

Exploring the Consequences of Natural and Man-made Humanitarian Emergencies on Human Health

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ABSTRACT

Introduction: The natural disaster tends to affect the lives of millions of people, and there is a great risk for the outbreak of different infectious diseases. The objective of the current review was to explore the consequences of natural and man-made humanitarian emergencies, and the role of monitoring systems in dealing with the problem better.

Methods: We performed a detailed search on the PubMed and Google Scholar search engines. In addition, we also screened the World Health Organization website and United Nations Population Fund website. Keywords used in the search include humanitarian emergencies in the title alone only. A total of 13 research articles and 10 documents and case studies were selected as they were in alignment with the current review.

Results: It is of utmost importance that measures are taken by the governments of the affected nation as well as the destination nations or other stakeholders to safeguard the rights of refugee women and assist them in leading a peaceful life.

Conclusion: To conclude, there is a great need to scale up the sexual and reproductive healthcare services in the hurricane-affected regions and improve the quality of life of the vulnerable women and girls. There is an extensive need to strengthen and expand the range of services to enable survivors of slavery to effectively deal with their past experiences and health-related ailments.

Keywords: Disasters, Humanitarian emergencies, Women.

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INTRODUCTION

Natural disaster tends to affect the lives of millions of people, and there is a great risk for the outbreak of different infectious diseases. However, any such risk can be averted with the proper implementation of relief measures and better coordination among the concerned stakeholders.^{1,2} Subsequent to a disaster, the fabric of society broke down and a rapid rise in insecurity and violence against women cropped up.² The objective of the current review was to explore the consequences of natural and man-made humanitarian emergencies, and the role of monitoring system in dealing with the problem better.

METHODS

We performed a detailed search on the PubMed and Google Scholar search engines. In addition, we also screened the World Health Organization website and United Nations Population Fund website. Appropriate research articles, case studies, and reports targeting humanitarian emergencies in different parts of the world between 2014 and 2016 were included in the review. Keywords used in the search include humanitarian emergencies in the title alone only. A single researcher performed the review process and so there was no duplication of research studies. A total of 21 studies were identified initially, of which 8 were screened out as full text was not available. Overall, 13 research articles and 10 documents and case studies were selected as they were in alignment with the current review (Fig. 1).

Hurricane in Haiti

The 2016 hurricane was a very strong and deadly cyclone, which resulted in massive destruction and tragic loss of lives during its

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journey across the different regions of Haiti, Cuba, the Dominican Republic, and Lucayan Archipelago.¹ Among all the affected nations, Haiti was the worst affected with 1.4 million people in need of prompt humanitarian aid, while close to 550 people died, and in excess of 125 people have been reported missing.¹ Also, 0.17 million people have been staying in temporary shelter homes due to the destruction of their homes. In addition, more than 35 healthcare establishments in the nation have been severely compromised.¹⁻³ Further, there is a definite potential risk of major outbreaks of infectious diseases, such as cholera and malaria.⁴

Relief Measures by the World Health Organization

In an attempt to avoid the sequels of the disaster, the World Health Organization in collaboration with its other partners and the health ministry has mobilized the resources and supplied medicines and other healthcare products in the affected parts of the nation.⁵ The requirement for the relief work was based on the careful assessment by a team of experts regarding the number of

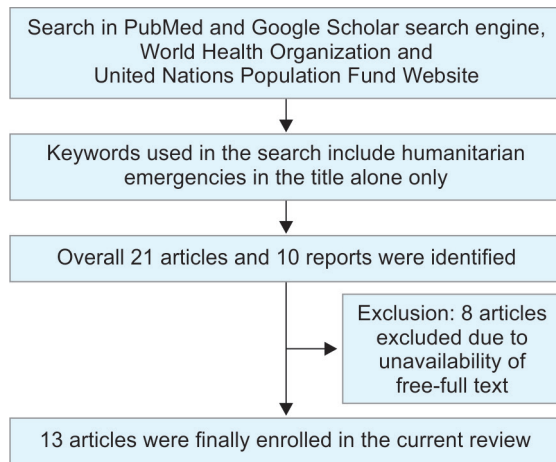


Fig. 1: Flowchart for selection of research articles

accessible and operational health facilities, the total number of people requiring assistance, and the nature of injuries.² At the same time, efforts have been taken to strengthen the disease surveillance activities to identify any upsurge in the incidence of some infectious diseases. Further, the WHO has appealed for the donor agencies to pool \$9 million to conduct response activities in the nation at the desired pace.¹

