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Abstract

Background: Hospital preparedness enables the healthcare delivery system to save lives during emergencies that surpass the day-to-day capacity of existing response systems. The COVID-19 pandemic negatively affected all aspects of life worldwide, and in the Gaza Strip particularly.

Aims: We assessed the preparedness of 2 hospitals in the Gaza Strip for response to COVID-19.

Methods: An observational, analytical, cross-sectional study was conducted among 160 nurses and physicians between July 2020 and October 2021 at the European Gaza Hospital and the Turkish-Palestinian Friendship Hospital, 2 hospitals dedicated to the reception and care of COVID-19 patients in the Gaza Strip. Data were collected using a structured, self-administered questionnaire and a checklist. The data were analysed using SPSS, version 23. Frequencies and descriptive data were used to assess the variables. Inferential statistics such as ANOVA and t-test were used to determine the significance and differences between the variables. Cronbach's alpha was 0.903.

Results: The majority of the participants were nurses (77.5%) and they showed a high level of knowledge and training regarding the response to COVID-19 pandemic (73.4 %). Their perception of the preparedness of their hospitals in terms of work environment and availability of resources was average (63.6%). Around 70% perceived COVID-19 to have had a negative effect on their personal lives and work.

Conclusion: The preparedness level at the 2 hospitals was unsatisfactory (55.75%). Further research is recommended to assess the level of hospital preparedness from the viewpoint of other healthcare workers.

Keywords: COVID-19, preparedness, response, nurses, physicians, health emergencies, Gaza Strip

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Introduction

Background

In December 2019, a new coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), caused an outbreak that first emerged in Wuhan, Hubei Province, China (1).

The COVID-19 pandemic resulted in critical extra pressure on already weak healthcare systems, leading to impaired health status of affected populations, particularly those affected by recurrent humanitarian disasters. The virus spread to more than 182 countries and territories around the world (2). Countries ought to raise their capabilities for preparedness, alertness and response to the increasing number of new cases of COVID-19. There is no single perfect way to manage the crisis; all countries must, therefore, prepare their healthcare systems to respond effectively. Every country should conduct a precise assessment of the possible risks and carry out substantial, appropriate and timely actions to reduce COVID-19 transmission and its economic and social impacts (3).

The significant inadequacy of personal protective equipment (PPE) in most countries constitutes a major threat to the continuity of health care services for COVID-19 patients, therefore, it is essential for healthcare workers to have priority access to PPE so they can do their jobs safely and effectively (4).

The Israeli blockade, the internal Palestinian political divide, a chronic power deficit, and shortages of specialized staff, drugs and equipment are all factors affecting the ability of health systems in Gaza Strip to provide services during the pandemic (5).

Healthcare system in Palestine

The main parties providing health services in the Palestinian health system are the Ministry of Health, nongovernmental organizations, the United Nations Relief and Works Agency for Palestinian Refugees in the Near East (UNRWA), the military health services and the private sector. The total number of hospitals in Palestine is 83, of which 51 are in the West Bank, including East Jerusalem, and 32 in the Gaza Strip.

The Ministry of Health in the Gaza Strip has 13 hospitals, 16 belong to nongovernmental organizations, 2 to the Ministry of Interior and National Security, and 1 to the private sector. The total number of hospital beds in the Gaza Strip is 2943 (2240 belonging to the Ministry of Health, 526 to nongovernmental institutions and 177 to the Ministry of Interior and National Security). The Ministry of Health employs 3100 physicians, with 14.6 physicians per 10 000 population. There are 3682 nurses employed by the Ministry of Health, representing 25.1% of the total employees in the Ministry, with 21.2 nurses per 10 000 population. In 2018, 1 402 222 visits were made to emergency departments (6).

During the COVID-19 pandemic, the European Gaza Hospital and the Turkish-Palestinian Friendship Hospital were assigned to care for COVID-19 patients only.

