severity and types.

C: -The students' knowledge about the hurricane disaster: It included questions about; meaning, the intensity scale, types, and the damages.

D: -The students' knowledge about the torrent disaster: It included questions about; meaning, and the ways to prevent the torrent.

E: -The students' knowledge about the human disaster: It included questions about; meaning, the meaning of the terrorist, types, ways to combat it.

F: -The students' knowledge about the wastes of the disaster: It included questions about; reasons of the wastes, types of the wastes, sources of the wastes, the effects of the wastes, and the ways to get rid of the wastes.

Scoring system:

A correct and complete answer for a single question has been assigned a score of

(2) while the correct and incomplete answer was assigned a score (1), and incorrect answer was assigned a score (0).

The total knowledge scores were categorized into three levels as follows:

Good= $\geq 75\%$ of the total score.

Average= $50 < 75\%$ of the total score.

Poor= $< 50\%$ of the total score.

Third part: Knowledge about practices through asking questions of the students' about the intervention types of disasters it included seven items:

A: The students' practices about the fire disaster: It included questions about: calling others, calling number of the emergency, switch off the power and gas, compile the fire away from the fire, close the doors and the windows of fire place, do not open the door felt with heat with in it, put assign on the door that the place with fire, go to safe place to detected them for the peoples to go out from it, putting mark on the places that free from peoples, using fire extinguisher or the water to reduce the fire until team arrived, provide first aid for the injured, determined burn degree, remove the injured persons away from the fire, sure the air way open, remove the clothes with attention, remove the jewelry to prevent the pain, putting vaseline or clean dressing to prevent the infection, transferring the injured to hospital when the fire from the second or third degree of burn, and transfer the injured persons according to the severity.

B: - The students' practices about the earthquake disaster: Included questions about switch off the power of electrics and away source near from the gas and oxygen, disconnect the air conditioning that present in the place, calling with the number of the emergency, avoid using any flammable materials, keep the doors opening, calling for the earth quack team, standing away from the

routs and the balconies, gathered the students in the middle, avoid using the elevators because that may be the rezones of the falling during earthquack disaster, using the evacuation plan, evacuation the peoples according to the priorities, and sit under the table when unable to get out.

C: - The students' practices about the hurricane disaster: It included questions about, switch off the power of electrical and away sources of gas and oxygen, avoid using any flammable materials, try to good conduct, standing away from the windows and the balconies, try to calmed the friends, making the first aids, moved the victims to calm and safe place, observed the vital signs, keep the breathing healthy, determine the degree of awareness, calling for ambulance in the severity of the fainting.

D:- The students' practices about the torrent disaster: It included questions: calling for the civil defense, switch off the power of electrical, don't touch or move the things or electrical things, don't deal with the power electrical that containing of water, don't eat the food contain the water of torrent, using the instructions for the other governmental, follow tips when using the roads, evacuate the lower floor of the house, prevent the swimming in the water of the torrent helping the others, and try to fill every slot in the house by silicone or gray.

E:- The s students' practices about attack on the places and falling numbers of peoples: It included questions about; calling for the policy, calling for the near numbers for help, sharing the security to maintenance for the safety the place, disperse in valuable hardware, avoid place with disturbance, lie on ground in the place with disturbance, give the immediately care for the patients, classified in accidents according to the priorities, take the vital signs, help the patient to move for the emergency room, determine the degree of awareness, keep the patient privacy, deal with burns and fracture, observe the bleeding, know the good position for the

patient, making the C P R, open the air way, making the dressing for wounds, deal with spinal injuries, and recorded the case to prevent the repetition

F:- The students 'practices about the wastes: It included questions about; reporting for disposal wastes, educate the others about the hazards of the wastes, share in courses about the safety of occupation, encourage for good using and recycling for wastes, activate for the good practices for public health and safety of occupation, participate in preservation of nature, Aware with legistalations for control of environmental pollution , and government system for geared of wastes according to the types.

G:-The students knowledge about the plan used to prevent disaster in the faculty:-it included questions about,disaster management plan in the faculty and reviewed annuually.

Scoring system:

Each done practice scored as one point and not done practice scored as zero.

The total practice scores were categorized into three levels as follows:

Good= $\geq 75\%$ of the total score.

