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Responding to the covid-19 in West Bank Palestine refugee camps: lessons and role of community engagement

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Abstract

Background Global unpreparedness was noted, where even high-income countries with their established healthcare systems could not cope with the Covid-19 pandemic. In the Occupied Palestinian Territory (OPT), especially in the Palestinian refugee camps, Covid-19 was an additional burden on multiple levels.

Objective The aim of this study is to understand the notion of Covid-19 responses in the West Bank refugee camps and the health system's ability to meet the needs of the refugees as well as the role of local community actors in the response.

Methods Qualitative data were collected through semi-structured interviews. In total, 27 interviews were conducted with popular committees in camps, professionals working at the Palestinian Ministry of Health in addition to local and international health-related non-governmental organizations (NGOs). Participants were contacted via phone calls, Zoom meetings and in-person, for one to one and a half hours maximum. Questions were about the impact of Covid-19 and the way the participants and their organizations responded to this pandemic.

Results Our findings state that wide-scale multilevel Covid-19 responses were conducted from different committees and institutions in the OPT. For example, the popular committees took part in distributing medicines, food parcels and hygiene kits, and the NGOs provided refugees with educational materials and psychosocial support. However, the overstretched Palestinian health system, the limited resources in addition to the poor coordination between health providers and poor follow up of the imposed restrictions, hindered the fast and effective response. Community engagement was a remarkable element which contributed to the successful deployment of response plans. This was demonstrated by the collaboration of the camps' local bodies in addition to the initiatives of the local community in camps.

Conclusion Covid-19 impacts were particularly pronounced for refugees where response efforts did not fulfil their needs. The study highlights the importance of preparedness, working with community organisations and designing interventions in a human-centred/community-centred way to increase the effectiveness of health interventions and responses.

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Introduction

Upon the spread of the SARS-CoV-2 virus and the declaration of the state of emergency by the World Health Organization (WHO), countries worldwide started responding to this new situation in several ways according to the stated guidelines [1]. Governments implemented physical distancing, lockdowns, Covid-19 testing and contact tracing in addition to travel restrictions trying to confront the pandemic [2, 3]. In a later stage, they conducted vaccination campaigns, as well, hoping to protect their populations [4, 5]. The response was multilevel as it required a contribution of different components of the health systems in addition to strong inter-sectoral collaborations [3].

Facing the pandemic was challenging for all the countries regardless of their socio-economic status. Italy, for example, could not prevent the occurrence of Covid-19 and its fast spread as its decentralized and fragmented healthcare system contributed to the delay and the inefficient response to the pandemic [6]. Low and Middle-Income Countries (LMICs) faced even additional burdens given their insufficient infrastructure and weak healthcare systems which led to the closure and/or allocation of certain health facilities in addition to a shrinkage, and even a cessation, of some health services [2, 7]. Moreover, the limited financial resources of LMICs made it difficult for them to continuously purchase the medical disposables highly in demand like personal protective equipment, masks and testing kits [8, 9]. For the same reason, their ability to perform Covid-19 tests, do contact tracings and allocate places to be used as quarantines was restrained [2]. Another challenge according to the LMICs was the difficulty in sticking to the imposed public health measures. Such countries are known for being crowded with large households which favours the transmissibility of the virus [9–11]. Thus, physical distancing was not easily deployed in these countries. In a later stage, LMICs faced some new challenges, which were related to Covid-19 vaccines; accessibility, procurement and vaccines hesitancy by the population [4, 12].

The Occupied Palestinian Territory (OPT) has experienced additional challenges due to being under the Israeli occupation, including political and geographic fragmentation and displacement [13]. In terms of surveillance, it was difficult to accurately count the number of Covid-19 cases in the OPT, as certain areas, such as area C and Jerusalem, are not under Palestinian sovereignty [14]. The overstretched and ill-equipped Palestinian health system was overwhelmed with this new situation [13, 15]. This system was not prepared for such an unexpected emergency crisis, especially as a lack of back-up medical equipment was evident [14]. The Israeli occupation and its control of borders hindered the timely receipt of medical donations to cover the needs of Palestinians during the pandemic [16]. Likewise, the geographical separation between the West Bank and Gaza complicated the transfer of these donations between these areas [15].

In addition to elderly people and those with comorbidities, vulnerable groups included socioeconomically disadvantaged people who could hardly cope with this crisis [13, 17]. In the OPT, compared to non-refugees, refugees living in West Bank refugee camps have been particularly vulnerable to Covid-19, and to the consequences of its responses, given their low socio-economic status and their living conditions including sanitation issues and unemployment. Many of the Palestinians became refugees following the 1948 Arab-Israeli war, with some who displaced again or for the first time in the 1967 Arab-Israeli war (or in between this period) [18]. Around 27.3% of Palestinians currently living in the West Bank are refugees [19]. According to the United Nations Relief and Works Agency for Palestine refugees (UNRWA), almost a quarter of 871,000 Palestinian refugee in the West Bank live in the 19 refugee camps situated there [20]. Living in a refugee camp means living in crowded conditions with limited privacy and limited infrastructure [21]. Furthermore, public spaces are very limited [22] and green spaces are almost rarely found. Refugee camps' infrastructure, such as roads, sewers and electricity, is inadequate [23]. With time, as the population grew, the area remained the same, thereby making refugee camps highly dense and compact. This is particularly important when it comes to water, sanitation, and hygiene (WASH) systems, which are critical for the pandemic [24]. This environment favoured Covid-19 transmissions and increased the refugee's vulnerability to the pandemic. Furthermore, despite the presence of health facilities within most of the camps, the pandemic had detrimental impacts on people's incomes and socioeconomic conditions, which is likely to have greater impacts on camp populations who are already more structurally vulnerable. Studies conducted in Palestine refugee camps in Jordan and Lebanon showed that Palestine refugees had less access to vaccination, advanced health services, poor WASH and socioeconomic conditions that made them more vulnerable to infection [25–27].

