



Awareness of Family Physician Residents of their Roles in Disaster Health Management: A Cross-Sectional Study in Saudi Arabia

Fawaz Hassan Alamri^{1*}, Faisal Dhahi Aldahash¹ and Sa'ad alqahtani¹

¹*Department of Family Medicine, King Salman Armed Forced Hospital, Tabuk, Saudi Arabia.*

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Family physicians have a pivotal role in responding to the medical community's needs and have a crucial role in disaster health management. Family physicians have several tasks and duties during and after the disaster, such as event detection, critical information' collection and distribution, and rehabilitative activities. It is important to identify the level of awareness of the family physicians regarding their role in the management of disasters.

Aim: To assess the awareness of family physician residents of their roles in disaster health management, Saudi Arabia.

Methods: This study was cross-sectional; it was performed on Saudi family physician residents in family practice clinics and centers in Saudi Arabia. A self-administrated questionnaire has been sent electronically to the participants to investigate their awareness. IMB SPSS version 22 was used to analyze the collected data.

Results: This study included 400 family physicians; more than one-half 52.75% were in the age of 28-30 years old. There were 61.5% worked previously at hospital emergency services. A few percentages reported receiving training on disaster medicine management in the clinic, 38.5%. 47.75% reported willingness to train on disaster management. There was 71% of physicians had high knowledge regarding their role in disaster management.

Conclusion: There was high awareness among the family physicians regarding their role in the management of disaster with an acceptable attitude toward receiving training.

*Corresponding author: E-mail: Fawaz-memo@hotmail.com;

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1. INTRODUCTION

Family physicians had a pivotal role in their responding to the medical community needs due to the natural and/or man-made disasters [1]. Family physicians had a crucial role in disaster health management [2] as when they know persons at risks before a disaster strikes, they form essential health forces in the disaster management and implement a risk health management on a regional scale [2]. Additionally, when the disasters strike, family physicians are being at the front lines in their communities' responses [1]. During and after a disaster, family physicians take several tasks and duties, such as event detection, critical information' collection and distribution, intervention by triage, and rehabilitative activities [3].

Most family physicians as a group don't have an adequate training preprepared them for their role in disaster management, so they have limited experiences [4-6]. Additionally, most of them didn't have a proper disaster response experience before they are called to respond due to limited disaster training [7]. It was reported that the responsibilities and duties of family physicians in disaster management should be a definite part of their special training [2]. Therefore, more sufficient trainings on disasters management are required for family physician residents because they are being in contact with other units and to be ready for disasters by making a disaster plan [8]. Disaster trainings help family physicians to take a proper decision and overcome these circumstances [2]. As they could reduce or cancel the nonessential services, home visits, increase the use of telephone, emails, message Apps, and videos for consultation [9]. Therefore, the current study aims to assess the awareness of family physician residents of their roles in disaster health management, Saudi Arabia.

Yılmaz et al. [2] carried out a cross sectional study among family physicians who are fighting against COVID-19 in Turkey to assess their awareness level towards their role and duties before, during, and after disasters and to improve their awareness of disaster medicine and management. The study results showed that most of family physician residents (80%) stated that family physicians should have an effective role in disaster, therefore their knowledge level was reported as unsure. Approximately 83.3% of

the family residents didn't join a disaster drill before, 94.3% didn't participated in applying a disaster plan, and majority of them (97.7%) didn't work before in any disaster. Only 9.2% of the family physician disaster received training on disaster medicine. Therefore, the study authors concluded lack of information and experience about disaster health management among family physician residents. To improve and give a better outcome, the residents should receive more training, specialize in disaster medicine, ask question about the curriculum, and work voluntarily. Additionally, the education, level of knowledge, and responsibility had a positive effect on each other in a positive manner. Also, most of the residents showed their responsibility and the awareness regarding their role in a disaster management. The same study showed that during the COVID-19 pandemic, family physician had many duties in fighting against this pandemic, as they follow up patients, being the first contact line, and work to recover from destruction.