Average= $50-<75\%$ of the total score.

Poor = $<50\%$ of the total score.

Fourth part: include the students attitude about disaster: it included questions about, confused, disaster on psychological status, try to restrain ,provide psychological support to others and the spirit of encourage for positive effect and find solutions for exit from the disaster safely.

Scoring system:

Students response score has divided to three level ,never scored as zero point,

sometimes scored as 1 and always scored as 2 in case of positive items and vice versa in case of negative items .the total attitude score were categorized into three levels as follows:

Positive=>75% of the total score.

Neutral=50<75% of the total score.

Negative=<50% of the total score.

11 An observation checklist designed to measure the following:

A: Observation the presence of facilities and per cautions for preventing the disaster: It included questions about; list numbers of the worker in faculty to call them when occurred the disaster, present agent environment in every faculty, presence of wireless between the faculty and the police, presence of guiding signs for the number of emergency, presence of audio or visual alarm working when occur the disaster, presence team of disaster in the faculty, signs of direction for exit from the faculty, sings of no smoking fire fighting equipments (fire extinguishers– water hoses), medical clinic provide first aid as needed, clear instructions used when occurred the disaster, evacuation door open and closed from the inter and the key placed in known pace for the worker.

B: Observation the plan used for prevent disaster in the faculty:- It included questions about; disaster management plan in the faculty and reviewed annually .commission disaster training plan for workers on dealing with disaster .training on the worker in the faculty into the management plan.continuous developing of disaster management plan .training course and seminars .testing the degree of the achievement of training course.

Scoring system:

Each present facilitates scored as one point and not present facilitates practice scored as zero.

The total facilitates scores were categorized into three levels as follows:

Good= $\geq 75\%$ of the total score.

Average= 50-<75% of the total score.

Poor = <50% of the total score

Content validity:

The tools ascertained by a group of experts (no. 5) In the branch of Community Health Nursing, who reviewed the tools for clarity, relevance, comprehensiveness, applicability and easiness for implementation and according to their opinion, minor modifications were done.

Field work:

Students consent was obtained before starting the collection data. Data were collected from the study sample was take the period from the beginning of October 2014 up to the end of December 2014. The investigator visited the selected faculties from 10 am to 12 pm. 4 days per week (Sunday, Monday, Thursday, and winds day a day) to collect the students' data. The field work was performed in the following sequence: study aim and importance was clarified to the cooperation. The investigator explained the study purpose to each sample. The average time needed for the sheet was around 20-35 minutes. The average number interviewed were 10 students per week depending upon an understanding and response of the students.

Ethical consideration:

- Permission to conduct this study was obtained from the faculties. At the beginning of the interview, each potential subject was informed of the aim of the study. The investigator emphasized that participation in the study is voluntary, and highlighted the importance of responding within the specified period. The investigator reassured participants that confidentiality would be maintained.

Administrative Design:

To carry out the study, the necessary approval was obtained from the Director of Benha University Faculties. Official letters were issued to them from Dean of Faculty of Nursing at Benha University after explaining the aim of the study to obtain permission for the collection of data. An oral consent was taken from students for permission to participate in the research process.

Preparatory phase:

Extensive review of the current and past available national and international references related to the research title was done, using textbooks, articles, magazines and internet search was done. This was necessary for the investigator to be acquainted with and oriented about aspects of the research problems as well as to assist in the development of data collection tools.

Pilot study:

The pilot study was carried on (10%) of the study sample; they were excluded from the study sample. The pilot study was to assess the tools applicator, feasibility, clarity and time needed to fill each sheet. Necessary modifications were done, each sheet lasted about 20- 35 minutes to be filled.

Statistical Design:

Data were analyzed using the statistical software Package for Social Science (SPSS) version 18. Qualitative data were expressed as numbers and percentages. Chi-square test (X^2) was used to examine the relation between qualitative variables. Person correlation (r) was used to detect associations between quantitative variables.

Significance levels were considered as follows:

- P- value < 0.05 Significance
- P- value > 0.05 Not significance
- P- value < 0.001 Highly statistically significance.

Results

Table (1): Frequency distribution of studied sample regarding to general characteristics (n=400).