Objectives

The main objective of this study was to assess hospital preparedness in response to the COVID-19 pandemic in the Gaza Strip. Specific objectives were to explore the status of hospitals' preparedness for COVID-19 in the Gaza Strip in terms of: hospital plans and their implementation processes; healthcare workers; equipment and materials; and the influence of COVID-19 on the personal lives and work of health care professionals. We aimed to make

recommendations for policy-makers towards improving preparedness in the hospitals.

Methods

Study design

We used an observational, analytical, cross-sectional design to assess the preparedness of 2 hospitals in the Gaza Strip to respond to the COVID-19 pandemic..

Study setting

The study was conducted at the European Gaza Hospital and the Turkish-Palestinian Friendship Hospital, both of which were used for the reception and care of COVID-19 patients only. The Turkish-Palestinian Friendship Hospital was already in existence but was not in operation; it was first opened to deal with COVID-19 cases in November 2020 (7). Data collection was carried out during the period 1 November–31 December 2020. The study participants were nurses and physicians who worked in the 2 hospitals.

Sample size

The estimated sample size was 200 physicians and nurses. The study sample was estimated according to the following formula (8). Sample proportion (p) was assumed to be 0.5, which is conservative and gives the largest possible sample size.

where: N = population size = 412, e = margin of error = 0.05, z = z-score = 1.92, p = sample proportion = 0.5.

The participants were selected using convenience sampling. Physicians and nurses working in the two hospitals who were prepared to receive and care for COVID-19 patients were eligible to participate in the study. Exclusion criteria were: volunteers, students, interns and workers in other hospitals which were not prepared to receive and care for COVID-19 patients, and specialists such as radiologists, laboratory technicians, physiotherapists and pharmacists. The data collectors could not contact some of the targeted population who worked in the intensive care units (ICUs) because of the COVID-19 preventive measures imposed in those departments, therefore, the final sample was lower than the calculated size. In all, we had 160 participants out of 412: 36 physicians and 124 nurses (Table 1). There were more nurses because nurses constituted the majority of those providing services to COVID-19 patients. There were 14 partial respondents (2 physicians and 12 nurses, partial response rate 7%) and 26 nonrespondents (4 physicians and 22 nurses, nonresponse rate 13%).

Study instruments

The data were collected using 2 tools. The first was a self-administered questionnaire, structured on a 5-point-Likert-scale where 5 signified the highest agreement and 1 the least agreement. This tool was developed by the researchers in English after reviewing the available literature, then translated into Arabic. The second tool was an observational checklist in the English language, which was adapted from the "Comprehensive hospital preparedness checklist for COVID-19" (9). This tool assessed healthcare providers, key contact points, procurement and stock management, human capacity, facility and materials, training procedures, hand hygiene, PPE and waste management, triage, first contact and prioritization, patient placement and patient flow in the facilities.

Ethical considerations

Ethical codes of conduct were strictly adhered to at all stages of the study, and confidentiality was maintained. Ethical approval was obtained from the Ministry of Health and the Helsinki Committee. A letter of approval was obtained from the general directors of the 2 hospitals, and participants signed a consent form to confirm their agreement to participate in the study.

Coordination, monitoring and quality control

A pilot study (n = 30) was conducted to test the adequacy of the research questionnaire, determine the time needed to complete it and identify areas of ambiguity. The questionnaire was shared with a panel of experts to assess its clarity and relevance to the objectives of the study. All comments were taken into consideration. The pilot study results were included in the final study results. Reliability was tested using Cronbach's alpha coefficient to determine the reliability and consistency of the survey. Cronbach's alpha for the questionnaire was 0.903.

Data collection

Data on preparedness of the 2 hospitals in response to COVID-19 were collected using the 2 tools described above, a self-administered questionnaire filled out by the participants and a checklist filled out by the researchers. Three trained data collectors were selected from the workers in each hospital. Participants were asked to fill out the questionnaire, which was distributed during their working hours (day, evening and night shifts). Data were collected during the period 1 November–31 December 2020. Each data collector was assigned to collect data during a particular shift; their role was to distribute the questionnaires and answer any of the participants' queries. Access to some areas in the hospitals was restricted, making data collection impossible in those areas.

