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DISASTER NURSING (N 110)
STUDY GUIDE

REVIEW OF WORST DISASTERS IN THE COUNTRY AND IN THE WORLD

Introduction

Hello students!

> **"We cannot stop natural disasters, but we can arm ourselves with knowledge: so many lives wouldn't have to be lost if there was enough disaster preparedness."** ***~ Petra Němcová***
> *(Czech model, co-founder of All Hands and Hearts – Smart Response, disaster survivor [2004 Boxing Day tsunami in Thailand], appointed by the UNISDR as a Disaster Risk Reduction Champion and Tsunami Awareness Advocate – 2017, Wikipedia)*

The undergraduate course in Disaster Nursing is not only timely, but a much-needed academic preparation for future nurses to be more competently responsive to the changing health landscape brought about by environmental, socio-political, and economic factors among others. The increasing frequency of disasters (both natural and complex) as a worldwide phenomenon leads to significant loss of lives, community and environmental damage, and economic losses (Satoh, et al., 2018). In 2009, the International Council of Nurses (ICN) and the World Health Organization (WHO) published the ICN Framework of Disaster Nursing Competencies in view of the urgent need of scaling up nurses' capacities *"…to safeguard populations, limit injuries and deaths, and maintain health system functioning and community well-being, in the midst of continued health threats and disasters"* (WHO & ICN, 2009, Foreword). While nurses worldwide have had substantial contributions in response to disasters and emergencies, we believe we can be better organized so that we can do more, particularly here in our country and region. Both WHO & ICN (2009) are in agreement that *"health systems and health care delivery in disaster situations are only successful when nurses have the fundamental disaster competencies or abilities to rapidly and effectively respond."*

This introductory module revisits the disasters that has occurred (focusing more on natural disasters) and looks at related factors and impact of disasters based on global and local data and studies.

Learning Outcomes

At the end of the module, you should be able to:

1. Describe the general trend of disasters over time and across countries
2. Describe the general impact of major global/regional and local disasters
3. Explain the relevance of the Philippine's rank in the World Risk Index

Concept Outline

Overview of global and local disasters

March 11, 2011 (ten years ago this year), a magnitude 9.0 – 9.1 undersea megathrust earthquake occurred off the Pacific coast of the Tōhoku region of Japan. Later known as the Great East Japan Earthquake, it triggered a massive 39 meters (12-story high) tsunami waves that traveled inland as far as 10 km in Sendai (Oskin, 2017). With a death toll reaching over 15,000 and more still missing, the damage was overwhelming that Japan, considered as a world leader in disaster preparedness, yet required an international response to attend to its humanitarian needs.

Two and half years later, the world's focus shifted once again to Asia as it watches the slow but sure approach of a tropical storm moving from the Western Pacific, later reclassified as a category 5 Super Typhoon and given the name Typhoon Yolanda (internationally known as Typhoon Haiyan) when it entered the Philippine Area of Responsibility (PAR). With sustained maximum winds of 235 kph near the center and gustiness of 275 kph, it made landfall over Guiuan, Eastern Samar early morning of November 8, 2013, cutting across the Visayan region (National Disaster Risk Reduction and Management Council (NDRRMC), 2014). The devastation it left behind due to storm surges 5 to 6 meters high (16 to 20 feet high) particularly along the coasts of Leyte and Samar that swept through densely populated areas, high wind speeds and heavy rain, caused the death of over 6,300 people from drowning and physical trauma, displacement of more than 4 million people, and damage to infrastructure.

From the images and videos that poured in shocking the global community, the tragic aftermath of Typhoon Yolanda will continue to haunt them for the next months or even years for those directly affected by it, and for the entire Philippines as well (Athawes, 2018). The only other typhoon with the same category 5 equivalent as Typhoon Yolanda was Super Typhoon Rolly (Goni) that made landfall in the province of Catanduanes on November 1, 2020, that brought torrential rains, violent winds, storm surges and mudslides as it swept across southern Luzon. UN OCHA (https://www.unocha.org/philippines) reported it affected around 2 million people, and more than 517 thousand people displaced.

The preceding are just two examples of what a disaster can do and the consequent humanitarian actions that ensue to respond and extend help to those affected. Over the past decade, countries and organizations endeavored to document and study these events to learn from them to be better prepared and respond more effectively. Direct Relief, a humanitarian aid organization, for example, compiled a list of ten disasters - Disasters that changed the world, that in more than many ways have affected the entire world, although these disasters do not necessarily have the fastest winds nor the highest death count. Rather,

they are *"… events that have had a profound impact on the rest of the world, challenging people's understanding of what a disaster can be, the damage it can wreak, and how to respond with better vision, awareness, and respect."* (Meyers, 2019). In addition to the two events already mentioned above, the others included: Haiti Earthquake (2010), Hurricane Sandy (2012), West Africa Ebola Outbreak (2014-2016), 7.8 magnitude Nepal Earthquake (2015), Category 4 Hurricane Harvey (2017), Category 5 Hurricane Maria (2017) devastating Dominica and Puerto Rico, Cyclone Idai (2019) in southern Africa, Global Wildfires (2019) affecting the Amazon, Indonesia, and the US.