Socio-demographic characteristics	No	%
Age		
18- < 21	400	100.0
Gender		
Male	173	43.3
Female	227	56.8
Training courses or seminar of disaster		
No courses or seminar	12	3.0
Seminar	226	56.5
training Course	162	40.5
Exposure to crisis		
No	306	76.5
Yes	94	23.5

Table (1): Shows that, 100.0% of the students aged 18- < 20 years, 56.8% of them were female, 56.5% of the students had not receive any training courses about disaster, and 76.5% of them did not expose to any types of crisis.

Table (2): Frequency distribution of studied sample regarding to their knowledge about disasters (n=400).

Students' knowledge	Correct and complete		Correct and incomplete		Incorrect	
	No	%	No	%	No	%
Meaning of disaster	97	24.3	142	35.5	161	40.3
Types of disaster	126	31.5	126	31.5	148	37.0
Classifications of disaster	104	26.0	93	23.3	203	50.8
Factors that lead to disaster	107	26.8	108	27.0	185	46.3
Phases of disaster	97	24.3	142	35.5	161	40.3

Table (2): Shows that, 40.3%, 37.3%, 50.8% had incorrect knowledge regarding meaning, types and classified of disaster respectively. while 46.3% and 40.3% of them had incorrect knowledge about factors and phases of disaster.

Table (3): Frequency distribution of studied sample regarding to their knowledge about the fire disasters (n=400).

Students' knowledge	Correct and complete		Correct and incomplete		Incorrect	
	No	%	No	%	No	%
Causes	94	23.5	126	31.5	180	45.0
Types	104	26.0	93	23.3	203	50.8
Equipment is used to confront fire disaster	108	27.0	108	27.0	184	46.0
Degrees of burn	97	24.3	142	35.5	161	40.3
Measures to prevent fire disaster	130	32.5	126	31.5	144	36.0

Table (3): Describes that, 45.0% of the students had incorrect knowledge about causes of the fire disaster, 50.8% of them had incorrect knowledge about types of the fire disaster, 46.5% of them had incorrect knowledge about equipment used to confront fire disaster, while 40.3% of the students had incorrect knowledge about degrees of fire disaster, and 36.0% of them had incorrect knowledge about measures that prevent fire disaster.

Fig. (1): Distribution of the students regarding to their total knowledge about the disaster.

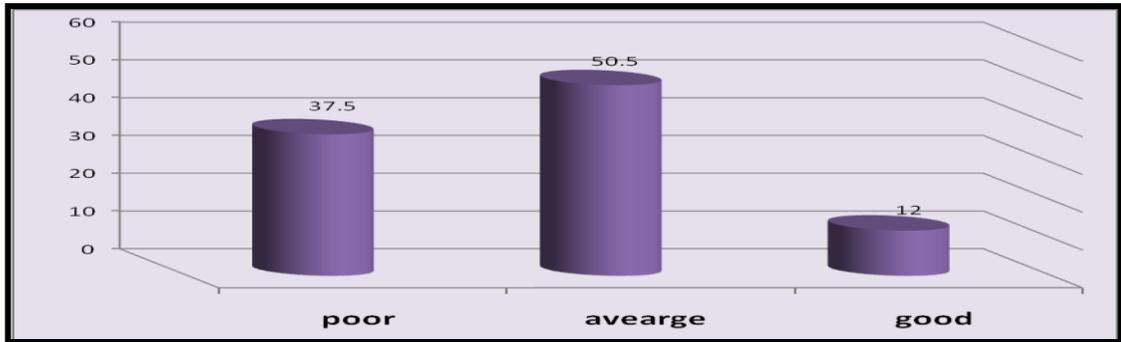


Figure (1): This figure shows that, 50.5% of the students had an average level of knowledge about the disaster, and 37.5% of them had a poor level of knowledge related to the disaster, while only 12% of them had good.