The Covid-19 pandemic raised questions about health disparities and inequalities and the way they contributed to Covid-19 responses. The extent to which the Palestinian health system was able to cope with this new

situation, particularly in the West Bank refugee camps, was unknown. Taking the same path selected by other countries, when it came to Covid-19 responses, did not guarantee the same results since each country has its own structure and conditions that need to be considered. A few studies specifically focused on the pandemic response within refugee camps in Palestine, though they were situation briefs and commentaries [13, 24]. Therefore, we found it crucial to focus on the lived experience of Palestinian refugees living in West Bank refugee camps during the pandemic and to gain a deeper understanding about the way these communities dealt with Covid-19 and the roles of local communities in pandemic response. Delving deeper also gave us additional insights into the health system and the role of community actors in meeting health and other needs during times of crisis. Our study aims to understand the nature of Covid-19 responses in the West Bank refugee camps, and especially the roles local communities played in the response, and the health system's ability to meet the needs of the refugees. This understanding is critical in expanding health system preparedness within refugee camps, especially given the structural vulnerabilities that refugee camp communities are exposed to.

Methods

This study utilizes qualitative research methods. We collected data using semi-structured interviews with different stakeholders who contributed to the Covid-19 pandemic response. These comprise high-level policy makers, health organizations managers, health providers, local authorities and community members. The participating health-related organizations were Palestinian Ministry of Health (MOH), World Health Organization (WHO) and United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA). Additionally, several local non-governmental organizations took part in our study as well. They included the Palestinian Medical Relief Society (PMRS), Palestinian Red Crescent Society (PRCS), Union of Health Work Committees (UHWC) and Juzoor for Health and Social Development. Since our target population is Palestinians living in West Bank refugee camps, camps' popular committees[1] and those working at local organizations in camps, like Youth Centres and Women Centres, participated in our study as well.

As for the health-related organisations, participants were recruited through a purposive sampling method based on their positions and relevancy to our topic. Invitations were sent to the organisations asking them to nominate interviewees in case there were more than one person working in a related department. Another method we used to recruit participants is through the interviews themselves as we asked the interviewee to recommend other relevant organisation and/or individual that had a great input throughout the pandemic. As for the participants from the popular committees, we compiled a list of heads of popular committees in each camp and contacted them to arrange interviews, which were conducted with the heads of popular committees and/or heads of local centres in camps. We prepared a semi-structured interview guide, based on the literature and our study objectives, and adjusted it for each set of our target groups and their organizations [28]. Our questions were mainly about the responses to Covid-19 and the ways different sectors cooperated in responding to the pandemic as well as their relationship with local communities. Moreover, the challenges faced and the ways they had been overcome.

All our interviews took place between April and July 2021 and lasted between one to two hours for each. We began collecting data as soon as we received the ethical approval for our study and ended data collection once we reached saturation based on our study objectives. The timing of the data collection was in line with our objective of understanding the pandemic response during the first year of the Covid-19 pandemic. All of the interviews were conducted in Arabic except one that was conducted in English language. The duration of the interview varied depending on the level of knowledge and experience the participant and was adequate to cover the main topics of the interview guide. Because of the pandemic, some of them were conducted remotely through phone calls and via the online platform "Zoom". Others were done in-person based on the requests of interviewees while abiding by covid-19 regulations set by the Birzeit University Pandemic Committee. Preventive health measures were taken into account while conducting this type of interviews; we wore masks, respected the distance with the participants in closed areas, and made sure the room was ventilated. The interviews were audio recorded and then transcribed verbatim for analysis. We managed our data using MAXQDA software and analysed it by using thematic analysis. The analysis was conducted by both authors. The codes were developed inductively, based on the participants' answers, then grouped into themes which were agreed on by both authors. Any differences in interpretation were discussed and resolved by both authors.

Ethical considerations

The study was approved by the Ethical Review Committee at the Institute of Community and Public Health, Birzeit University, reference number: 2021 (3–3). Prior to

[1] A camp's popular committee consists of a group of refugees that provide different types of services for other refugees aiming to meet their needs and improve their lives inside the camp.

scheduling interviews with participants from the MOH, UNRWA and WHO, we had to obtain written approval from the respective organizations. Before conducting each interview, we obtained a verbal consent from the participants to conduct and record the interview. Participants were assured of confidentiality of the information they provided us with, and the voluntary nature of their participation. The data from the interviews is stored on a secure network drive that is only accessible by the research team.

Results

Our results consist of three main themes: Covid-19 responses in West Bank refugee camps; the obstacles faced while responding to the pandemic; and the factors that facilitated the response. Each theme has its set of sub-themes, which are described in what follows.

Theme 1: Covid-19 responses in the West bank refugee camps

After thematically analysing our data, we ended up with five sub-themes related to the nature of Covid-19 responses in the West Bank refugee camps. These comprise: (1) how refugee camps were managed during the pandemic; (2) dealing with suspected and confirmed Covid-19 cases inside camps; (3) prioritization of health-related services for Covid-19 and non-Covid-19 patients; (4) supporting refugees during the pandemic; and (5) communication during the pandemic.

Crisis management inside refugee camps

Responding to Covid-19 was multilevel and, as reported by our participants, and involved coordination between various bodies in the response. Several bodies took part in responding to Covid-19 in the West Bank refugee camps, including the Palestinian MOH, WHO, UNRWA, several NGOs in addition to the camp popular committees and other communities formed inside the camps. However, in terms of the management and control of camps during the pandemic, our respondents from the camps' local centres highlighted the role the camps' popular committees played during the pandemic. In response to the Palestinian Government's request, the popular committees had formed an emergency committee with multidisciplinary subcommittees to fulfil the needs of refugees. This committee and its subcommittees consisted of volunteers providing social, medical and security services. These comprised disinfecting houses and streets of camps, distributing medicines, food parcels and hygiene kits, closing public areas where people can gather inside camps, and helping in the logistics when it came to transferring infected individuals from the camp to receive treatment in hospitals outside the camps. The emergency committee represented a bridge between the camp and external organisations. Through this committee, updates about Covid-19 in refugee camps were regularly communicated to the heads of governorates and to the Palestinian Ministry of Health. One of our respondents, who is from a popular committee, explained: "we formed an emergency committee that consisted of volunteers from the camp. These comprised members of the camp's popular committee in addition to the camp's local centres, the physician who is responsible of the camp's clinic and others. In total, we were 7 individuals. Consequently, 7 sub-committees were generated including health, security and social ones. Additionally, a subcommittee concerning financial affairs has also been established, and similarly, it included volunteers from the camp. So, we started working together to confront the pandemic".

