

Different Stages of Disaster the Wuhan Experience during the COVID-19 Community Outbreak

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Abstract

The outbreak of COVID-19 poses great challenges to China in all aspects of disaster management from emergency medical care to city logistic support. The authorities are particularly aware of the need for psycho-social responses as COVID-19 demonstrated very high infectivity and its deceased rates at the beginning was very high in the congested city of Wuhan. When the city was locked down with short notice the whole community of Wuhan citizens were thrown to horror and immense anxiety. Volunteers of medical, counseling and social work background from all over the country joined to form support teams on line, though they have limited training in crisis intervention. This study derived from the records of supervising these interdisciplinary support teams analyzed the contents as well as stages of psychological reactions of the victims, including the suspected patients, patients and their family members, ex-patients, and average community residents who at any time may fell sick. Records showed that there was a prolonged "Impact Stage" as it took considerable time for central government to mobilize medical resources from other provinces to rescue. Heroic stage was almost non-existent, for patients and their families, as they felt defeated and absolute hopeless when medical resources was totally out of reach. Disillusionment, marked by anger, depression and frustration, immediately set in. The building of cabin hospitals brought to the victims a temporary sense of security and safety, which may be regarded as a phase of Honeymoon. However, disillusionment started to rise again when patients were discharged to the community. Ex-patients were found to have a strong sense of shame while prejudice against the sick was widely held by residents. As PTSD normally has a delayed effect, the findings pointed to the urgent need of providing community mental health services targeting at the victims and their families. Proper health education to correct misconceptions towards the recovered patients must be launched to prevent blaming the victims.

Keywords: *Psychological Phases of Disasters; COVID-19; Community Based Crisis Intervention*

Introduction

Myers and Zunin [1] have summarized nicely the different stages of disaster in terms of psychological reactions, ranging from Impact, Honeymoon, Inventory to Recovery. However, each disaster is unique and the duration of each stage may be different. More importantly the dominant psychological reactions are different. When China was attacked by the COVID-19 in January of 2020 we thought that we can draw from our experiences from SARS, a similar public health crisis for China happened in 2003 and could handle this outbreak competently. Surprisingly, we found that he COVID-19 is totally different from SARS, in its way of spreading among the population and threatening the healthcare systems.

As early as January 23rd immediately after the COVID-19 outbreak, the Social Workers across Borders (SWAB), a Disaster Response NGO based in Hong Kong, was invited by various groups of social workers in Wuhan to provide crisis intervention training. After providing training, followed up supervisions were offered to volunteer groups composed of health professionals, psychological counselors and social workers who are recruited all over China to support through on line counseling the suspected patients quarantined in hotel or home. Later the services were extended first to patients admitted to cabin hospitals, then to discharged ex-patients who returned to their communities, and then to the Chinese community in South Korea. SWAB offered over 50 sessions of supervision averaging 2 hours each to more than 20 volunteer groups. From such service experiences we developed a good understanding of the psychological reactions of the victims and survivors of the COVID-19. It is found that dominant emotional expressions are absolute hopelessness, self-blame, numbing and survivors' guilt.

The aim of this paper is to describe in details the psychological reactions of the victims affected by the COVID-19 in Wuhan and discuss whether the above reactions follow the Disaster Stages Model proposed by Myers and Zunin. On the other hand, we hope this early analysis will throw lights on follow up mental health projects on how to prevent post traumatic disorder.

SWAB, responding to the COVID-19 outbreak

On January 23, 2020 announced by the Epidemic Prevention and Control Headquarter of Wuhan that the citizens should not leave Wuhan without special reason by land, by water or by air. This is actually a result of the plan made by the CPC Central Committee a day before to implement comprehensive and strict control over personnel outflow for the whole Hubei province and particularly the city of Wuhan. This is the milestone of the impact stage of the epidemic as there are many warnings deliberately circulated from different sources four to six weeks ahead. SWAB was immediately drawn to action.