One cannot miss mentioning the global pandemic due to the coronavirus covid-19 that has claimed many lives including those of health care providers foremost of whom were doctors and nurses, which until a definitive vaccine is developed will continue to threaten the world. The United Nations Development Programme (UNDP) described it as the *"…defining global health crisis of our time and the greatest challenge we have faced since World War Two. Since its emergence in Asia in 2019, the virus has spread to every continent except Antarctica,"* claiming more than five million deaths worldwide. (https://www.undp.org/coronavirus).

We have so far described natural disasters, but there are some disasters that can result from a combination of both natural and man-made causes, often referred to as "complex emergencies." These are situations characterized by disrupted livelihoods and threats to life due to warfare, civil disturbance, food insecurity, and large-scale displacement of populations (World Vision, Conflict and Complex Emergencies). When there is total or considerable breakdown of authority arising from internal or external conflict, widespread damage to communities and economies including extensive violence and loss of life, these call for a large-scale multi-faceted humanitarian assistance (IFRC, Complex Emergencies). Of late, even the provision of safe humanitarian access for aid workers have become more difficult given the threats and violence from Afghanistan and Syria to the Central African Republic and South Sudan. Although of smaller scale than those already mentioned, the armed conflicts in Zamboanga and Marawi, led to a massive humanitarian crisis with near 98% of the latter's population forcibly displaced due to the violence, severe food shortage, and constriction of local economies (UNHCR, https://www.unhcr.org/ph/marawi-crisis).

Deepening Your Understanding

Supplementary readings and resources:

The New Humanitarian. Feature article - **Ten humanitarian crises and trends to watch in 2019.** Accessed from: https://www.thenewhumanitarian.org/feature/2019/01/02/ten-humanitarian-crises-and-trends-watch-2019

Typhoon Haiyan: One of the worst tropical storms ever… Accessed from: https://www.arcgis.com/apps/Cascade/index.html?appid=bba35e41b8da423498ae3bf461e161c8

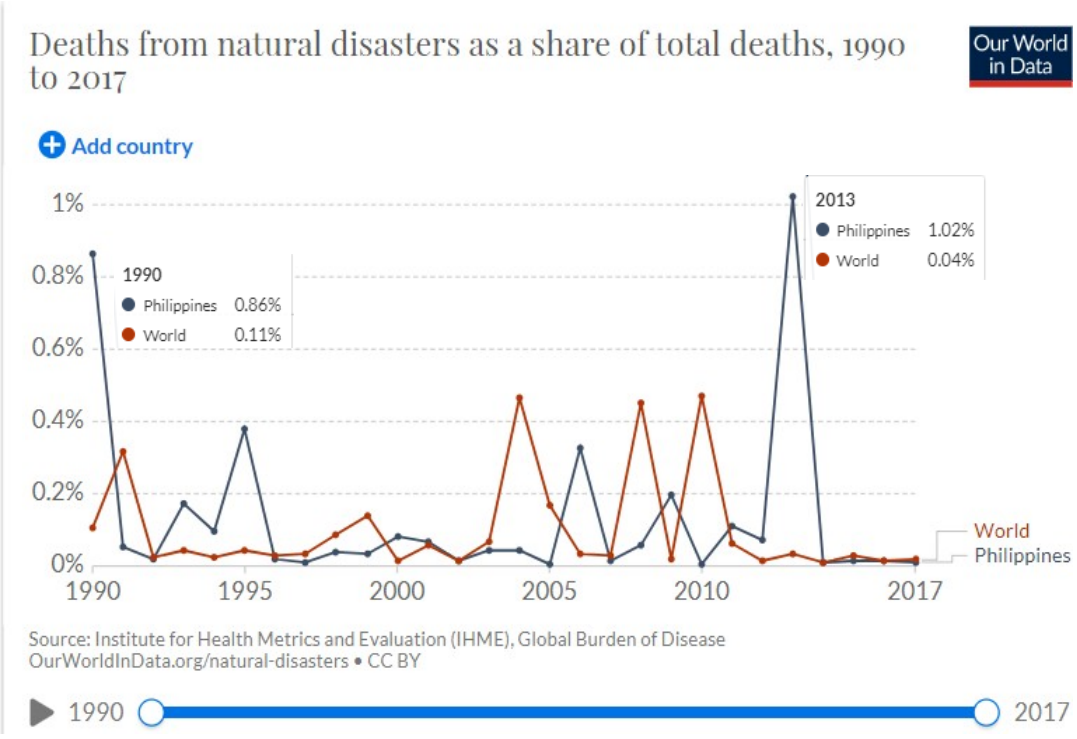
Direct Relief. **10 Disasters That Changed the World.** Accessed from: https://www.directrelief.org/2019/12/10-disasters-that-changed-the-world/