One of the earliest actions taken by the popular committees in camps is the closure of camps' entrances. This means separating them geographically, aiming to contain the virus through preventing the movement to and from the camp. However, with regards to decisions and instructions, the emergency committees kept up with the Governors and the Palestinian Government in general, as they were a part of the Central Emergency Committees that were formed in West Bank governorates. One of our interviewees illustrated: "If we had a confirmed case in the camp, the whole camp would have been in trouble because the houses are next to each other. Therefore, we did our best to forbid the spread of the pandemic as we know that we will not be able to completely disallow it from happening in a way or another. We were able to close the local centres inside the camp, the schools, the entrances of the camp in addition to the commercial shops and coffee shops. In short, we closed the places where people could gather. A part of this plan was in line with the guidelines provided by the MOH and the Council of Ministries, whereas other parts were initiated by us [the popular committee]. For example, nobody asked us to close the camp's entrances, nevertheless, we did it".

The Emergency Committees inside the refugee camps consisted of around 15 individuals from the camps' popular committees, local centres, UNRWA's health clinic, camp directors, and local volunteers. These individuals were then grouped into subcommittees in order to perform on different aspects with regards to the fulfilment of refugees needs. These subcommittees comprised a health committee that was in charge of testing, home visits for patients in addition to medical consultations. Moreover, a security committee that was situated on camps' borders, a distribution committee that was responsible of distributing food parcels and disinfectants to refugees, a disinfection committee that disinfected streets, houses and any other infected places inside camps. Finally, a psychosocial committee that supported refugees psychologically

during the pandemic and helped them in reducing their pandemic-related panic and fear. Although each subcommittee was in charge of certain tasks, they overlapped and complemented each other responding to the crisis. For example, people working in the health committees in the camps took the responsibility of distributing food parcels which accelerated the response and widened the range of refugees receiving it.

Dealing with susceptible and confirmed Covid-19 cases

Camp residents with suspected symptoms were tested for Covid-19. During one of our interviews with a head of a local centre in a refugee camp, she explained: "when the doctor [from the health subcommittee] feels that a person has Covid-19 symptoms, he, along with his group, immediately goes to the susceptible person's house to do the test for the whole family". She added that the Emergency Committee made testing obligatory for those going inside and outside the camp. "At first, testing was on a daily basis in the camp. Later on, it was conducted twice a week", indicated the head of a popular committee of one of the refugee camps in the West Bank. It is worth mentioning that there were no testing centres in the refugee camps; susceptible refugees had to go to the MOH testing centres in the nearer governorates. However, one of our respondents, who is an UNRWA employee living in the camp, mentioned that the health subcommittee in camps, in collaboration with the MOH, started conducting tests in refugee camps to save time and to facilitate the process for refugees residing in these areas. He said that this decision came after an old woman, who was transferred to a hospital outside the camp, died of Covid-19 before even knowing that she tested positive for Covid-19. He added:

"We sort of changed the policy; we brought the testing centre to the camp(s). Therefore, we established the Covid-19 triage centre inside the camp. Professionals from the Preventive Medicine Department [at the MOH] started coming over for sampling. People were in panic [from testing]. So, along with the camp's physician [who is in charge of the UNRWA clinic at the camp] and one of our colleagues in the emergency committee, we went to do the test ourselves in order to encourage the local community to test".

Furthermore, certain local centres, inside refugee camps, were allocated to quarantine infected residents. One of our respondents from the Palestinian MOH indicated that different parties took part in equipping the quarantine centres in camps including the UNRWA and the MOH. Nevertheless, many of these centres were not used since refugees preferred to stay at their houses and among their families. However, many of our participants from the popular committees explained that patients were followed up during the pandemic through home visits and phone calls. Our UNRWA camp's director said: "We had volunteers from the Palestinian Red Crescent Society (PRCS), who were working with us, in addition to the Palestinian Medical Relief Society (PMRS) who followed up Covid-19 cases as well, in coordination with the physician in charge of the UNRWA medical clinic. They are no longer deferring cases to quarantine centres as there is no capacity there".

Additionally, our interviewees mentioned that refugees' families, that comprised an infected person, were able to get food parcels and hygiene kits, which were received as donations from local and international Non-Governmental Organizations (NGOs).

Prioritizing health related services for Covid-19 and non-covid-19 patients

Our respondents from the UNRWA mentioned that services, requiring direct contact with patients, were suspended. These included both the dentistry and physiotherapy clinics. However, other services continued to function. One of our interviewees from the UNRWA explained: "we did not stop the vaccination program. It kept functioning. However, we put some conditions. Of course, we have a triage centre in front of the clinic and there are nurses in charge of doing the tests and make sure the person is not in contact with infected people. Our programs did not completely stop, but we decreased certain ones in reference to the Covid-19 response plan, whether the government's or the UNRWA's. So even in terms of employees, we used to work in shifts in order not for everyone to get infected at the same time. During a certain period, we were afraid that the whole team will get infected, so we would have to bring a new team and we do not want to suspend the service because there are some people that are in need of it".

Moreover, people with chronic diseases got their medicines for three months instead of receiving monthly supplies. A family member was able to pick them up in front of the UNRWA's health clinic or they were delivered to patients' houses directly through local volunteers and popular committees. Likewise, patients with critical health conditions were provided with the health care they need, thanks to the camps' local communities[2]. One of our interviewees said: "we [the popular committee] provided the patients that regularly undergo kidney dialysis with suitable transportation, preventing any infections from occurring, to be able to carry out the dialysis according to the MOH haemodialysis schedule. We drove each one of them daily from and to their houses, in reference to their procedure's scheduled time. Also, those who

[2] A Camp's local community includes the camp's popular committee, the emergency committee and its sub-committees in addition to ordinary refugees living in camps.

had surgeries and needed to do wound changing, nurses went to their houses to help them out without the need to go out of home. Similarly, some of our services were allocated to people with disabilities who were not able to move".

Supporting refugees during the pandemic

Refugees were supported in different ways during the pandemic. One of them is psychosocial support. Our respondent from the UNRWA illustrated:

"We established the hotline and other lines so that our employees would be able to contact people [refugees] to check whether they need anything and what kind of aid they need. We did not wait until people phoned us because people were already frustrated. The situation required different types of interventions and different styles of work".

In terms of social support, our respondents from the local centres in the camps mentioned that the emergency committee provided the refugees with social protection, as indicated by our interviewee from the Women Centre at one of the camps. She said: "Regarding the social aspect, they calmed people down. You know, the rumours during the pandemic increased, so some individuals at the emergency committee were working on this".