Statistical analysis

The data were analysed using SPSS, version 23. The frequencies and descriptive data (mean, ranges, percentage, and standard deviations) were used to assess the research variables. Inferential statistics such as analysis of variance (ANOVA) and the t-test were used to determine significance and the differences between variables.

Results

Analysing the questionnaire

The distribution of the study participants from the 2 hospitals is shown in Table 1 . Approximately two-thirds of the participants were less than 30 years old (Table 2). More than half of the health workers dealing with COVID-19 cases were young people. The majority of study participants (84.4%) were males – there were fewer females working in the hospitals – and 77.5% were nurses. A higher proportion of the participants (72.5%) were from the European Gaza Hospital. This hospital had a higher participation rate because it had been opened and accredited as an epidemiology hospital at the beginning of the COVID-19 pandemic, before the opening of the Turkish-Palestinian Friendship Hospital. It had a greater bed capacity and more ICU beds than the Turkish-Palestinian Friendship Hospital. Less than 50% of our participants had 70% (good) (23).

The researchers recommend that the Ministry of Health should expedite the preparation of the Turkish-Palestinian Friendship Hospital to provide the best possible service to COVID-19 patients and reduce the burden on the European Gaza Hospital due to the high increase in the number of infected cases requiring medical care.

This study had some limitations. We used a convenience sampling method: this may be considered a source of selection bias. Only nurses and physicians were involved in the study, thus our sample did not represent all health care workers. However, nurses and physicians did comprise the greatest proportion of health care workers, had more contact with patients and were more affected by any change in the health system. Therefore, there is a need to assess the preparedness in these 2 hospitals from the perspective of other health care providers to get a clearer understanding of the situation. This may be considered sampling bias, which may undermine the external validity of the study (the ability of results to be generalized to all health care workers).

Data were collected using a self-administered questionnaire, which may be subjective and could reflect social desirability biases. To reduce this type of bias, the researchers used a checklist that was completed by themselves to assess preparedness in the 2 hospitals.

Conclusions

The participants showed a high level of knowledge and training regarding the COVID-19 pandemic (73.4 %). Overall, the level of the preparedness in the 2 hospitals was unsatisfactory. We recommend raising the level of preparedness in terms of equipment, resources and staff numbers (physicians and nurses).

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Competing interests: None declared.

Évaluation de la préparation à la riposte contre la COVID-19 dans deux hôpitaux de la bande de Gaza

Résumé

Contexte : La préparation des hôpitaux permet au système de prestation de soins de santé de sauver des vies lors de situations d'urgence qui dépassent la capacité quotidienne des systèmes de riposte existants. La pandémie de COVID-19 a eu des répercussions négatives sur tous les aspects de la vie à travers le monde, et en particulier dans la bande de Gaza.

Objectifs : Nous avons évalué l'état de préparation de deux hôpitaux dans la bande de Gaza pour la riposte à la COVID-19.

Méthodes : Une étude observationnelle, analytique et transversale a été menée auprès de 160 personnels infirmiers et médecins entre juillet 2020 et octobre 2021 à l'Hôpital européen de Gaza et à l'Hôpital de l'Amitié turco-palestinienne, deux hôpitaux dédiés à l'accueil et aux soins des patients atteints de la COVID-19 dans la bande de Gaza. Les données ont été recueillies au moyen d'auto-questionnaires structurés et d'une liste de contrôle. Elles ont été analysées à l'aide du logiciel SPSS, version 23. Les fréquences et les données descriptives ont été utilisées pour évaluer les variables. Des statistiques inférentielles telles que l'ANOVA et le test-t ont été employées pour déterminer la signification des variables et les différences entre elles. L'alpha de Cronbach était de 0,903.