Disaster and risk trends occurring throughout the world, related factors, and impact

We cannot take the occurrence of disasters singly if we want to be better prepared not only to respond when they occur but more so to prevent, mitigate or lessen their impact so that recovery and development are not hampered. Thus, it is of value to investigate disaster risk trends or patterns in order to determine whether disaster risk reduction is being effective (Prevention Web, 2015). Several printed and online publications are dedicated to studying disaster occurrence and its consequent impact on individuals and societies. Let us look at the some of these summary findings (Ritchie & Roser, 2019) and determine what we can derive from these from the perspective of health. *(Note that deaths from the 2020 pandemic have yet to be factored in.)*

Since the 1960's up to 2019 there is an impressive decline in the number of deaths from natural disasters (from millions of deaths per year to an average of 60,000 over the past decade). From 2009, approximately 60,000 people globally died from natural disasters each year, which represents 0.1% of global deaths. However, this varies from 0.01% to 0.4% depending on the impact of the disaster event (Ritchie & Roser, 2019).

In the Philippines, the years 1990 and 2013 represent the highest share in global deaths due to the Luzon Earthquake (0.86%) and Typhoon Yolanda (1.02%), respectively. *Historically, droughts and floods were the most fatal disaster events. Deaths from these events are now very low – the deadliest events today tend to be from large earthquakes* (Ritchie & Roser, 2019). Nevertheless, deaths from extreme weather have not declined, and remains a contributor to global deaths. High losses of human life, though preventable, occurred more often in low-frequency, high-impact events such as earthquakes and tsunamis.



Disasters affect those in poverty most heavily: high death tolls tend to be centered in low-to-middle income countries without the infrastructure to protect and respond to events, thus they are more vulnerable to the effects of natural disasters. Overall development, poverty alleviation, and knowledge-sharing of how to increase resilience to natural disasters will therefore be key to reducing the toll of disasters in the decades to come.

Deepening Your Understanding

For more discussions check the website: **Our World in Data: Natural Disasters**
Ritchie, H., & Roser, M. (2019, November). *Natural Disasters*. Retrieved from Our World in Data: https://ourworldindata.org/natural-disasters - licence

- *Use the interactive charts and maps for comparison of the Philippines from other countries and across the world.*

Reflection: From these discussion and readings, what points (personal and/or as a future professional nurse) will I consider as my important take aways? ~ You can share this in our **N110 Course Journal**.

The Climate Change Crisis

The discussion above looks at disaster risk trends from the point of view of deaths or loss of lives. The following discussion will look again at disaster events taking into consideration factors that contribute to increasing the disaster risks in countries particularly vulnerable to natural disasters. Particular attention is given to climate-related disasters.

As mentioned previously, extreme weather-related disasters remain a contributor in global deaths since the 1960s, especially for the vast majority coming from low and lower middle-income countries. Heatwaves, then storms, have been the biggest killers. In terms of events, *83% of all disasters triggered by natural hazards were caused by extreme weather- and climate-related events*, such as floods, storms, and heatwaves in the past ten years. A further *1.7 billion people around the world* have been affected by climate and weather-related disasters during the past decade.

The International Federation of Red Cross and Red Crescent Societies (IFRC) World Disaster Report 2020 focused its analysis on the effect of climate change as the impact of global warming continues to kill people and devastate lives and livelihoods, which can worsen in the coming years without immediate and determined action.

> *"The frequency and intensity of climatological events are increasing substantially, with more category 4 and 5 storms, more heatwaves breaking temperature records and more heavy rains, among many other extremes. Loss of natural resources, food insecurity, direct and indirect health impacts and displacement are likewise on the rise. Many communities are being affected by concurrent and consecutive disasters, leaving them with little time to recover before the next shock arrives. The most at-risk people in these communities are in danger of being left behind if their needs and capacities are not understood, and their voices not heard"* (International Federation of Red Cross and Red Crescent Societies (IFRC), 2020).