Another previous study also showed that most of family physician residents (73.8%) didn't participate in training programs about disaster medicine [10]. Sinha et al. [11] conducted a stud on the same issue among medical students and reported that medical students had a shortage in their knowledge (theoretical and/or practical) on disaster preparation and this might be attributed to an educational deficit which is considered as a major cause of disaster health management' failure in the future. These results agreed with other previous studies conducted in different countries which found that an adequate training programs didn't be provided for disaster health management [12,13,14]. Pekez-Pavliško et al. [10] reported that 50% of the family physician residents that all health professionals who received training on disasters and emergencies preventing and preparing stated that the training must be compulsory, these results are in line with [15]. Additionally, it was recommended that training sessions on disaster health management should be included in training programs and in the curriculum of the undergraduate medical students' education [11]. It was reported that there was a similar correlation between anxiety and disaster preparation [16,17] and most family physicians gain experience on disaster during disaster intervention [18].

1.1 Study Rationale

Family physicians are being in the front lines managing health disaster, but most of them didn't have a proper knowledge and experience about their roles in disaster health management due to limited disaster training. To the best of our knowledge, few studies investigated the awareness of family physician residents of their roles in disaster health management, Saudi Arabia.

1.2 Aim of the Study

This study aimed to assess the awareness of family physician residents of their roles in disaster health management, Saudi Arabia.

2. METHODS

Study design: A cross-section study.

Settings: Family practice clinics and centers, Saudi Arabia

Period: From 1 January to 31 November, 2020

Study population: Saudi Family physician residents

Participant's age: 21 years and above.

Inclusion criteria: The residents who are working in the family practice clinics and centers, who agreed to participate in the study.

Exclusion criteria: Participants who didn't meet the inclusion criteria (the participants who are being in another residency program, failure to complete the whole survey, refused to give informed consent).

Sample technique: A random sampling technique.

Sample size: The sample size was calculated by using the following formula = 385

Where n = sample size

Z = level of confidence (2 sided 95% confidence interval, $Z=1.96$ for 95% CI)

P = expected true proportion (0.5)= desired precision (5%)

(Taking into account the 40% non-response rate).

2.1 Study Tools

Across-sectional study was conducted among Saudi family physician residents aged > 21 years old. The study was performed using a self-administrated questionnaire that will be sent electronically. After the approval of the institutional review board (IRB), the participants were asked to sign the consent at the first page of the questionnaire and answer the questions. The questionnaire included questions regarding the demographic characteristics (age, marital status, educational level, economic status, occupational status, religion, number of children, type of the institutional previously worked at, living with spouse/children/spouse and children/alone/parents). The questionnaire included other questions about the awareness of family physician residents of their role in disaster health management.

2.2 Statistical Analysis

Data was analyzed using IBM SPSS, version 22. AP value lower than 0.05 considered significant. Numbers and percentages was used to presents all categorical variables.

3. RESULTS

Table 1) shows the socio-demographic characteristics of the study participants. A total of 400 family physicians have participated in this study; more than one-half 211(52.75%) were in the age of 28-30 years old, and the largest proportion was married 179(44.75%). There were 164(41%) who reported having no children. Regarding their working information, there were 246(61.5%) who worked previously at hospital emergency service, whereas 98(24.5%) worked at the community health center, and the fewest proportions worked at family health center 34(8.5%), and health center 22(5.5%). A few percentages reported receiving training on disaster medicine management in the clinic 154(38.5%), whereas 281(70.25%) reported receiving training in educational history. Most of the participants, 312(78%), reported the inclusion of disaster medicine/management lessons in specialty training. Less than one-half of participants, 191(47.75%), reported willingness to train on disaster management. There were 247(61.75%) who agreed to the request of including disaster management in the specialty training curriculum. Table1 shows the demographics and work information of participants as well as their training regarding disaster management.