Intra-community solidarity was evident in Palestinian refugee camps in the West Bank during the pandemic. Many of our interviewees, who live in the camps, emphasized the internal support inside the camps. For example, our participants reported that the local community, including both the popular committees and the ordinary individuals in the refugee camps, took part in the response in different ways. These included reaching out to Covid-19 patients and their families and checking on them, distributing food and hygiene parcels, identifying and supporting refugees in need, delivering medications to patients with chronic diseases, in addition to cleaning and disinfecting camps' streets and houses of patients. Moreover, the local centres in camps were used to serve the needs of the refugees during the pandemic. For instance, one of our participants from the Women Centre at one of the camps mentioned that certain rooms of the centre were offered to the popular committee to be used for quarantine purposes. Similarly, the Youth Centre at the same camp was transformed, at first, into a quarantine centre, which was then used as a treatment centre for refugees who could not go outside the camp to get the required health service. The head of the popular committee of this camp explained:

"In cooperation with the governorate [the closest to the camp] and some donors, we established the health centre. It is to be used permanently, but with a condition of functioning after the working hours of the UNRWA's clinic; after 3 pm, because the UNRWA's health clinic stays open until 2 pm or 3 pm. Also, this centre will be open on the days when the UNRWA's clinic is off".

Refugees, also, took part in equipping these centres. Healthcare professionals working there were volunteers from the camp. The head of the Youth Centre explained to us:

"We thankfully developed this health centre through peoples' efforts from all the areas. We did not buy anything on our own, but all what we did is that we informed people about the centre. Consequently, some people donated medical instruments including oxygen concentrators and blood pressure monitors [sphygmomanometers] and blood glucose monitors, whereas others donated medicines". Nevertheless, local initiatives were launched to increase the quantity of medical supplies received to confront the pandemic, especially where there were shortages in supplies and increases in needs and demands. One of our respondents from the popular committees said:

"We recently had an initiative to collect oxygen concentrators. The popular committee bought 5 devices whereas 7 devices were received as donations from individuals. Moreover, 7 to 9 devices will be received from several organizations. Although all these devices might not be sufficient, but they fulfil the needs of those who cannot afford to buy them".

Communication

Our interviewees reported that refugees received Covid-19-related information through several means, most commonly through social media, particularly via Facebook as this is the most frequently used, and easily accessed platform. All our interviewees, who took part in responding to the pandemic, mentioned that they shared updates and related information on their social media pages. Mosque speakers were used, as well, to inform camps' residents about the situation. Additionally, one of our interviewees, who is a physician, mentioned that he used to create videos and post them on his personal Facebook page, aiming to instruct people on how to deal with Covid-19 and, at the same time, he sought to reduce their Covid-19-related panic and anxiety. However, and because of the unavailable laws and regulations when it comes to social media and its users, it was a source of misinformation for people who could not differentiate between a credible and an uncredible information provider. As a result, the level of fear and panic elevated among refugees who were victims of incorrect news. Hence, the need of a psychological support increased as well, which proportionally raised the burdens on the Palestinian health system responding to the pandemic.

Theme 2: The obstacles

All our respondents confirmed that they faced several hurdles while responding to the pandemic. One of them is the lack of a "ready to use" emergency plan as explained by our interviewee from the Women Centre at one of the camps. She said:

"Maybe because it is a new situation that everyone is experiencing, from the president to the public. At first, there were stages full of confusion. Not from us [local centres], but from everyone. We all live a haphazard life here and we do not know what might happen with us. We lacked emergency plans to deal with disasters. In health-related disasters, you should have a plan indicating that people should do XYZ and everyone should apply this. This plan should have been set up already and known by the local centres and the civil society. Yet, we have not planned for anything!"

Our interviewees demonstrated that not having a plan to follow was challenging; trying to figure out the efficient ways to respond to the pandemic inside the refugee camps, and the bodies that should take part in this. Therefore, an emergency plan could have saved time, resources and lives.

Other obstacles included shortages in medicines, healthcare personnel and medical supplies. The head of the popular committee in one of the camps said: "Sometimes, we did not find medicines, face masks or disinfectants. Though most of the obstacles were material and not human ones [referring to the volunteers, in the camp, and their willingness to help]". Another interviewee from the popular committees explained:

"We thought that the UNRWA health clinic at our camp would fulfil the needs. However, the clinic provides services regarding mainly hypertension and diabetes [but not for other medical conditions]. This was one of the obstacles that added a burden on us; to provide people with the required medicines. Even the quantities of chronic medicines at the UNRWA's clinic decreased, so we had to consult the PRCS to provide the refugees with the medications in need".

With the reduction of health services in refugee camps, refugees with urgent health conditions, were not able to receive an immediate response inside camps. This applies to Covid-19 cases in camps as well. Confirmed cases had to be transferred to hospitals in neighbouring cities for treatment, which delayed the response. In fact, even before the pandemic, the UNRWA was facing a financial hardships after a shortfall in funding by the Government of the USA, which negatively affected the health services in the Palestinian refugee camps [29–31]. Therefore, the pandemic was an additional threat to the UNRWA's provided services and an additional challenge to keep their health services functioning. Additionally, the lack of capacity in Palestinian hospitals, that was demonstrated by the shortage in beds, Intensive Care Units (ICUs) and medical equipment, had further weakened the Palestinian health system and its ability to respond to Covid-19 efficiently [14].

Another obstacle was the gap between the increasing needs of refugees and the support available to cover them, that was largely insufficient. Moreover, the low socioeconomic status of refugees in addition to the financial crisis of the country. One of our respondents from a camp's popular committee explained: "In coordination with the Palestinian Authority and well-off individuals, we were able to respond to the refugees' needs. The economic situation of the Palestinian Authority was not that good. Nevertheless, they supported us [financially] because they are aware of the camps' situations".

Additionally, one of the difficulties were the unavailable treatment centres inside camps and the hard logistics when it came to transfer patients to treatment centres outside the refugee camps. Our interviewee from the Women Centre at one of the camps mentioned: "We lack two essential things in the camp. One of them is the ambulance. Some people died because of not having the ambulance on time. Ambulances should have arrived faster".

After the allocation of certain centres in camps for Covid-19 patients, our interviewees mentioned that the lack of governance was an obstacle; neither the MOH nor the UNRWA were officially in charge of them. Therefore, the popular committees in the refugee camps had to take control of several aspects with regards to Covid-19 responses in camps. Moreover, although quarantines were established inside camps to facilitate the isolation process of confirmed Covid-19 cases among refugees, these places were largely unused. That was because people did not want to be separated from their families. Hence, this leads to another obstacle, committing to social distancing as an imposed measure. Living closely by each other as an inter-connected community, residents inside camps found it difficult to commit to social distancing staying away from people around them.

