



ORIGINAL RESEARCH PAPER

Health Science

THE ROLE OF PRIMARY HEALTH CARE (PHC) IN DISASTER MANAGEMENT

KEY WORDS: Primary health, community health, Home-Based Primary Care, disaster management

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ABSTRACT

Introduction: The number of events, either natural or manmade, that can potentially cause disasters, has increased sharply in recent years. Life losses, along with the displacement of millions of people, and the corresponding economic cost, should mobilize international organizations to effectively address the situation, with part of this effort referring to the mobilization and cooperation of all stakeholders involved. **Objective:** An investigation, through literature review, of the role of Primary Health Care in disaster management. **Material – Method:** This assignment is based on a descriptive review. A literature search was performed on the PubMed, Sciencedirect, and Scopus databases focusing on the years 2015-2022. The following keywords were used: Primary health, community health, Home-Based Primary Care, disaster management. No reference was included to the provision of health care outside of primary health care structures. **Results:** The results can be grouped in two categories. In the first category, an analysis takes place regarding PHC actions in each stage of the disaster management cycle. In the second category, the conditions are listed that should be paid attention to, especially by the political leaders of each country. **Conclusions:** The World Health Organization, especially in the aftermath of the pandemic of the last two years, has reinstated the critical role of PHC as a cornerstone of solid health systems. At the same time, international organizations that specialize in disaster management focus on reducing risks, as a responsibility that is mostly assigned to communities working together with all organizations involved. Combinedly, it naturally follows that primary health care structures play a leading role in the management of mass events.

INTRODUCTION

According to the 2020 Global Report on Internal Displacement (GRID) by the Internal Displacement Monitoring Centre (IDMC), 40.5 million people were forced to leave their homes due to disasters and conflicts, looking for refuge in the mainland of their countries. 30 million were displaced due to extreme, mostly hydrometeorological, weather phenomena, while 655,000 were displaced due to earthquakes and volcanoes. The total cost of displacement was 20.5 billion dollars in 2020 (Leaning & Guha-Sapir, 2013). According to the EM-DAT international database, in the last decade, and as a result of disasters, 587,679 people have lost their lives. and 1,886,835,893 people have been affected in various ways, while the economic damage is estimated at 1,890,060,458 US dollars ("EM-DAT | The international disasters database," n.d.).

The United Nations International Strategy for Disaster Reduction (UNISDR, 2009) defines Disaster as: "A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources."

The scientific community and international organizations corroborate and agree on the following assumptions:

- Not every event or natural phenomenon is a "Disaster" in its own right. Interaction with the human factor plays a catalytic role in determining whether it will develop into a disaster, in the end.
- The causes and size of the impact of an event should not be sought in the characteristics, purely, of the event, but also in the components that compose each society and place.
- No community is protected 100% against disasters, regardless of how well-prepared it may be. No matter how resilient, developed, and prepared a country is, there will always be a threat with the potential to cause disaster.

The classification of disastrous events can be as follows:

A. How it occurs.

- Natural phenomena
- Geodynamic phenomena

- Hydrometeorological phenomena and climate changes
- Astronomical phenomena
- Biological infections and infestations Technological accidents.
- NaTech. Technological failures caused by natural phenomena (combination of the above two).
- Attacks, Civil conflicts, wars, and acts of terrorism
- Speed and length of the disaster. Disasters can be classified according to the speed of their onset and length, in terms of the response time provided.

C. Based on the extent of the consequences

Furthermore, classification could also be based on two major categories:

Natural disasters, when the generating mechanism is due to procedures that take place in nature with or without man's presence, and Manmade disasters, when the generating mechanism is due to technological development or/and man's aggressive behavior. However, as the degree of the impact of human activity on the environment increases, the boundaries between the above two categories become more vague.

Regarding disaster management by International Organizations, a clear, gradual progress is reported, which starts from sending humanitarian aid to address the effects, continues with the need for Disaster Risk Management (DRM), and ends, at the current period, at focusing on Disaster Risk Reduction (DRR). ("UNDRR Local DRR Strategy Training Workshop.pdf - Google Drive," n.d.).