There was a high level of awareness among the family physician residents in this study regarding their role in the management of disaster, where 71% had high knowledge, whereas 29% had low knowledge (Fig.1).

The role of our participants in disaster management is shown in table2. The largest proportion of participants reported that they are members of an institution fighting disasters 124(31%), participated in a disaster drill

94(23.5%), and participated in disaster planning 82(20.5%). More than one-half of physicians reported willingness to voluntary work if a disaster breaks out 214(53.5%). There were 129(32.25%) who agreed that family physicians could apply to a new sub-branch to be established with the focus of disaster medicine. Also, more than one-half reported willingness to specialize in disaster medicine 186(46.5%).

Table 1. Socio-demographic characteristics of the study participants (N=400)

Age		N	%
	24–27	124	31
	28–30	211	52.75
	>30	65	16.25
Marital status	Single	98	24.5
	Divorced/Widowed	123	30.75
	Married	179	44.75
Number of children	0	164	41
	1	83	20.75
	2	64	16
	3	89	22.25
Institutions previously worked at	Hospital Emergency Service	246	61.5
	Community Health Center	98	24.5
	Family Health Center	34	8.5
	Health Center	22	5.5
Receiving Training on Disaster Medicine/Management in the Clinic	Yes	154	38.5
	No	96	24
	I do not remember	150	37.5
Receiving Training on Disaster Medicine/Management at Any Point in Educational History (Before or After Graduation)	Yes	281	70.25
	No	35	8.75
	I do not remember	84	21
Inclusion of Disaster Medicine/Management Lessons in Specialty Training	Yes	312	78
	No	29	7.25
	I do not remember	59	14.75
Willingness to Train on Disaster Medicine/Management	Yes	191	47.75
	No	39	9.75
	I do not remember	170	42.5
The request of Including Disaster Medicine/Management in Specialty Training Curriculum	Yes	247	61.75
	No	153	38.25