Item	Date	Actions
1	January 22	SWAB published the Article on website "Social Workers to respond to the Novel Corona Virus 2019 Appeal". We advocates that social workers must rise to meet the challenges of this epidemic to protect and help the vulnerable groups
2	January 25	Web based training provided to the first batch of professional volunteers for Wuhan including medical students, social workers and psychological counselors, on "Crisis Interventions through web based platforms".
3	January 29	Second web based training for professional volunteers of Wuhan on "Community based Crisis Intervention".
4	January 30	With the support of a Hong Kong Charitable Fund, SWAB was able to donate 120 Life Support Respirator and delivered them to 13 hospitals in Wuhan. Some medical protection supplies like hats and shoes wraps were also sent to these hospitals timely.
5	February 6	A special web based training for social workers in Dong Guan, Guangdong Province, on "Community Prevention, Preparedness and Crisis Intervention".
6	February 7 onwards	Provide supervision services to professional volunteers groups including members of medical students, social workers and psychological counselors. In order to do so a group of experienced social workers with CISM basic training were recruited to serve as supervisors, also on voluntary basis. Supervision services were later expanded to groups serving Chinese students and residents living in Korea. Up to April 15, we have conducted more than 50 sessions of group supervisions, averaging one hour per session.
7	February 8	Two Online courses on Crisis Intervention, one for Social Work Teachers the other for healthcare social workers were released through East China Institute of Technology Publishers. The series is commissioned by the China Association of Social Work Education. Each series compose of 5 lectures, one hour each in duration.
8	February 15	An online training on Community Crisis Intervention was delivered to social and community workers serving Wuhan. The Model of AtCER was formally introduced. Concepts of positive psychology were also discussed and experiences were shared on how to apply these concepts to promote community recovery in the Town of Leigu after the Sichuan earthquake.
9	February 19	Web based supporting services were began to serve those Hong Kong residents who have to stayed in Hubei. This is organized directly by SWAB office at Wuhan which has a small team of 3 social workers.
10	February 20	Social Work support were provided to 5 other groups of Hong Kong residents in Hubei. A total of 20 social workers who have Hong Kong experience were recruited to help. Hong Kong residents have a lot of anxiety in these days as they also experienced difficulties in getting daily supplies like milk powder, masks and prescribed medicine.
11	February 24	SWAB with its Wuhan office launched a support services to more than 50 Rural Older People's Welfare Homes neighboring the City. Need assessments were conducted. Disinfection supplies were given to 23 of these homes in addition to emotional support for their residents as well as staff. Basic Food including eggs and rice seeds donated by Wuhan local merchants were also delivered to these homes.
12	March 26	Supervision services to Wuhan social work agency in Bai Sha community.
13	April 5	Extended supervision services to volunteer groups helping Chinese communities in South Korea.

Table 1: List of actions by SWAB 2020.

Below we shall discuss how these actions were in parallel to the Psychological Stages of Disasters and what characteristics the people demonstrated.

Psychological stages of disaster impact

Psychologists want to map out people’s psychological reactions at different phases of disasters. It is particularly important to micro-interventions aiming to help people recover from the turmoil of events and preventing them from developing mental health disorders. Adopted by the Center of Mental Health Services, US Department of Health and Human Services, the model presented by Myers and Zunin [1] provide a good description of the psychological processes of a person challenged by a critical incident (Table 2). Major phases include Pre-Disaster, Impact, Heroic, Honeymoon, Disillusionment and Reconstruction.

Warning and Threat Phase	Disasters vary in the amount of warning they give to the affected community. With no warning people feel unsafe and more vulnerable.
Impact Phase	The scope in Loss of lives and properties caused by the disaster are directly related to the psychosocial reactions.
Rescue or Heroic Phase	In the immediate aftermath, people focused on survival, rescuing others and run to safety. Altruism is common among survivors and responders but their work may not be efficient and effective.
Remedy or Honeymoon Phase	When governmental and voluntary help is more available people have a sense of hope and unity. This psychological reaction however may be a temporary one.
Inventory Phase	Survivors begin to recognize the limits of available disaster assistance. Unrealistic optimism gives way to exhaustion and hopelessness.
Disillusionment Phase	The reality of losses become apparent as disaster assistance fail to bring people back to original lifestyles and living standards. Hostility against community is common.
Reconstruction or Recovery Phase	People begin to realize that they have to rely on themselves to rebuild their lives and communities. People begin to see meaning and opportunities to growth in spite of pain and losses.

Table 2: Psychological phases of disaster (Myers and Zunin, 2000).