Finally, as the pandemic progressed, the number of confirmed cases, inside the refugee camps, increased. During that time, refugees felt scared to even go to the MOH centres for testing. At the same time, while some members of the emergency committees and their sub-committees inside the camps started being infected and had to isolate themselves, other members started being cautious and hesitant about having to deal with Covid-19 patients as this will put them at risk of getting the virus and transfer it to people around them. In both cases, the human resources allocated for Covid-19 responses inside refugee camps have decreased, which was a challenging situation to overcome. The local community which comprised the popular committee in addition to the

local centres and volunteers inside the camps, continued responding to the pandemic, aiming to fulfil the refugees' needs during that time, regardless their limited resources which were decreasing with time. It was difficult to sustain the types of interventions deployed in response to the pandemic as time went by, given the shortcomings of health services, health workers and health centres inside camps, which happened concomitantly with the increase in the number of cases and the spread of the virus in addition to the increase in needs and demands on these services.

Theme 3: Elements that facilitated Covid-19 responses in the Palestinian refugee camps

Despite the obstacles, our interviewees reported some factors that facilitated the Covid-19 responding process. These included the refugees' awareness and understanding of the situation, which increased their cooperation in the first place. Being aware of the negative consequences of the pandemic, and being afraid of getting the infection and/or transmitting it, encouraged the refugees to commit to the Covid-19-related instructions. That what our interviewee from a camp's Women Centre illustrated saying: "There was a lot of cooperation [from refugees]. Honestly, it was a kind of fear and self-protection. When they [refugees] see those who are infected and read the pleas posted on Facebook by physicians and others in charge on the camp [like the popular committee], people respond".

Besides, many respondents reported the refugees' trust in popular committees and their actions. The latter comprised direct communication with camps' residents informing them about the situation and giving them instructions on how to deal with it. Additionally, taking part in delivering medicines, food parcels and hygiene kits to the refugees inside camps and being proactive by taking initiatives to fulfil the needs of the refugees during the pandemic. For example, providing refugees with financial assistances to compensate the lockdown's consequences. Our interviewee from one of the popular committees explained:

"We do not want to wait for someone to help us or make a plan for us. We are aware of our situation, and we should make our plan by ourselves and know the peoples' needs. Indeed, we know their needs. That's why we, first, formed the sub-committees".

In addition to the initiatives of the local community and the good coordination between responding bodies from inside and outside camps, professional networks of individuals in the emergency committee helped accelerating the response. One of our popular committees' interviewees clarified: "Luckily, the head of nursing in the West Bank was a head of the previous popular committee which facilitated the communication process. We are volunteers in these committees, and everyone has their job. My role is to deliver the popular committees' voice to stakeholders. Moreover, my colleague is in charge of informing the MOH about what is happening daily in the camp. Consequently, we are fortunate that we were able to contain the pandemic in the previous period".

A key example of this kind of community initiatives took place in al-Fawwar refugee camp[3], which exemplifies how intra-community solidarity worked efficiently during the pandemic and facilitated the response. Local centres at this camp suspended their usual activities and were allocated to serve the health of refugees living in the camp. One of those centres was transformed into a clinic where healthcare professionals, who were refugees living in the camp, worked voluntarily and served the community outside of the hours the UNRWA clinic was open. The idea emerged from the need of fast access to health services during the pandemic, knowing that ambulances cannot easily enter the camp and treatment centres are located away from the camp. Most of the medical supplies used in the centre were donations by affordable refugees living in the camp.

Despite being an obstacle when it came to committing to security measures, the close-knit social structure inside the camps helped in identifying those in need and fulfilling their needs. Our participants mentioned that, in addition to the list that contains the names of refugees inside the camp and their socioeconomic status, social relations helped in reaching those in need living in the same camp and helping them out during the pandemic. An interviewee from a camp's popular committee mentioned: "Apart from the popular committees, we have volunteers who are situated in different quarters in the camp. I mean, the camp's situation and its refugees are well known. People [refugees] know each other".

Moreover, an important element is the ability of the local communities in refugee camps to cope with the continuously evolving Covid-19 situation. The responses were efficient as they took into account the situation and its intensity, in addition to being performed within the local community.

Discussion

Our study focuses on the way the local communities in refugee camps directed the response during the Covid-19 pandemic. Consequently, the way they supported the Palestinian Health System during this emergency situation. Despite the imposed security measures that were carried out by countries worldwide, including the OPT, the specificity of refugee camps as places and the

[3] A refugee camp situated in the southwest of Hebron city in the West Bank, OPT.

sociodemographic characteristics of its residents made such measures ill-suited to be applied in such a context.

Challenges of imposed measures

Covid-19-related universal guidelines had focused on individual behaviours like physical distancing and regular hand washing, while importantly, did not take into account the conditions many people live under around the globe and overlook structural conditions and inequalities that determine access to proper housing, sanitation, water, and healthcare; inequalities that are often exacerbated in times of crisis and/or emergency [32, 33]. Social distancing was hardly deployed in such a place where strong social relations exist between residents. Likewise, complete lockdowns were not suitable for people working as employees or having small businesses living on daily-basis income, especially when it is the only source of income to cover the needs of these people and their dependents.

Our findings illustrate that although the imposed security measures were implemented to confront the pandemic, they negatively affected the refugees in West Bank refugee camps. Most of the refugees living in West Bank refugee camps are employees in public or private sector in addition to being daily-paid workers. With the increased levels of poverty in camps, lockdowns were an additional hindrance that menaced the financial situation of refugees. Since the needs were increasing during the pandemic, and the support received was insufficient, it was difficult for the refugees living in West Bank refugee camps to "stay at home". Our study goes along with several studies that stated the difficulty for refugees, residing in different countries, to stick to the imposed Covid-19 security measures, given their socioeconomic challenges including living in crowded places and economic insecurities [34–36].