Résultats : Les participants étaient majoritairement constitués de personnels infirmiers (77,5 %). Ces derniers ont fait preuve d'un niveau élevé de connaissances et de formation en matière de riposte à la pandémie de COVID-19 (73,4 %). Leur perception de l'état de préparation de leurs hôpitaux en termes d'environnement de travail et de disponibilité des ressources était moyenne (63,6 %). Ils étaient près de 70 % à considérer que la COVID-19 a eu un effet négatif sur leur vie personnelle et professionnelle.

Conclusion : Le niveau de préparation dans les deux hôpitaux n'était pas satisfaisant (55,75 %). Des recherches supplémentaires sont recommandées pour évaluer le niveau de préparation des hôpitaux du point de vue des autres agents de santé.

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[illegible] (77.5%) ([illegible]) [illegible] :

WHO EMRO | Assessment of preparedness for response to COVID-19 by two hospitals in the Gaza Strip

أظهروا مستوى عاليًا من المعرفة والتدريب بشأن الاستجابة لجائحة كوفيد-19 (73.4%).
وتبين أن تصورهم لمدى جهوزية مستشفياتهم من حيث بيئة العمل وتوافر الموارد متوسط
المستوى (63.6%). ورأى قُرابة 70% منهم أن مرض كوفيد-19 كان له تأثير سلبي على حياتهم
الشخصية وعملهم.

: كان مستوى الجهوزية في المستشفيين الاثنين غير مُرضٍ (55.75%). ويُوصالاستنتاجات
بإجراء المزيد من البحوث لتقييم مستوى الجهوزية في المستشفيات حسب وجهة نظر العاملين
الآخرين في مجال الرعاية الصحية.

References

1. Mcleod V. COVID-19: a history of coronavirus. Lab Manager, 16 March 2020 (https://www.labmanager.com/lab-health-and-safety/covid-19-a-history-of-coronavirus-22021, accessed 27 October 2022).
2. Coronavirus (COVID-19) global response. Geneva: UNICEF; 2020 (https://www.unicef.org/appeals/covid-2019.html, accessed 1 May 2020).
3. Critical preparedness, readiness and response actions for COVID-19. Geneva: World Health Organization; 2021 (https://www.who.int/publications-detail/critical-preparedness-readiness-and-response-actions-for-covid-19, accessed 27 October 2022).
4. Our response to the coronavirus COVID-19 pandemic. Geneva: Médecins Sans Frontières; 2020 (https://www.msf.org/covid-19-depth, accessed 27 Octover 2022).
5. COVID-19 emergency situation report 1 (as of 1200 hrs, 24 March 2020). East Jerusalem: United Nations Office for the Coordination of Humanitarian Affairs – occupied Palestinian territory; 2020 (https://www.ochaopt.org/content/covid-19-emergency-situation-report-1, accessed 21 November 2022).
6. Annual report 2018. Ramallah: Ministry of Health; 2019 (in Arabic) (http://www.moh.gov.ps/portal/wp-content/uploads/2019/07/MOH-Annual-Report-2018-7-7-2019.pdf, accessed 27 October 2022).
7. Ministry of Health opens accident & emergency department, and intensive care unit in Turkish Palestinian Friendship Hospital. Gaza: Ministry of Health – Gaza; 2020 (in Arabic) (https://www.moh.gov.ps/portal/□□□□□-□□□□□-□□□□-□□□□□□□□□-□□□□□□□□□-□/, accessed 27 October 2022).
8. Sample size calculator: understanding sample sizes. New York: SurveyMonkey [website]; (https://www.surveymonkey.com/mp/sample-size-calculator/, accessed 27 October 2022).

9. Comprehensive hospital preparedness checklist for coronavirus disease 2019 (COVID-19). Atlanta: Centers for Disease Control and Prevention; 2020 (https://www.cdc.gov/coronavirus/2019-ncov/downloads/HCW_Checklist_508.pdf, accessed 15 May 2020).
10. Infection prevention and control and preparedness for COVID-19 in healthcare settings: fifth update. Stockholm: European Centre for Disease Prevention and Control; 2020 (https://www.ecdc.europa.eu/sites/default/files/documents/Infection-prevention-and-control-in-healthcare-settings-COVID-19_5th_update.pdf, accessed 27 October 2022).