According to Dewolfe, people’s reactions during the Impact Phase range from “constricted, stunned, shock-like responses” to “panic or hysteria”. The survival and physical well-being of themselves and their loved ones are of primary concerns. If families were apart they will face great anxiety until they are reunited [2]. Her analysis was most suitable in describing the survivors in Wuhan. A brief review the Wuhan situations along the Zunin and Myers’ phases, it could be observed that:

- 1. Missing of a warning phase:** In the case of COVID-19, early warning systems were dysfunctional. Consequently, all residents of Wuhan were shocked by the shutting down of the city on January 23, 2020. To be specific, they were totally horrified with no preparation.
- 2. Directly entering the threat phase:** An Pan., *et al.* from the Huachong University of Science and Technology analyzed the outbreak from December 8 to March 8. It is reviewed that only in the Wuhan University Central Southern Hospital alone, there were 138 confirmed cases from January 1 to Jan 28. Among them 59% were infected in community. The rest of 41% or 57 cases were infected in hospital, including 40 medical staff and 17 hospital patients. The high numbers of medical staff being infected sent a clear signal to the public that the virus is very contagious and even well trained staff did not have good protection [3].

The National Health Commission of China reported on January 22 that there were altogether 571 confirmed cases, with 95 seriously ill and 17 deaths. The numbers multiplied rapidly in a week's time. The common symptoms were dry coughing, short of breath, gradually developing fever and extreme fatigue. It was also a high season for common flu and many people have similar symptoms. Facing this fatalistic public health issue, those suspected that they have caught the disease were desperate and rushed to major hospitals for diagnosis and treatment.

- 3. A prolonged impact phase:** Hospitals crowded with suspected patients in turn cross infected many medical professionals. The Huachong University of Science and Technology Report mentioned above divided the time frame into five sub-periods. Firstly, from December 8 to January 9, there were no intervention. The second period, from January 10 to 22, was characterized by massive human movement due to the Chinese New Year holiday. From January 23 the city was shut down meaning traffic restriction and home quarantine, which was practiced until February 1. Then from February 2 to 16 centralized quarantine and treatment were adopted. Finally, from February 17 to March 8 when the study was concluded, universal symptom survey was conducted for all residents in Wuhan. Not until April 8 the Wuhan shut down of was terminated. In this period a total of 32 583 confirmed cases were recorded with most cases occurred between January 20 and February 6, with a spike on February 1. It is obvious that the centralized quarantine and treatment were extremely effective in bringing the daily records of confirmed cases down even though a comprehensive testing was provided after February 17.

If the psychological impact phase could be regarded as ended when cases began to decline, then February 1 may be considered the dividing date. However, most people in Wuhan would consider the date of re-opening the city, that is on April 8, 2020, as the end of impact.

Residents of Wuhan, subjectively defined, experienced an extremely long Impact phase caused by the COVID-19 outbreak. It began on Jan 23, if not earlier, till April 8. A prolonged impact phase characterized by home isolation undoubtedly led to widespread anxiety and depression among the residents.

- 4. Whose rescue and heroic phase?:** Patients have a very short heroic phase. Their physical conditions, coughing and difficulty to breath, is exhaustive and demoralizing. They did not have the energy to fight the disease without supportive medicine. Heroism belonged to the medical staff who have to serve so many patients even though they do not have sufficient protection themselves. Running out of masks, safety eye goggles and protective clothing, they held on to their duties around the clock. Heroism also belonged to the many volunteers who provided transportation for medical staff and helped delivering food to the older people.
- 5. Finally, the remedy or honeymoon phase:** For many patients the construction of and admission to cabin hospitals represented a remedy. It means only till February 16 when the government abandoned home quarantine measures and built enough hospital beds to admit all suspects, the remedy stage was reached. The policy is named as "Admit All, Treat All". We learned that some healthcare scientists have talked about the herd immunity approach. They want to avoid perhaps the scenario of having all patients rushed to seek intensive care. Such calculated and rational approach however has little appeal to the frightened people. Though we know admitting into a hospital doesn't mean cure "guaranteed". But a hospital bed with medical staff around provided them the necessary sense of safety and security.