Although the Covid-19 pandemic has shown how vulnerable the world could be in the face of a catastrophe of global scale, it likewise demonstrated that *"…humanity has the capacity to recognize and respond to a global crisis, finding resources where none seemed available, and taking unprecedented and rapid steps to respond to the crisis."* (IFRC, 2020).

Impacts of Disasters – affecting millions of people's lives

Disasters can have multiple impacts – death, injury and health impacts, displacement, damage to homes and goods, deaths of livestock, food insecurity, disrupted livelihoods and more. The 308 disasters triggered by natural hazards that occurred in 2019 together affected around 97.6 million people and killed 24,396 more across 128 countries (IFRC, 2020). With the climate crisis, this is expected to cause additional deaths related to health factors: malnutrition, malaria, diarrhea and heat stress, not counting those who will die due to disruptions in health services caused by extreme weather (Rettner, 2019).

There are ongoing efforts to decrease the impact of disasters through disaster risk reduction and climate adaptation, which combined with good policies on economic and social developments resulted in significant achievements in reducing the impacts of specific hazards such as floods and droughts. This is evidenced by the global decrease in deaths due to disasters as previously shown, despite increasing number of disasters over these past years. But we still see less similar successes in mitigating the impacts of extreme climate-related disasters (e.g., heatwaves and category 4 and 5 typhoons). This is particularly true for the poorest, most marginalized, and most at-risk countries who continue to suffer the brunt of extreme weather-related disasters through loss of life, greater susceptibility to disease, economic setbacks and erosion of livelihoods (IFRC, 2020).

World Risk Index: the Philippines

The following presents the key results or highlights on disaster risk for 181 countries, known as the World Risk Index (WRI). It is based on four components: exposure to natural hazards, susceptibility (based on infrastructure, food supply, and economic framework conditions); coping capacities (based on governance, health care, social and material security); and adaptive capacities (based on upcoming natural events, climate change, and other challenges) (Bündnis Entwicklung Hilft, 2020). The aim of the report is to show the disaster risk hotspots across the world and the fields of action to achieve the necessary reduction of risks.

- The Pacific Island state of Vanuatu leads the index as the country with the highest disaster risk (49.74). Qatar has the lowest risk (0.31).
- The disaster risk is geographically highly concentrated in 2020, with the hotspot regions of risk still located in Oceania, South-East Asia, Central America and West and Central Africa.
- Comparing the continents, Oceania ranks first in terms of disaster risk, followed by the Americas, Asia and Europe.
- In the ranking of vulnerability, Africa is followed by the continents of Oceania, Asia, the Americas and Europe in descending order

Based on the WRI, the Philippines ranks **9th** with a risk index of **20.96** (Exposure = 42.30; Vulnerability = 49.55; Susceptibility = 28.97; Lack of coping capacities = 39.32; Lack of adaptive capacities = 80.37) (Bündnis Entwicklung Hilft, 2020). This is attributable to the country's geographical context, with the highest risk posed by earthquakes (10.0) and tropical cyclones (9.5). The country also sits in the "Ring of Fire", thus the threat of volcanic eruptions, in addition to coastal hazards such as typhoons, flooding and rising sea levels (Sanchez, 2020). Altogether, this is an improvement for the country from a 28.25 WRI (rank second) in 2014 and 25.14 WRI (rank third) in 2018.

Deepening Your Understanding

The updated data can be found in the reference below: the Philippines ranked 8th with a risk index of 21.39

Supplementary reading: **World Risk Report 2021 – Focus: Social Protection**
Bündnis Entwicklung Hilft (2021): WorldRiskReport 2021. Berlin: Bündnis Entwicklung Hilft.
Accessed from: World Risk Report 2021

What's on Your Mind?

After going through the discussions in this study guide and the suggested materials and resources, reflect on the health and related issues and challenges that emanate given the Philippines' risk index and its components. Discuss this among your group mates and comment (1 – 2) on each other's' posts.

Post your reflection in **Discussion Forum 1: Living Amidst Disasters: Health and Related Issues.** This is found in the N110 course site.

The discussion forum will close on the date scheduled in the course guide.

N110 Laboratory Session

Watch, Observe and Learn

Click the **YouTube channel N110 Disaster Nursing** to watch video clips on: **"*Living Amidst Disasters*"**

There are several video clips and documentary on disasters listed in the playlist showing the environmental impact of these disasters. The first 2 videos present a compilation of various disasters occurring across the world in a given time.

The last 2 videos refer to the effects of Complex Disasters. One shows the consequence when medical personnel and hospitals are attacked in conflict zones. The videos are sourced from the International Committee of the Red Cross (ICRC).

What common elements do you see across the various disasters shown in the videos? Post your answers in the Activity Forum.

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