Fig. (2): Distribution of the students regarding to total score of attitude about the disaster

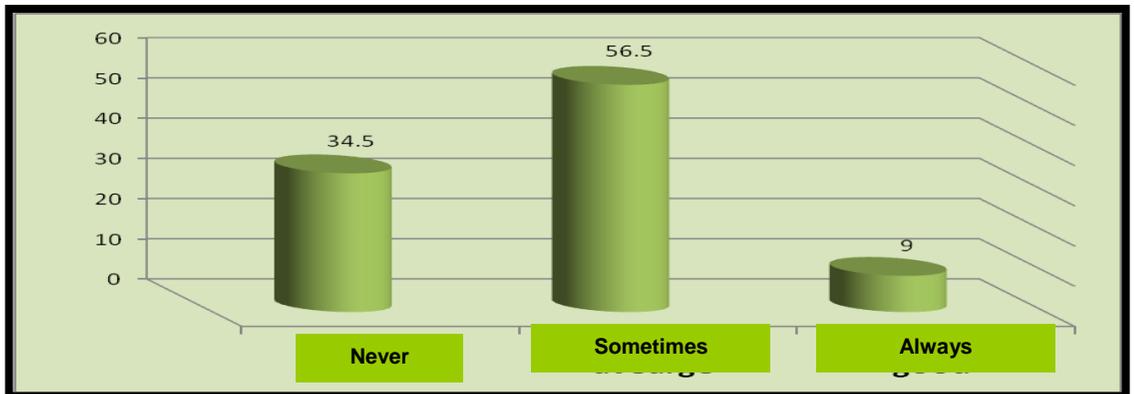


Figure (2): This figure shows that, 56.5% of the students had some times level of attitude about the disaster, and 34.5% of them had a never level of attitude about the disaster while 9% only had always level of attitude about disaster.

Fig. (3): Distribution of the students regarding to total score of practices about the disaster.

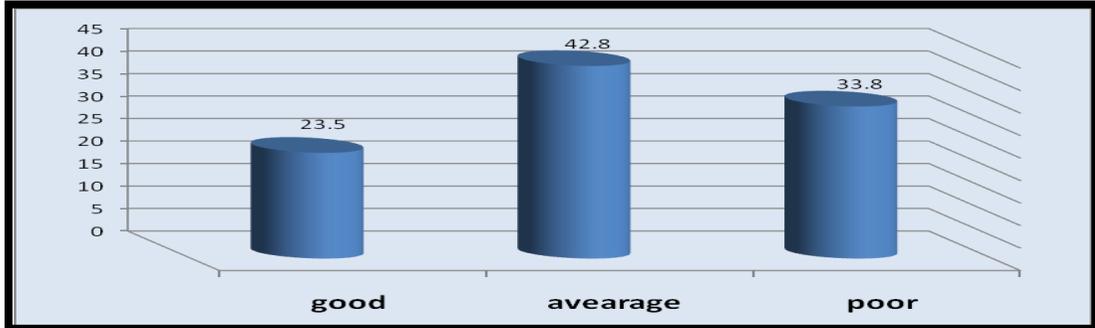


Figure (3): This figure shows that, 42.8% of the students had an average level of the practices regarding to the disaster, and 33.8% of them had poor level of the practices regarding to the disaster.

Discussion

Regarding to general demographic characteristics of the students, the present study revealed that the age of the studied subject was 18- < 21 year (Table 1). This may be due to this age the students attend university education in Egypt.

In relation to the sex, the present study revealed that more than half of the studied subject was females (table 1). This finding disagreed with Blanchar (2008) who reported that there were more males than females in his studied.

Concerning the exposure to the crisis, the finding of the present study revealed that more than two thirds of the studied subjects were not exposed to the crisis (table 1). This result disagreed with **Mustafa, (2003)** who founded the majority of his studied exposed to disaster; especially the fires which were the most of the disaster can be occurred in surround environment.

Regards to the knowledge of the students about the disasters, this finding in

the present study revealed that one third of the studied subjects had incorrect knowledge about the meaning of the disasters (table 2) This finding agreed with **Mekky (2011)**, who reported that the overall his study sample knowledge were low and awareness about disasters.

The present study, demonstrated that more than one third of the present study had incorrect knowledge about the factors that lead to the disaster (table 2). This may be due to that there is no health education concerned factors related to disaster.

[Concerning the students' knowledge the finding of the present study revealed that half of the studied subjects had incorrect knowledge about the types of fire disaster (table 3). These findings agreed with **Mustafa (2003)** who mentioned that the highest of studied subjects had a lack of awareness about the fire.