Moreover, considering the problems of questionable accessibility to healthcare centers, impaired water and sanitation services, damage to health facilities or equipment of the cold chain, vaccine shortage, and susceptible population, there is a significant risk of a cholera outbreak.⁵ In fact, a 50% rise in the incidence of the disease has been reported and more than 2,250 people have been suspected of the disease. Therefore, to prevent the onset of a major outbreak, key areas have been identified, namely, improving accessibility to health centers, strengthening the capacity of the healthcare delivery system, intensifying surveillance activities to enable a prompt outbreak response, improving vector control and environmental health measures, and maintaining effective coordination between humanitarian relief activities.^{2,4} Further, it has been reported that almost 1 million doses of oral cholera vaccines have been supplied in the nation to conduct emergency vaccination campaigns. In addition, a central cell has been established to coordinate relief activities and for deploying emergency medical teams. Also, the activities pertaining to the planning of the health response, maintaining the supply of medicines, epidemiological surveillance, transport, and communication have also been given due attention.^{1,5}

Earthquake in Nepal

Nepal was shocked by a powerful earthquake in April 2015 which accounted for the lives of more than 8,000 people and wounded in excess of 20,000 people.⁶ The disaster precipitated two avalanches in the neighboring regions, and many residents were never found. Further, another major earthquake was reported in the nation, the very next month, which magnified the extent of damage and human sufferings.^{6,7} These natural disasters compromised the lives of more than 5.6 million people across the affected regions, and even damaged more than thousand healthcare establishments. In fact, it was declared a state of emergency requiring external humanitarian assistance for the containment of the situation.⁶

Consequences of Disaster

Moreover, the disaster resulted in a massive impact on the nation's economy, trade, tourism, welfare services (such as education, food, drinking water, and sanitation), health sector, and accomplishment of the health-related different goals and targets.⁷ However, the extent of harm aggravated predominantly due to the lack of preparedness, shortcomings in the health sector, the destruction of basic infrastructures and health facilities, and interruption in the routine healthcare services.^{7,8} In fact, the nutrition status of infants and young children (prevalence of exclusive breastfeeding or timely initiation of complementary feeding) has significantly worsened post-disaster and the surgical need of injured patients was not met adequately, and there was a major scare of outbreaks of different vaccine-preventable diseases and food-borne infectious diseases (owing to the interruption in routine welfare measures and shortage of trained public health professionals).⁷⁻⁹

In addition, serious psychological trauma was experienced by the survivors and even by the health professionals or relief workers who worked in the region to minimize the aftereffects of the disaster.^{8,10} From the social perspective, adolescent girls and women survivors have been victimized and subjected to trafficking, sexual violence, rape, and physical trauma from drunkard men, and the prevalence of such incidents has enormously increased among single women.^{8,11} In order to support women, some of the local volunteers in collaboration with the United Nations Population Fund and a nongovernmental organization, have established Female-Friendly Spaces in the relief camps to ensure the provision of safe shelter, social support, and counseling to the affected women and children.⁷

These temporary establishments have offered a sympathetic ear to vulnerable women, and assisted them in dealing with the crisis and sexual/gender-based violence by offering them adequate sexual and reproductive healthcare services.⁷ It is worth mentioning that even prior to the disaster, a major proportion of women were exposed to such adverse social hazards, and they were dealing with it either with silence or by committing suicide.^{9,10} However, as a part of the disaster response, close to 100 such female-friendly spaces have been established and lakhs of women have registered themselves for their welfare. From the men's perspective, who initially thought these places are meant to make their lives difficult, even they have realized the contribution of these places in ensuring marital harmony, and in improving the quality of life of women.^{10,11}