In the context of the Sendai Framework for Disaster Risk Reduction, 2015-2030, it is clearly stated that countries are now required to develop strategies for risk reduction ("Sendai Framework for Disaster Risk Reduction 2015-2030 | UNDRR," n.d.).

In terms of the consequences, they could be classified into the following two major categories:

- Human and Social losses.
- Financial & Material losses.

A major consequence after the occurrence of a disastrous event refers to the health of the population. At a severe stage,

and with an increased number of casualties, the health system is under escalating demand pressure.

The possibility of the buildings of health units to also be damaged makes the treatment of patients more difficult, not only at the time of the event, but also at a much later stage, depending on the pace of restoration or the possibility of the gap being filled by other structures (Swathi, González, & Delgado, 2017).

The biggest risk, however, for the health of citizens can be identified on a secondary level and on Public Health level. Issues of access to services due to their overloading, or not operating in full capacity because of damages, and a different prioritization of needs by citizens, result in reduced demand for services, especially from people with chronic illnesses. In terms of Public Health, multiple risks emerge, which make it necessary to stay constantly alert and monitor them, particularly when there are not any strict hygiene, water supply, and sewerage rules and regulations to adhere to, especially in temporary camp sites, or if the collection of dead bodies and waste is delayed (Aldis, 2008). The outbreak of epidemics is a potential hazard, the extent of which, will depend on how fast each country will respond, and also on the state of the health system.

AIM

The aim of this review is to investigate the role and place of PHC in the crisis and disaster management cycle, as well as highlight the parameters that are reported as important and essential in literature, in order to classify it as a factor that can contribute equally to upgrading the health system.

MATERIAL-METHOD

A literature search was carried out through the PubMed, Sciencedirect, and Scopus databases, and through the search engine of Google Scholar. This search focused on the years from 2015 to 2022.

The following keywords were used: primary health care, community health, Home-Based Primary Care, and disaster management.

During the search, 76 articles were found, and 24 of them were selected. Any information that referred to the provision of health care during disasters, either at hospital structures or by health task forces that were developed and operated in the field, was not included.

RESULTS

During the review, it was revealed that the studies mostly focused on two areas of interest, and in a similar way, the results could be classified into two directions:

The first one refers to the contribution of primary health care structures to the disaster management cycle, stressing the need to include those structures in the government's planning and be treat them as equal partners, with whatever this may imply or require; the second one focuses on the parameters that need to be approached more carefully by the government, in order to alleviate any weaknesses or inequalities, and create those conditions that will result in the first request.

In more specific, in low- and medium-income countries, as it is also demonstrated in case of disasters, through the active involvement of primary health care, it is possible to offer high-quality services to large parts of the population, requiring less resources from the government's budget, at the same time (Swathi et al., 2017). Studies conducted in countries like Nepal, Jordan, and Indonesia, where hospital structures are not fully equipped and staffed, on the one hand, and fail to expand their operation, when necessary, on the other, as it happens in a mass event, showed that local health units played

a catalytic role in responding to the crisis (Fredricks et al., 2017) (Al-Ali & Ibaid, 2015) (Mawardi, Lestari, Randita, Kambey, & Prijambada, 2021)

However, in wealthier countries, as well, literature reports the need for active involvement in PHC, more as a request from the government to include it in its initial disaster management planning, as an active and equal member to other organizations. In a study in Italy during the pandemic, it was compared how patients with Covid-19 were treated in Lombardy and in Veneto. On the one hand, the first region focused on supporting hospitals, thus ignoring the staffing needs in PHC, whereas the second region actively involved primary health care structures in responding to cases. Because of this difference, in Lombardy, 66% of the patients were hospitalized, with mortality reaching 129.3/100,000 citizens, whereas, in Veneto, on the other hand, 20% of the cases were hospitalized, with mortality reaching 26.4/100,000 citizens (Plagg, Piccoliori, Oschmann, Engl, & Eisendle, 2021). In Iceland, which empowered its primary health care, it made it the first point of contact with Covid-19 patients, and expanded its actions to consultations over the phone and on the Internet. Through this tactic, although daily consultations showed an increase in the region of 35%, and remote consultations by 127%, the health system managed to respond to and serve not only cases due to the pandemic, but also chronic patients (Sigurdsson et al., 2020).