Despite their aim of confronting the pandemic and protecting the population, these measures were hardly adhered to in refugee camps because they were not people centred. They did not take into consideration the needs of the population, the characteristics of their environments and the way they live. Physical and social distancing measures had negatively affected the life of refugees. Refugee camps are inter-related communities where people have strong social connections with each other. Therefore, responding to Covid-19 by being physically distant from each other was hardly deployed in refugee camps. Our interviewees explained that this affected the population psychosocially, especially certain groups like the elderly people and persons with disabilities who used to gather in specialized community centres that were closed during the pandemic. In normal situations, such groups cannot easily go out of camps, so these centres inside the camps are the main place to socialise out of their houses. Furthermore, the small-sized homes and crowding made it difficult for people to stay at home for a long time. The fact that houses are very close to each other inside the camps, which created limited space for privacy, made it challenging to commit to social distancing and, at the same time, increased the level of stress among refugees' families committing to this imposed measure.

A few studies highlighted Covid-19 responses in the OPT and illustrated the situation of refugee camps during the pandemic. Kaloti and colleagues described the structure of refugee camps, the living conditions in these areas and the way policymakers, including MOH and UNRWA, responded to the pandemic in these areas [24]. Furthermore, AlKhaldi et al. reflected on the way the Palestinian health system coped with Covid-19 especially while having an under-resourced baseline [13]. In line with our results, AlKhaldi et al. also explained that imposed measures as lockdowns negatively impacted Palestinians residing in refugee camps. Additionally, they mentioned the lack of governance and stewardship as a challenge for the health system, which also was indicated by our respondents. However, where they urged for a better collaboration and coordination between the parties in charge of Covid-19 responses in OPT, this was clear in the refugee camps as smaller connected communities. Responders from the refugee camps were aware of the situation of the camps and their available resources. Therefore, their collaboration enhanced the response process and enabled them to efficiently mobilise the available resources to fulfil the gaps driven by the needs of refugees, which were not as visible and well understood by others from outside the camps.

Local responses

The solidarity and cooperation between the head of community centres within camps, camps' popular committees, subcommittees, and the ordinary refugees in the local community, positively affected the refugees and the way Covid-19 was confronted in refugee camps. While this might be due to the sense of belonging the refugees have for their community, it also exemplifies an adaptability that draws on deep knowledge of the context and needs of community. This resilience and community cooperation within refugee camps in Palestine has been noted in other studies as well and where the authors argue that community mobilization of resources has helped in addressing needs [37]. In contrast, other interventions implemented by UNRWA and other agencies, which did not take the preferences of local communities into account were not successful. One of the interventions mentioned by respondents was the establishment of quarantine centres that were either not used at all or

underutilized because people did not want to be moved away from family.

The abilities of popular committees to anticipate risk and act to prevent its occurrence made people feel less panicked. That was demonstrated by closing the camps' entrances trying to contain the virus and to avoid its spread in refugee camps. Additionally, trusting the camps' popular committees and believing in their actions encouraged refugees to commit to their decisions and instructions. One of the main reasons behind this trust is that camps' popular committees are refugees themselves, hence, they were aware of the population's needs and circumstances. People within the camp already had a long-standing relationship with the popular committees in the camp, which respondents described positively. This baseline of trust, which had been developed well before the pandemic, made people more likely to heed the advice of the committees. Similar to what our study indicates, a review study showed that lack of attention to refugees' needs was one of the major gaps when it came to Covid-19 responses [38]. In addition to the camps' popular committees, the subcommittees that consisted of individuals who were familiar to the community of the camp, who were also from the camp itself, enhanced the level of refugees' commitment. The way community engagement helped mobilizing resources towards efficient Covid-19 responses were noted in other studies as well [37, 39–41].

Palestinian health system's role

The overstretched and under-resourced Palestinian health system had hardly coped with the pandemic. When it comes to health services accessibility, UNRWA primary health facilities are considered the main, and the only, sources for refugees residing in camps [29, 42]. In response to the Covid-19 pandemic, UNRWA had restricted people's access to their clinics by re-prioritizing the provided health services aiming to decrease the direct contact with people and, hence, protecting them against Covid-19 [43].

In its Health System Framework, the WHO illustrated the building blocks of a resilient health system. These include service delivery, health workforce, health information system, access to essential medicines, financing and stewardship and leadership [44]. Each component is essential to achieve a responsive health system, improvements in individuals' health and financial protection. Despite the limited resources, the way Covid-19 was responded to, inside refugee camps, demonstrates that a person's-centred health system will be able to survive in emergency situations. With the limited access to health services inside refugee camps and the inability of the UN to fully proceed with their services provision because of fund's suspension, the act of response to the pandemic came from the internal community itself, making efficient use of the available resources, which mitigate the risks on refugees. That was not only with regards to health, but also other types of risks including financial crisis and psychosocial issues, thanks to the contextual-related response. In emergency situations, timeliness is critical. For example, a delay in deploying the security measures had led to high mortality rates, such as the case of Italy which ranked the highest number of death globally in 2020 [45]. Governments, including the Palestinian Government, started responding to the pandemic using their available resources. However, with time, responding to Covid-19 became overwhelming and the situation went out of control as such resources have run out, which increased the pressure on the health systems. Therefore, our findings urge on the importance of using the lessons learnt from Covid-19 pandemic to build a resilient Palestinian health system that can adapt with new unstable situations, and which can confront any future crisis.

Lessons learnt

One of the lessons to be taken away of Covid-19 crisis is that trust in leadership enhanced commitment [3]. Policy makers should enhance the communication with the population and to make decisions in based on their needs. This experience affirms the potential importance of building a human-centred health system where the local community is engaged in the decision-making processes. Creating space for people to be involved and taking their needs into account will lead to efficient, more equitable responses and will create a sense of belonging and commitment to the taken decisions [46]. This will, therefore, reinforce a major building block of the health system; "leadership and governance."

Another lesson is that setting up a contextually relevant risk management plan, that takes into account local conditions and available resources, would increase preparedness for any upcoming unexpected future events. Hence, this would maintain the health system and keep it functioning sustainably in times of crises. Continuously updated statistics about the available human, medical and financial resources, and the way these resources are distributed in the OPT would help identify the shortcomings and address them in advance. Hence, this would contribute to building a resilient Palestinian health system.

Additionally, upgrading the health sector by increasing the health workforce and the available health services, in addition to facilitating the healthcare delivery, are one of the main lessons learnt by many countries worldwide upon the Covid-19 pandemic [3, 38, 47]. Despite the limited resources, the camps' local communities succeeded in mobilizing available resources towards an effective response. The local centres in camps need to be reinforced and supported by the government since they are in direct contact with refugees and their needs. It is also

essential to increase access to health services, for refugees living in West Bank refugee camps as a way to strengthen the Palestinian health system.