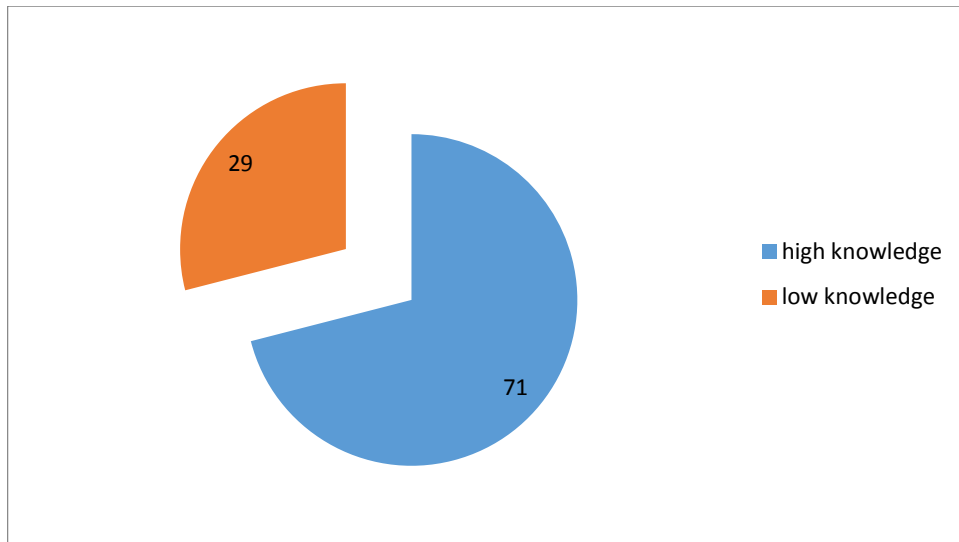


Fig. 1. The awareness of physicians regarding their role in disaster management

Table 2. The role of family physician residents in disaster management

Participating in disaster management and disaster medicine	N	%
Participated in a disaster drill	94	23.5
Participated in disaster planning	82	20.5
Worked as a physician during a disaster	76	19
Voluntarily worked during a disaster	24	6
Is a member of an institution fighting disasters	124	31
Willing to voluntarily work if a disaster breaks out		
yes	214	53.5
no	91	22.75
unsure	95	23.75
Can family physicians apply to a new sub-branch to be established with the focus of disaster medicine?		0
Absolutely no	91	22.75
yes	129	32.25
no	75	18.75
unsure	87	21.75
Absolutely yes	18	4.5
Willing to specialize in disaster medicine		
no	186	46.5
yes	214	53.5

4. DISCUSSION

In this study, most family physician residents had high awareness about their role in disaster management. There was a good attitude of physicians regarding disaster management, where the largest proportions of participants either were members of an institution fighting disaster, participated in the disaster drill, or

planning. More than one-half of physicians expressed their desire to voluntary work if a disaster breaks out and specialize in disaster medicine.

Unfortunately, a few percentages of physicians reported receiving training in disaster management in the clinic, and less than one-half of physicians had the desire to receive training.

However, most physicians reported receiving training in educational history and agreed to include disaster management lessons in specialty training. So, most of the family physicians in this study had high awareness regarding their role in disaster management and positive attitude toward disaster management, although they had low training in disaster management.

There were a few studies conducted on the current subject, and none was in Saudi Arabia, so this is the first study conducted in Saudi Arabia to focus on the awareness of family physicians regarding their role in disaster management. One similar study was from Turkey reported that the knowledge of the family physicians regarding the current subject was unsure. Moreover, only 9.2% stated that they received training on disaster medicine where they work, the large majority (83.3%) had never joined a disaster drill, and the large majority (94.3%) had never participated in making a disaster plan. Also, the large majority had never worked in a disaster [2]. The findings of the Turkish study were poorer compared to our findings, and the participants in our study showed a higher level of knowledge, attitude and received more training.

Another previous study [10] also reported that most family physicians (73.8%) didn't participate in training sessions about the disaster in the previous two years of the study. Providing training on disaster management seems to be a global problem as many studies reported that proper training wasn't provided for disaster health management in different regions in the world [4,5,13,18,19]. So, it is important to include disaster lessons in specialty training, as most of our participants reported.

Insufficient education and training seem to be a general and global problem; one study from Sudan reported that there was a lack of postgraduate training programs in disaster medicine [20].

In a previous Saudi study, the majority of emergency department staff participated in the study reported conduct of disaster drill at their hospital [21]. Another previous Saudi study assessed the training and education of nurses regarding disaster; it was found that the nurses of the emergency department had considerably low levels of knowledge in disaster management with low experience [22]. Another Saudi study

conducted on EMS students reported that students had weak to moderate knowledge, and they thought that the integration of disaster courses in EMS curricula combined with training would help in increasing their knowledge and preparedness to disaster management [23].

Although it was found that it is important to include disaster management education and training in medical schools, in a study included 30 medical schools from Saudi Arabia, it was found that there was a paucity of disaster medicine program. Most schools indicated a desire to implement training for the undergraduate programs, but there is a lack in the number of relevant professionals [25].

In Yemen, there was an overall insufficient knowledge of health professionals regarding emergency and disaster preparedness; only 32% had good knowledge, and physicians had better knowledge compared to other subgroups of health specialties. Moreover, only 41% didn't receive courses in disaster preparedness [25].

5. CONCLUSION

There was the proportion of the family physician residents in this study had high awareness regarding their role in the management of disaster; however, their attitude toward receiving training on the disaster was acceptable. This attitude can be attributed to the limitation in the time they have to attend training; however, they accepted that training is necessary and should be included in the curriculum.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s). Confidentiality was assured to all participants who participate in the study. The privacy and confidentiality of the data and study results was secured by restricting unauthorized access. The respondents received a brief description of the study and its objectives.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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