The present study demonstrated that the half of the study subjects had incorrect knowledge about the meaning of the earthquake disaster. This result agreed with **Escaleras et al. (2007)** who reported the

most of his study had knowledge about the earthquake disaster (table 4). This may be due to lack in the educational program that leads the student to know more about the earthquake disaster.

In relation to the knowledge of the students about the hurricane half of them had incorrect knowledge about the meaning the hurricane disaster (table 5). This finding disagreed with the study conducted by **Hallstrom & Smith (2005)** who found that the most of his studied sample had information about the hurricane disaster.

Concerning to the knowledge of the students about the torrent disaster, the half of them had incorrect knowledge about the meaning of the torrent disaster (table 6). This may be due to lack information about disaster because the student pessimistic to read about disaster.

Regarding to the knowledge of the students about the man- made disaster in the present study showed that the half of the students had incorrect knowledge about the meaning of the man-made disaster (table 7). This may be due to lack in their information.

Concerning to the knowledge of the students about the wastes of industry, the half of them had incorrect knowledge about the causes of this waste and ways to get rid of this waste (table 8). This may be due to they are away from the environment of the work in the community that lead to lack in their information.

Concerning to the practices of the students about the fire disaster the current study revealed that the more than half of the studied subjects did not go to a safe place away from the fire (table 9a). In a study done by **Stonuart (2012)**, who found similar results. This is may be due to there is no announced evacuation plan to students.

More than half of the students did not put vasline or clean dressing to prevent the

infection (table no 9b). This may be due to low awareness of them about infection control this finding agreed with **Masellis et al. (2010)** who found that the most of his studied group didn't put dressing on the wound to prevent infection in Palermo Mediterranean club.

The current study also showed that the more than half of the students didn't gather the student in the middle during the earthquake disasters (table 10a). This finding agreed with **Wirtz et al., (2014)** who found the majority of studied group, need information about the earthquake.

In relation to the practices of the earthquake disaster the present study showed that more than half of students didn't know they must sit under the table if there are not able to get out (table 10b). this finding agreed with **Hdgson (2009)** who made his studied on nurses in Hong Kong hospital This may be due to they are convinced with that they must get out to save their lives.

The present study demonstrated that more than half of the study subjects didn't avoid uses any flammable materials in the hurricane disasters (table 11). This may be due to they hadn't more information about the first steps during the hurricane disaster.

Concerning to the practices of the students about wastes of industries, more than half of the students did not try educating the others about the health dangerous of the wastes (table 14). This may be due to they did not have enough information about the severity of the wastes of industries this finding agreed with **Duong (2009)** who find the same results on his studied in south Australia schools. This may be due to lack of courses or training about wastes gets rid of.

Concerning the practices of the students during human disaster· the current study revealed that more than half of the studied subjects did not try to self control during the human disaster (table 15). This may be due to

there is no training for the students about self-control during disaster.

Regarding to the level of attitude about the disaster the present study reported that the most of the study subjects had level of attitude about the disaster (figure 2). This may be due to the lack of information of the students about the attitude.

Regarding to the total student' practices about the disaster the present study reported that more than one third of the study subjects had an average level of practices (figure 3). This may be due to the most of them had incorrect knowledge about the disasters.

Conclusion

In the light of the study findings and research questions it was concluded that: more than half the studied students were females, more than two thirds of the studied subjects were not exposed to the crisis, while, slightly one third of them had incorrect knowledge about the meaning of the disasters, concerning knowledge about man-made disaster, half of the students had incorrect knowledge about the meaning of the meaning of the man –made disaster. More than half of the studied subjects didn't try to self-control during man-made disaster; More than one third of the students had an average level of practices about the disaster. More over .There was a highly statistically significant relation between knowledge, practices and attitude and general characteristics in age and sex, but there were no statistically significant relation between knowledge and general characteristics in exposed to the crisis. There was no statistically significant relation between the knowledge and the practices, but there was a highly statistically significant relation between the knowledge and the attitude.

Recommendations:

In the light of the results of the present study, the following recommendations are suggested:

- Health education program should be given for students about the disaster and disaster management.
- The developed simplified and comprehensive Arabic booklet that including information about types of disasters and the importance of the disaster management and should be made available on the faculties.

Further studies regarding effect disaster management program for the students to improve their knowledge ,attitude and practices.

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