Responding to Covid-19 in West Bank refugee camps was challenging given the overstretched Palestinian health system. Nevertheless, community engagement in addition to the intra-community solidarity played an essential role when it came to Covid-19 responses. Using the lessons learnt from the pandemic will help build a robust and resilient health system that will prevent and/or efficiently manage any future emergencies.

Conclusion

The overstretched Palestinian health system did not adequately respond to the increasing needs of the people living in West Bank refugee camps, during the Covid-19 pandemic. Though, the intra-community solidarity was evident inside the refugee camps and played a critical role in the response despite the limited resources. A human-centred health system and a responsive risk management plan would be essential to build a resilient health system that will be well-prepared for any future crisis.

Strengths and limitations

According to our knowledge, this is the first qualitative Covid-19 study to be conducted specifically for West Bank refugee camps. The strength of our study lies in interviewing different parties that took part in responding to Covid-19. This means, understanding the response from different perspectives. Furthermore, interviewing people from the local community helped us explore what has, actually been done on the ground and introduced us to the hidden types of effective response or factors that facilitated the response. Although our study is specifically regarding the West Bank refugee camps, our results, and learnt lessons, could be applicable for other refugee camp settings. In terms of limitations, there was no scale to be based on when it came to assessing the fulfilment of refugees' needs during the pandemic; we relied on the experiences and perspectives interviewees, without having any raw data that can confirm claims. Furthermore, our study did not include people who were not involved in response efforts; their perspectives would provide a more complete picture of how the response was viewed and experienced.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12889-025-22451-7.

Supplementary Material 1

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Author contributions
WH conceptualized the research and wrote the research proposal. LS designed the topic guides for the semi-structured interviews and both LS and WH contributed to the data collection. LS transcribed the interviews and analysed the data. WH assisted in data analysis. Both researchers contributed to writing the paper.

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Data availability
Given concerns about anonymity and that participants did not explicitly consent to their data being shared outside of the research team, the raw data for the study is not publicly available. Requests for specific aspects of the data can be submitted to the research team and evaluated, where summary versions of the data may be provided.

Declarations

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

Ethical approval and informed consent statements
The study was approved by the Ethical Review Committee at the Institute of Community and Public Health, Birzeit University, reference number: 2021 (3–3). Verbal informed consent was obtained from participants, and confidentiality was guaranteed. Any other identifying information related to the participants' anonymity was removed. This study adhered to the Declaration of Helsinki..

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References

1. World Health Organization (WHO). COVID 19 public health emergency of international concern (PHEIC) global research and innovation forum: towards a research roadmap. Published Online Febr 11, 2021.
2. Olufadewa II, Adesina MA, Ekpo MD, et al. Lessons from the coronavirus disease 2019 (COVID-19) pandemic response in China, Italy, and the U.S.: a guide for Africa and low- and middle-income countries. Global Health J. 2021;5(1):56–61. https://doi.org/10.1016/j.glohj.2021.02.003.
3. Haldane V, De Foo C, Abdalla SM, et al. Health systems resilience in managing the COVID-19 pandemic: lessons from 28 countries. Nat Med. 2021;27(6):964–80. https://doi.org/10.1038/s41591-021-01381-y.
4. Tagoe ET, Sheikh N, Morton A et al. COVID-19 Vaccination in Lower-Middle Income Countries: National Stakeholder Views on Challenges, Barriers, and Potential Solutions. *Frontiers in Public Health*. 2021;9. Accessed September 4, 2022. https://www.frontiersin.org/articles/https://doi.org/10.3389/fpubh.2021.709127
5. Ndwandwe D, Wiysonge CS. COVID-19 vaccines. Curr Opin Immunol. 2021;71:111–6. https://doi.org/10.1016/j.coi.2021.07.003.
6. Armocida B, Formenti B, Ussai S, Palestra F, Missoni E. The Italian health system and the COVID-19 challenge. Lancet Public Health. 2020;5(5):e253. https://doi.org/10.1016/S2468-2667(20)30074-8.
7. De Sousa A, Mohandas E, Javed A. Psychological interventions during COVID-19: challenges for low and middle income countries. Asian J Psychiatry. 2020;51:102128. https://doi.org/10.1016/j.ajp.2020.102128.
8. Md MH, Abdulla F, Rahman A. Challenges and difficulties faced in low- and middle-income countries during COVID-19. Health Policy OPEN. 2022;3:100082. https://doi.org/10.1016/j.hpopen.2022.100082.