Humanitarian Conflict in Nigeria

The conflict in northeastern Nigeria which started in 2009 has accounted for an extensive destruction and affected the lives of almost 15 million people in four of the worst-affected states of the nation.¹² In the Borno state alone, more than 2 million individuals have been internally displaced, with rates of severe acute malnutrition being recorded as 15%, and the overall mortality rate being four times more than the usual estimates.¹² In addition, two cases of polio have also been detected, that too after completion of 2 years of the last reported case, one of which is still in inaccessible regions. At the same time, there is an impending risk of a major measles outbreak in the region due to the interruption of routine immunization services. In order to help the affected people, close to 0.8 million people have been released from the militant groups, nevertheless, access to them is quite difficult.¹² This is predominantly because of the insecurity in the region and in the working atmosphere, as evidenced by repeated attacks on the

healthcare staff. Also, there is a shortage of resources and logistics in the health facilities, which makes it difficult to deliver timely healthcare services.^{12,13} In addition, the issues of nonfunctional status of more than 50% of the health establishments, and restricted accessibility due to their distant locations, poor quality of roads, and adverse climatic conditions, further complicate the healthcare delivery. Most of these released people are from vulnerable population groups (such as women, children, and elderly), who have had no access to health care in the last 2 years, and thus there is an immense need to urgently address their health necessities.^{12,13}

Prevention and Control Measures

All these evidences clearly indicate that the health status of people in the affected regions is extremely poor, as they are quite vulnerable to the outbreaks of different preventable infectious diseases and other adverse health outcomes. In order to respond to their needs and to minimize the rates of deaths and disease, the World Health Organization (WHO) aims to consolidate the emergency response activities, in collaboration with their other partners to assist the affected people by strengthening the basic health services, including immunization against vaccine-preventable diseases.¹² Further, trained staff has been deployed in the affected parts for emergency operations, coordination, disease surveillance, and data management.

Moreover, the WHO has rolled out its Early Warning, Alert Response System in different health facilities, and till date, it has been initiated in 160 sites.¹⁴ This system has been started to consolidate relief activities in response to an outbreak during emergencies. Its advantage is that the data can be collected and submitted in real time, and that it can be used by the local health workers so that prompt relief measures can be implemented.¹⁴ However, to execute the relief work without any constraints, there is a great need to have financial support and it has been estimated that US\$25 million are required to execute the response activities in the year 2016. Indirectly, it calls for support from other funding agencies to extend their financial support to improve the overall scenario of the vulnerable people.¹⁴

Humanitarian Emergency in Haiti

Hurricane Matthew accounted for the immense destruction of property and loss of lives across multiple nations, with Haiti being the worst affected.¹⁵ In fact, it was estimated that more than 2 million people were affected by the natural disaster, of which 70% are in need of prompt assistance.¹⁵ In addition, a 50% hike in the incidence of cholera cases has been reported since the hurricane hit the nation. Moreover, extensive damage has been caused in the fields of agriculture, fishing, and livestock, but the precise loss has not yet been estimated. However, it is very much possible that if immediate steps are not taken, a large number of families will be forced to live in extremes of poverty, with women and girls being most vulnerable to the adverse consequences.¹⁵

Further, due to the shift of attention toward the emergency relief activities and the destruction of more than 35 health facilities, delivery of the routine healthcare services has been jeopardized. The available estimates suggest that close to 0.54 million women and girls of reproductive age group have been affected by the hurricane, and thus are in need of quality assured health care.¹⁵ It has been observed that childbirth-related services have been severely affected and there is a significant shortage of trained personnel, logistics, and equipment. The records pertaining to the registration

of pregnant women in the region suggest that more than 13,500 women are expected to deliver in the next quarter, of which 15% are likely to experience complications and so will be requiring emergency obstetric care. In addition, the women who have recently given birth are in immense need of postpartum care and thus are again dependent on the health sector for their well-being.^{15,16}

Nevertheless, as a matter of fact, a significant proportion of the new mothers have no home left where they can return after their discharge, as their properties have all been damaged due to the hurricane.¹⁷ The systematic assessment of the situation in the post-disaster phase has clearly revealed the need to safeguard the health and rights of women and girls, which are often disregarded in emergency settings. At the same time, special attention is required to respond to the rising incidence of gender-based violence, and for offering appropriate care and support to the survivors of women and girls who have been exposed to sexual abuse.¹⁷