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11. Mahanta P, Deka H, Sarma B, Konwar R, Thakuria KD, Kalita D, et al. Knowledge, attitude, practice and preparedness toward COVID-19 pandemic among healthcare workers in designated COVID hospitals of a north-eastern state of India. Hosp Top. 2021 Aug 28:1–10. doi:10.1080/00185868.2021.1969872

12. Haghighi KF, Kouhi P, Amini M, Mohammadkarimi V, Sepehrpoor M, Hosseini SA, et al. Knowledge, attitude, and practice toward COVID-19 among healthcare workers in Shiraz, Iran. Shiraz E-Med J. 2020 Nov 13;21(12). doi:10.5812/semj.108872

13. Zhang M, Zhou M, Tang F, Wang Y, Nie H, Zhang L, et al. Knowledge, attitude, and practice regarding COVID-19 among healthcare workers in Henan, China. J Hosp Infect. 2020;105(2):183–7. doi:10.1016/j.jhin.2020.04.012

14. Maurya V, Upadhyay V, Dubey P, Shukla S, Chaturvedi A. Assessment of front-line healthcare workers' knowledge, attitude and practice after several months of COVID-19 pandemic. J Healthc Qual Res. 2022 Jan–Feb;37(1):20–7. doi:10.1016/j.jhqr.2021.07.004

15. Qadah T. Knowledge and attitude among healthcare workers towards COVID-19: a cross sectional study from Jeddah city, Saudi Arabia. J Infect Dev Ctries. 2020;14(10):1090–7. doi:10.3855/jidc.13083

16. Ogolodom MP, Mbaba A, Alazigha N, Erondu OF, Egbe NO, Golden I. Knowledge, attitudes and fears of healthcare workers towards the corona virus disease (COVID-19) pandemic in south-south. Nigeria. Health Sci J. 2020 Jun 4;19:1–10. doi:10.36648/1791-809x.s1.002

17. Alnazly E, Khraisat OM, Al-Bashaireh AM, Bryant CL. Anxiety, depression, stress, fear and social support during COVID-19 pandemic among Jordanian healthcare workers. PLOS ONE. 2021;16(3):e0247679. doi:10.1371/journal.pone.0247679

18. Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. Lancet Psychiatry. 2020;7(3):228–9. doi:10.1016/s2215-0366(20)30046-8

19. Ejeh FE, Owoicho S, Saleh, AS, Madukaji L, Okon KO. Factors associated with preventive behaviors, anxiety among healthcare workers and response preparedness against COVID-19 outbreak: a one health approach. Clin Epidemiol Glob Health. 2021 Apr–Jun;10:100671. doi:10.1016/j.cegh.2020.11.004

20. Özturan DD, Şahin AK. Levels of anxiety and coping with stress in healthcare workers during COVID-19 pandemic. Fam Pract Palliative Care. 2021;62–9. doi:10.22391/fppc.789890

21. Zawiah M, Al-Ashwal FY, Saeed RM, Kubas M, Saeed S, Khan AH, et al. Assessment of healthcare system capabilities and preparedness in Yemen to confront the novel coronavirus 2019 (covid-19) outbreak: a perspective of healthcare workers. Front Public Health. 2020 Jul 28;8:419. doi:10.3389/fpubh.2020.00419

22. Van Hoang M, Tran AT, Vu TT, Duong TK. Covid-19 preparedness and response capability: a case study of the Hanoi primary healthcare system. Health Serv Insights. 2021 May 25;14:11786329211019224. doi:10.1177/11786329211019224

23. Singh P, Singh S, Govindagoudar M, Chaudhry D, Vashist A, Vashist M. Assessment of pandemic (COVID-19) preparedness in a teaching hospital in northern India using available (CDC-Atlanta) checklist. J Family Med Prim Care. 2021 Jul;10(7):2619–24. doi:10.4103/jfmpc.jfmpc_2455_20

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