In the USA, the treatment of chronic patients, and especially the elderly, who are disadvantaged, in terms of having easy access to health structures, even in normal conditions, was facilitated by home-based care programs, which had a key role in both the continuing monitoring of patients and prevention through preparing and informing them appropriately, in order to reduce their vulnerability, if an event occurs (Claver, Wyte-Lake, & Dobalian, 2015) (Wyte-Lake, Claver, & Dobalian, 2016).

In countries like Australia, New Zealand, and Canada, with special geomorphological characteristics, literature focuses on supporting remote and rural medical practices, in order to make it possible to address the consequences of a disaster, until assistance from the government arrives, and reduce at the same time, the need to transport patients by ambulance to central hospitals, thus increasing sharply the management cost (Burns, Douglas, Hu, & Aitken, 2019).

Regarding the above two areas that are discussed in literature, there is consensus in the results on the following:

A. PHC actions within the disaster management cycle

The contribution of primary health care structures to the four stages of the disaster management cycle is the following:

Prevention: A key action is to inform and train citizens, on both risk reduction and consequence minimization. Changing the behaviors and increasing the alertness of citizens through active participation is of critical importance (Helsloot & Ruitenberg, 2004). Health professionals in out-of-hospital structures have usually established communication channels with the population and local stakeholders and organizations, through which, it is possible to disseminate knowledge and create social capital (Nicholls, Picou, Curtis, & Lowman, 2015).

Preparedness: It mostly refers to the preparation of a plan of action, so that, in the occurrence of any event, actions should be specific and coordinated. The international scientific community stresses the need for cooperation among all organizations, ensuring that public and private enterprises work together, and of course, through the active participation of citizens. (Kulig et al., 2017) During planning, it is believed to be necessary to ensure that the designated areas where the citizens will be assembled, if necessary, meet the appropriate

health standards (drinking water, toilets, etc.), as well as how it will be possible to serve citizens who live alone, the elderly, and bedridden, and how to ensure that there will be ongoing care and sufficient pharmaceutical preparations, and finally, whether the community health structure can expand its operation.

Response: In a mass event, the number of people in need of medical assistance rises sharply, whether as result of casualties, or due to pathological causes. In geographical locations that are only supported by primary health care structures, these structures are filled fast (Willson, Fitzgerald, & Lim, 2021). The ability to take alternative actions, assisted by voluntary citizens, and provided that health professionals are aware of the level of knowledge and skills of those persons, can sufficiently decongest the structures, thus preventing overcrowding.

Recovery: It is the stage after a disastrous event that can last from hours to many years. In many cases, people have to live in temporary accommodation or camp sites. Keeping a watchful eye on the living conditions is of critical importance, in order to be able to prevent an endemic or epidemic occurrence of infectious diseases, according to the extent of the consequences. Moreover, citizens who have lost their properties or income, may overlook health issues and/or taking their medication, which results in recurring chronic illnesses. (Rupp, 2018).

B. Parameters - Conditions for effective involvement of PHC
As it has already been reported, the active and effective participation of primary health care providers in disaster management lies, to a great extent, with the government's planning, and as a result, the extent that they are involved in planning.