Acknowledging the special needs of the women in the affected region, the United Nations Population Fund has established one-stop shops to extend sexual and reproductive health care to them with the help of trained midwives. In addition, maternity units and mobile clinics have been started to rehabilitate the affected women of gender-based violence.¹⁷ Further, reproductive health kits have been distributed to the functional healthcare establishments to encourage safe birth and promote access to contraceptive methods. Efforts have also been taken to distribute hygiene, food, and cooking kits for assisting women and girls in the severely affected regions.^{17,18} However, through the establishment of female-friendly space, the nation and the women are gradually emerging from the catastrophe and restoring their lives back to normal. The conflict in the northeastern Nigeria has significantly affected the lives of the people in the region. There is an indispensable need to implement appropriate measures to improve healthcare delivery and simultaneously support the relief activities with a strengthened surveillance system.^{17,18}

Humanitarian Emergency in Syria

Since the rebellion started in Syria in the first quarter of 2011, the lives of almost every resident of the nation have been compromised on all possible fronts, whether it is health or education or employment or welfare.¹⁹ In fact, thousands of civilians have died, while millions of people have been internally displaced or have migrated to the adjacent nations. The magnitude of these refugee populations is so high that it has been regarded as one of the worst man-made humanitarian emergencies affecting mankind for such a prolonged period. Amidst the lack of preparedness in the receiving nation and the prevailing concerns of inequitable health coverage, it is quite obvious and even evident that the sexual and reproductive health-related needs of the refugee women have been totally jeopardized.^{18,20} The findings of the epidemiological studies performed among these women have clearly reported a significant rise in the incidence of gender-based violence and early marriage, restricted access to essential as well as emergency obstetric care and family planning services, unattended childbirths or home deliveries, forced cesarean sections, and high cost of out-of-pocket expenditure on health care, which in turn further discourages women to avail the services.^{19,20}

As a matter of fact, similar sorts of findings have even been observed in shelter camps and women have been harassed by men almost everywhere. These events have not only affected their physical health standards, but even accounted for poor mental

health, deteriorating the quality of life, and acted as a hindering factor in allowing women to take decisions about their own sexual and reproductive health. Furthermore, refugee women have been subjected to violence and sexual harassment even during their journey and/or on reaching their destination. Moving ahead, it becomes even more difficult for women who are having small children, as they have to take care of them also, all while under the continuing menace of abuse and exploitation. In addition, their problems magnify enormously due to the lack of money or damage to their property or resources in the war and have to live in crushing poverty.¹⁹⁻²¹

In order to respond to the special needs of the refugee women, the United Nations Population Fund has established multiple safe spaces for women. These safe spaces aim to provide counseling and other supportive services (viz., shelter, job, services for sexual and reproductive health care) for the women. In addition, attempts have been taken to stop the practice of early marriage and thus avert the chain of events to repeat again.¹⁷ However, a lot needs to be done as the reach of these interventions is not much, while the number of affected women is too many.¹⁷

Humanitarian Emergency in Iraq

Since the inception of Iraqi civil war in 2014, the lives of the residents in the affected regions have been severely compromised. In fact, millions of people have been internally displaced, while another major section of people has migrated to neighboring territories in search of peace, care, support, and rehabilitation, but nothing seems to sort out their problems, at least in the near future. Also, people who are living in camps or makeshift shelter homes are constantly being exposed to overcrowding, poor standards of sanitation-hygiene-drinking water, minimal access to health care, and exploitation at the hands of different parties involved in conflicts, including the other local residents.^{17,18}

The health sector has been affected the worst, with massive damage to the health facilities, equipment, and logistics being reported, either due to the bombing or because of the looting of these centers. As a result, most of the healthcare establishments have closed, and whichever are functioning now, are predominantly catering to the emergency needs of the injured people, with routine healthcare services for the general population being completely compromised. Owing to all these factors, the accessibility of people to health facilities has tremendously reduced, and as a matter of fact, most of the people have either lost trust in the health sector or are extremely apprehensive about going to these establishments. In addition, due to the constant interruption in the supply of logistics by the conflicting agencies, people are not aware about the range of services available in the operational health facilities.^{18,19}