For other residents of Wuhan, admitting all suspected cases to cabin hospitals is also a signal of safety and remedy. Only when they know that infected patients would be taken away from the community then the residents felt less fearful for being infected. Self-interest is part of the human crisis reactions which helps us to stay away from danger. Unfortunately, sometimes the interests of other parties are denied. Congested living conditions in older urban areas also contributed to the kind of community phobia against people who are suspected or confirmed contracting the disease.

6. **A painful inventory phase:** As soon as the medical turning point is in sight, the ship of psychological inventory taking set sail. A research published by the Shanghai Mental Health Center, with 52730 responses collected from January 24 to February 10, suggested that people in Hubei, Hunan and Hebei, three central provinces, have a much higher rate of psychological distress than other provinces during the epidemic [4]. Another research conducted by the Huachong Normal University, from February 9 to 23rd, showed that public in Wuhan have higher reporting symptoms of sleep problems, depression, compulsive behavior, anxiety, fear and suspected physical sickness. The latter is a country wide research with a very large sample size of 76530. A psychiatrist Tong Jin [5] shared that a very common feeling among the confirmed patients are a strong sense of shame and guilt. The COVID-19 outbreak in China was connected with family gatherings before Chinese Lunar New Year. Often several members got sick one after the other as cross infection occurs over the dinner tables. If lives were lost within a family in this manner intense survivors' guilt is unavoidable.
7. **The hardened disillusionment phase:** Massive sudden deaths also caused a problem for proper burials and condolences. Even for those who do not have a religion, certain respectful logistics in a funeral service attended by friends will help the family members of the deceased to ventilate their emotions. Now it is not possible because of the quarantine. In other words the Disillusionment phase arrived abruptly and gave no time for all to hide and grief. Among victims probably non-rational coping may be taken and post traumatic stress disorder may be record high.
8. **The unpredictable reconstruction or recovery phase:** There are too many demands for psychological services and we do not know yet what can we do and how to do it. We believe a long term and community approach must be adopted. Setting up of psychosocial services centers at the community level is under consideration.

Discussion

Researchers found that the needs presented to the hotline services after the outbreak of SARS in 2003, were mainly information seeking, availability of resources and then personal problems and emotions [6]. The three aspects form the most frequently raised concerns by help seekers in hotline services, one followed the other as SARS crisis moved beyond the impact stage. A similar pattern was witnessed in the Wuhan web-based counseling services reflected by our supervision records. It is important to point out that though the presenting problems at the early stage were informational and resource needs, they are inseparable from emotional needs expressed in terms of anxiety, fear, helplessness, despair and exhaustion.

Up to March 12, there were altogether 44491 verified cases of corona viruses from the city of Wuhan. Six city districts have recorded more than 5000 ex-patients [7]. Community leaders and youth volunteers can be trained to identify and report people who exhibit depressive symptoms. Here social workers should employ their community organizing skills to build mutual support network. Albert Robert is right to point out that social workers, unlike mental health workers, have to look at disasters with a wider perspective [8].

One social strength we can capitalize on is the sub-culture of the residents of Wuhan.

How to applying Crisis Intervention skills in these complex situations is definitely challenging to all disaster workers. Community Health and Mental Health Educational and Promotional Projects supplemented by case and group work, in collaboration with mental health professionals, psychological counselors, charitable and volunteer organizations, should be launched as soon as possible.

The city though not as prosperous as other political and economic capitals in coastal region, it is famed for its history and its central location in China. It is an inland trading center before 1949, an industrial center after 1949 and a hub for higher education until now. Their people are proud, and pragmatic. As a result they are not at least at the beginning receptive to counseling services. They believe that they have to handle their hardship on their own and by themselves. Hopefully self healing behaviors will go beyond our imaginations.

Conclusion

To conclude, this COVID-19 crisis in Wuhan witnessed:

1. A prolonged shocking and frightening impact phase with high infectivity and initially also high fatality (deceased rate dropped only after more abundant medical supplies were in place);
2. A difficult gap period before remedy phase was possible after the government mobilized resources nationally. This gap of two weeks is very short if we take into account of the scope of mobilization. It is however rather long for those who got seriously ill;
3. A compounded Inventory plus Disillusionment phase. Hard facts of reality left no time for grief and condolences as life must go on;
4. The most common and striking emotions are fear, hopelessness, grief, guilt and shame, across the various phases;
5. Community mental health projects to counteract “Shame and Stigma” must be launched to facilitate recovery.

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