9. Jahan Y, Rahman A. COVID-19: challenges and viewpoints from low-and-middle-income Asian countries perspectives. J Saf Sci Resil. 2020;1(2):70–2. https://doi.org/10.1016/j.jnlssr.2020.06.012.
10. COVID-19 control in low-income settings and displaced populations: what can realistically be done? LSHTM. Accessed August 31. 2022. https://www.lshtm.ac.uk/newsevents/news/2021/covid-19-control-low-income-settings-and-displaced-populations-what-can
11. Roelen K, Ackley C, Boyce P, Farina N, Ripoll S. COVID-19 in LMICs: the need to place stigma front and centre to its response. Eur J Dev Res. 2020;32(5):1592–612. https://doi.org/10.1057/s41287-020-00316-6.
12. da Fonseca EM, Shadlen KC, Bastos FI. The politics of COVID-19 vaccination in middle-income countries: lessons from Brazil. Soc Sci Med. 2021;281:114093. https://doi.org/10.1016/j.socscimed.2021.114093.
13. AlKhaldi M, Kaloti R, Shella D, Al Basuoni A, Meghari H. Health system's response to the COVID-19 pandemic in conflict settings: policy reflections from Palestine. Glob Public Health. 2020;15(8):1244–56. https://doi.org/10.1080/17441692.2020.1781914.
14. Palestine Authority. State of Emergency - Palestine's Covid-19 Response Plan. 2020. Accessed September 4, 2022. http://www.emro.who.int/images/stories/palestine/documents/Palestine_Authority_COVID-19_Response_Plan_Final_26_3_2020.pdf?ua=1
15. Moss D, Majadle G. Battling COVID-19 in the occupied Palestinian territory. Lancet Global Health. 2020;8(9):e1127–8. https://doi.org/10.1016/S2214-109X(20)30237-0.
16. World Health Organization. *Health Conditions in the Occupied Palestinian Territory, Including East Jerusalem, and in the Occupied Syrian Golan.*; 2021.
17. Lancet T. Redefining vulnerability in the era of COVID-19. Lancet. 2020;395(10230):1089. https://doi.org/10.1016/S0140-6736(20)30757-1.
18. Edit C, Allen L, Yvonne M et al. Survey of Palestinian refugees and internally displaced persons, 2016–2018 IX 220 Pages, 30 c.m.
19. PCBS| On the Occasion of the International Population Day. 11/07/2022. Accessed September 3, 2022. https://pcbs.gov.ps/post.aspx?lang=en&ItemID=4279
20. West Bank, Accessed UNRWA. September 3, 2022. https://www.unrwa.org/where-we-work/west-bank
21. Morrar R, Rios-Avila F. Discrimination against refugees in the Palestinian labor market. Int J Manpow. 2020;42(6):1002–24. https://doi.org/10.1108/IJM-08-2019-0396.
22. Feldman I. Looking for humanitarian purpose: endurance and the value of lives in a Palestinian refugee camp. Public Cult. 2015;27(3):427–47. https://doi.org/10.1215/08992363-2896171.
23. Palestine refugees. UNRWA. Accessed December 30. 2023. https://www.unrwa.org/palestine-refugees
24. Kaloti R, Kafri R, Meghari H, Hammoudeh W, Habash R. Situational brief: Palestinian refugees in the occupied Palestine territories during Covid-19. Published online June 19, 2020.
25. Al-Hatamleh MAI, Hatmal MM, Mustafa SHF, et al. Experiences and perceptions of COVID-19 infection and vaccination among Palestinian refugees in Jerash camp and Jordanian citizens: a comparative cross-sectional study by face-to-face interviews. Infect Dis Poverty. 2022;11(1):123. https://doi.org/10.1186/s40249-022-01047-y.
26. Diab JL. Palestinian refugees and COVID-19: navigating through Lebanon's Multi-layered crisis. Oxf Monit Forced Migration. 2021;10(1):149.
27. Kaloti R, Fouad FM. The politics of COVID-19 vaccine equity among refugee populations in Lebanon. J Global Health Econ Policy. 2022;2:e2022003. https://doi.org/10.52872/001c.32637.
28. Shakhshir L, Hammoudeh W. Topic guide for semi-structured Interviews - Responding to the Covid-19 in West bank Palestine refugee camps: lessons and role of community engagement. Published online 2024.
29. Devi S. Funds cut for aid in the occupied Palestinian territory. Lancet. 2018;392(10151):903. https://doi.org/10.1016/S0140-6736(18)32249-9.
30. Fiddian-Qasmiyeh E. The changing faces of UNRWA: from the global to the local. J Humanitarian Affairs. 2019;1(1):28–41. https://doi.org/10.7227/JHA.004.
31. Berg KG, Jensehaugen J, Tiltnes ÅA. *UNRWA, Funding Crisis and The Way Forward*.; 2022.
32. Ahmed F, Ahmed N, Pissarides C, Stiglitz J. Why inequality could spread COVID-19. Lancet Public Health. 2020;5(5):e240. https://doi.org/10.1016/S2468-2667(20)30085-2.
33. Wang Z, Tang K, Combating. COVID-19: health equity matters. Nat Med. 2020;26(4):458–458. https://doi.org/10.1038/s41591-020-0823-6.
34. Bahar Özvarış Ş, Kayı İ, Mardin D, et al. COVID-19 barriers and response strategies for refugees and undocumented migrants in Turkey. J Migration Health. 2020;1–2:100012. https://doi.org/10.1016/j.jmh.2020.100012.
35. Bukuluki P, Mwenyango H, Katongole SP, Sidhva D, Palattiyil G. The socio-economic and psychosocial impact of Covid-19 pandemic on urban refugees in Uganda. Social Sci Humanit Open. 2020;2(1):100045. https://doi.org/10.1016/j.ssaho.2020.100045.
36. Guadagno L. Migrants and the COVID-19 pandemic: an initial analysis. Migration Res Ser N° *60*. Published online 2020:28.
37. Jabali O, Ayyoub AA, Jabali S. Navigating health challenges: the interplay between occupation-imposed movement restrictions, healthcare access, and community resilience. BMC Public Health. 2024;24(1):1297. https://doi.org/10.1186/s12889-024-18817-y.
38. Lupieri S. Refugee health during the Covid-19 pandemic: A review of global policy responses. Risk Manag Healthc Policy. 2021;14:1373–8. https://doi.org/10.2147/RMHP.S259680.
39. Ekzayez A, al-Khalil M, Jasiem M, et al. COVID-19 response in Northwest Syria: innovation and community engagement in a complex conflict. J Public Health. 2020;42(3):504–9. https://doi.org/10.1093/pubmed/fdaa068.
40. Sahoo KC, Sahay MR, Dubey S, et al. Community engagement and involvement in managing the COVID-19 pandemic among urban poor in low-and middle-income countries: a systematic scoping review and stakeholders mapping. Global Health Action. 2023;16(1):2133723. https://doi.org/10.1080/16549716.2022.2133723.
41. Gilmore B, Ndejjo R, Tchetchia A, et al. Community engagement for COVID-19 prevention and control: a rapid evidence synthesis. BMJ Glob Health. 2020;5(10):e003188. https://doi.org/10.1136/bmjgh-2020-003188.
42. Health UNRWA, Accessed. December 31, 2023. https://www.unrwa.org/what-we-do/health
43. UNRWA. Covid-19 Weekly Update 20–26. April 2020. https://www.unrwa.org/newsroom/emergency-reports/covid-19-weekly-update-20-26-april-2020
44. World Health Organization, ed. Monitoring the Building blocks of health systems: A handbook of indicators and their measurement strategies. World Health Organization; 2010.
45. Khanna RC, Cicinelli MV, Gilbert SS, Honavar SG, Murthy GVS. COVID-19 pandemic: lessons learned and future directions. Indian J Ophthalmol. 2020;68(5):703. https://doi.org/10.4103/ijo.IJO_843_20.
46. Organization WH. People-centred and integrated health services: an overview of the evidence: interim report. Published online 2015.
47. Chowdhury R, Luhar S, Khan N, Choudhury SR, Matin I, Franco OH. Long-term strategies to control COVID-19 in low and middle-income countries: an options overview of community-based, non-pharmacological interventions. Eur J Epidemiol. 2020;35(8):743–8. https://doi.org/10.1007/s10654-020-00660-1.

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