Even though, almost all people are exposed to different kinds of services, the worst-affected are the girls and the women in the reproductive age group. These females are extremely vulnerable to physical violence, sexual, or gender-based violence (such as coerced sex, sexual slavery, and repeated rapes), trafficking, repeatedly selling, torture, violation of basic human rights, and inhuman treatment. Thus, they are exposed to the risk of acquiring human immunodeficiency virus infections, other sexually transmitted infections, unplanned pregnancies, unsafe abortions, female genital mutilation, loss of self-esteem, mental illnesses (such as posttraumatic stress disorder, attempt to suicide, and depression), and deterioration in the quality of life.^{18,19}

The impact of such exposure is so horrible that even after their repatriation, survivors cannot forget the treatment they received and are unable to believe they are still alive. These thoughts have still persisted in survivors as even after returning, they are facing stigma in their local society. Realizing the problems of the survivors, the United Nations Population Fund has established multiple support centers for women, which are manned by trained social workers. These workers offer a sympathetic ear to them and support them in all possible ways (psychosocial support through one-to-one or group counseling sessions, vocational trainings, awareness campaigns, legal assistance, referral services for health ailments, and kits for the maintenance of good health and personal hygiene), and motivate them to live their life afresh. Further, there is an immense need to improve the reach of sexual and reproductive healthcare services to assist the victims of such sexual violence.^{20,21}

Need of a Reporting System during Humanitarian Emergencies

Delivery of effective healthcare services in a quality assured, timely and affordable manner to all is one of the most important priorities of the health sector and stakeholders. In addition, health services play a defining role in the prevention of morbidities, arresting the development of complications, and averting fatalities, both under routine circumstances as well as during humanitarian emergencies.^{21,22} The striking fact is that humanitarian emergencies significantly affect the healthcare establishments, not only with regard to their structure but also its functioning.²² In fact, reports of destruction, shortage of medicines and medical supplies, shortage of healthcare personnel (due to killing, abduction, or life threats), and absence of basic amenities within the premises have been reported across various settings, owing to which the healthcare delivery to the general population has been severely compromised.^{22,23} This is an urgent need in case of emergencies, as often the health care needs increase enormously. At the same time, it is extremely difficult to monitor health services and issues pertaining to access, security, as well as limited timings of the health facilities, further complicate the healthcare delivery. Moreover, due to the lack of available information, policy makers are in no state to take precise decisions or even mobilize resources.²³

Health Resources Availability Monitoring System

In order to respond to these challenges during emergencies or in post-emergency period, an online system – Health Resources Availability Monitoring System (HeRAMS) has been developed to enable monitoring of health facilities, services, and availability of resources.²¹ It is a simple system, which can be promptly implemented regardless of the type of emergency or the nation, and neutralizes the concerns of access, security, and time or resource shortage. In addition, it is cost-effective and does not require intense training to make it operational. The implementation of this system across different emergencies has revealed its utility in enabling health stakeholders to take evidence-based decisions, initiate prompt and equitable responses, ascertain requirements and lacunae, and assist in efficient planning and execution of the plans.^{22,23}

However, the best part is its ability to monitor different facets of emergency response, namely healthcare establishments, resources required for service delivery, availability of health services, and potential reasons that have compromised the quality of emergency response. Also, almost all types of healthcare delivery methods (viz., public, private, mobile, and community) can be monitored

during emergencies. In order to respond to the challenges encountered by the health sector due to the ongoing conflict in Nigeria, the system has been implemented in the Borno State of the nation. Since the initiation, many persons have been trained and deployed in healthcare facilities to help the policymakers to gain a comprehensive insight into the available health resources. Simultaneously, it will help to identify the critical gaps and thus develop an appropriate strategy to respond to the same and in improving the capacity of the health facilities.^{22,23}

CONCLUSION

To conclude, there is a great need to scale up the sexual and reproductive healthcare services in the hurricane-affected regions and improve the quality of life of the vulnerable women and girls. Refugee women affected by the ongoing humanitarian emergency are living in an atmosphere of insecurity and harassment. It is of utmost importance that measures are taken by the governments of the affected nation as well as the destination nations or other stakeholders to safeguard the rights of refugee women and assist them in leading a peaceful life. There is an extensive need to strengthen and expand the range of services to enable survivors of slavery to effectively deal with their past experiences and health-related ailments.

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