The key points that were identified in the literature review are the following:

Training: It is actually the dominant request. Employees in primary health care structures request their inclusion in continuous training on disaster management, since, in the majority of their core studies, across all specializations, no relevant courses are included; they also request to be briefed on the current conditions of each emergency, participate in drills, when they take place, and cooperate with other stakeholders (Swathi et al., 2017). Spatial organization, allocation of existing resources, changing the function of structures, as well as developing mental resilience are some of the parameters that are believed to be essential for effective disaster management (Witt & Menegat, 2019). Moreover, training together with other stakeholders can contribute to the development of a common code of communication, which is a condition for the optimum coordination of actions, and response time reduction. The dissemination of information serves as a bedrock, and hence, the Centers for Disease Control and Prevention (CDC), as well as the World Health Organization, promote Emergency Risk Communication (ERC), through which, information, advice, and views can be exchanged, in real time, among stakeholders, in order to make well-grounded decisions that promote safety and taking measures (Bagheri, Dehdari, & Lotfizadeh, 2021).

Resources: The sufficient staffing of out-of-hospital structures. In terms of quantity and quality, it should vary according to the number of citizens of the community served, taking into account any special characteristics, e.g. refugee camps, minority groups, geographical morphology and ease of access, etc. (Kulig et al., 2017). On the other hand, health structures should be provided with all the necessary medical and technological equipment that not only covers daily needs, but also emergency needs, to the extent that an early diagnosis can be given locally and safely, and the relevant

treatment intervention is provided without having to move the patient.

Building infrastructure: The site where the health structures are based should meet specific criteria. Nevertheless, the main point is to make sure that a building is safe. The World Health Organization (WHO) has developed the Hospital Safety Index (HSI), which is an international multiple risk assessment tool that allows standardized comparisons at hospital safety level. Although there is not any similar tool for primary health care structures, it could be possible to use one through modifications, as it happened in a study in Serbia, in which, the health care units in question did not meet multiple safety criteria, which explained the extensive damage that they suffered in recent years, thus having to discontinue a large part of their services (Lap evi , Mandi -Raj evi , Lepi , & Jovanovi , 2019).

Funding is a common factor that plays a role in the implementation of the above. However, the allocation of resources from the government's budget varies, according to the place and importance that is assigned by the political leaders of each country to the various levels of the health system.

DISCUSSION

Since 1978, and based on the Declaration of Alma Ata, primary health care has been recognized by International organizations as a cornerstone of solid health systems, safeguarding the health of the recipients of their services, by extent (" - , " n.d.). Its importance was updated in October 2018, by the Astana Global Conference on Primary Health Care in Kazakhstan, which committed political leaders, professional organizations, the academic world, and world health and development organizations ("Declaration of Astana," n.d.).

On the 14th of December 2020, the World Health Organization published the Operational Framework for Primary Health Care ("Primary health care measurement framework and indicators: monitoring health systems through a primary health care lens," n.d.). The vision for PHC is to set the foundations to achieve Universal Health Coverage (UHC), as well as the Sustainable Development Goals (SDGs) ("Building health systems resilience for universal health coverage and health security during the COVID-19 pandemic and beyond: a brief on the WHO position," n.d.).

Moreover, both the United Nations Office for Disaster Risk Reduction (UNDRR) and the Sendai Framework (2015-2030) set as priorities an increased resiliency and risk reduction by initiative of local communities ("Sendai Framework for Disaster Risk Reduction 2015-2030 | UNDRR," n.d.).

According to the above, it becomes clear that International Organizations believe that solutions can be found within the community and its stakeholders, with primary health care structures being among them. However, in order to implement this in practice, it is required to ensure commitment from political leaders, and shift the balance of power, and allocation of funding and support, as a result (Peiris et al., 2021).

CONCLUSIONS

From the literature review, the conclusion can be drawn that Primary Health Care can be an equal partner with other stakeholders in disaster management, both after a disaster happens, and later on, during recovery, and prevention of a secondary health crisis. However, it is of key importance to ensure that its role corresponds to the International call for disaster risk reduction. A knowledge of the composition of the population, along with providing training and information to citizens, and participating to the planning process, are only a few of the possible areas of action.

However, to warrant the implementation of all of the above, political leaders are required to empower PHC providers and highlight their important role. The continuous training of staff, along with joint training with other stakeholders that are involved in responding to events, eliminating understaffing, and providing for the necessary logistical and building equipment, are essential requirements and conditions, in order for PHC to be able to correspond to its roles and responsibilities.

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