

The Links between Public Health Crises and Suicide

Literature Review Summary

This review of the literature was conducted based on the following guiding questions: (1) What are the risks of suicide during periods of isolation (quarantine) during epidemics, pandemics, or other outbreaks? (2) What psychological factors (or risk factors or predictors associated with suicide) are prevalent during periods of public health crises/large scale disasters?

Studies covering Severe Acute Respiratory Syndrome (SARS), H1N1 influenza, Ebola, Middle East Respiratory Syndrome (MERS), and the Spanish influenza outbreaks were reviewed. Outcomes include suicide; suicide attempts; suicidal ideation; and psychological and other outcomes related to suicide risk, such as despair and hopelessness.

PSYCHOLOGICAL IMPACT OF QUARANTINE

- **Prolonged durations of quarantine may be associated with symptoms of post-traumatic stress disorder (PTSD), avoidance behaviors, and anger** (Hawryluck et al., 2004; Brooks et al., 2020; Liu et al., 2012). Hawryluck et al.'s (2004) Toronto-based study of those quarantined during the Severe Acute Respiratory Syndrome (SARS) outbreak found longer durations of quarantine was associated with an increased prevalence of PTSD symptoms. Similarly, Brooks et al.'s (2020) rapid review of studies of pandemics reported a positive association between length of quarantine and PTSD symptoms, avoidance behaviors, and anger. Among quarantined parents and children, post-traumatic stress scores of children were four times higher than those not quarantined. Quarantined parents were more likely to report symptoms of trauma-related mental health disorder than parents not quarantined. Conversely, Wang et al.'s (2011) study of the 2009 H1N1 Influenza epidemic among undergraduate university students in China found no significant difference in immediate negative psychological consequences between quarantined and nonquarantined groups.
- **High prevalence of symptoms of depression were also found among those who had been quarantined** (Hawryluck et al., 2004). One study found that being quarantined during the SARS outbreak increased the odds of having a high level of depressive symptoms up to three years later (Liu et al., 2012).
- **Among hospital staff, being quarantined is a predictor of acute stress disorder and stress related responses.** Exhaustion, detachment from others, anxiety when dealing with “febrile” patients, irritability, insomnia, poor concentration and indecisiveness, deteriorating work performance, and reluctance to work or consideration of resignation were found at increased levels among hospital staff who were quarantined (Brooks et al., 2020).

- **Quarantined healthcare staff experience longer-lasting post-traumatic stress and depressive symptoms compared to the general population.** In their rapid review of studies, Brooks et al. (2020) found quarantined staff were more likely to report high depressive symptoms at a three-year follow up and experienced post-traumatic stress symptoms at more severe intensity than the general population.
- **Among healthcare workers post SARS outbreak, alcohol abuse or dependency symptoms were positively associated with being quarantined and working in high-risk locations** (Brooks et al., 2020).
- Avoidance behavior (avoiding direct patient contact or not reporting to work) were positively associated with quarantine. Quarantined healthcare workers were significantly more likely to report stigmatization and rejection from people in their local neighborhoods.
- People who had been quarantined reported higher prevalence of low mood, irritability, confusion, fear, anger, grief, numbness, and anxiety-induced insomnia, though symptoms of anxiety and anger were reduced 4-6 months post-quarantine.

SUICIDE RISK AND PSYCHOLOGICAL IMPACT DURING OUTBREAKS

- **During the SARS epidemic, a significant increase in suicide was reported among older adults.** Hong Kong based studies suggested that loneliness and disconnectedness among adults 65 years and older during the 2003 outbreak were likely associated with the excess suicides of older adults (Cheung et al., 2008; Yip et al., 2010). In their study, Yip et al. (2010) found major stress among older adults attributable to perceived burdensomeness to their families during the epidemic. They also suggested that the suicide rates were a result of “social disengagement, mental stress, and anxiety at the time of the SARS epidemic among a certain group of older adults.” Furthermore, Chan et al. (2006) reported that the **increased risk of completed suicide was found among female elders**, but not in male elders or the population under 65 years of age and attributed this to use of social and health services and the lack of access during the epidemic.
- **Being an outbreak patient is associated with increased stress, fear, anxiety, depression, and suicidal ideation.** Among SARS patients, studies report PTSD and depressive disorders as the most prevalent psychiatric conditions experienced at 30 months post outbreak (Mak et al., 2009; Cheng et al., 2004; Cheng & Wong, 2005; Lee et al., 2006). A case series study of 10 SARS patients with no previous psychiatric history prior to the outbreak found all patients reported psychiatric problems including anger, anxiety, and suicidal ideation (Cheng et al., 2004) as well as low self-reported quality of life (Cheng & Wong, 2005). Additionally, having a family member killed by SARS was a risk factor predisposing individuals to the development of high distress after discharge. Chua et al. (2004) found that stress was significantly higher in SARS patients compared to participants with no diagnosis. Stress, in turn, was correlated significantly with negative psychological effects: worrying about health, fear of social contact, worrying about finances, poor sleep, weepiness, loneliness, boredom, poor concentration, depressed mood, nightmares, and impaired judgement. Hall et al. (2008) and Park and Akello (2017) reported on studies of the Ebola outbreaks in Kikwit, Democratic Republic of the Congo in 1995 and in Gulu, Uganda in 2000–2001 and found that patients and caregivers exposed to Ebola reported increased

levels of fear. Other studies found that Ebola virus disease patients and their families have also been reported to have experienced post-traumatic stress, insomnia, fatigue, depression, anxiety, trauma, suicidal ideation, panic, and other manifestations (Tucci et al., 2017; Lötsch et al., 2017).

- **Exposure to other traumatic events before the SARS outbreak and perceived SARS-related risk level during the outbreak were found to increase the odds of having a high level of depressive symptoms three years post-outbreak** (Liu et al., 2012).
- **Outbreak patients who were healthcare workers experienced increased stress which, in turn, correlated with negative psychological effects.** Psychological stress among healthcare workers was reported as a result of exposure to Ebola (Hall et al., 2008) Among SARS patients who were healthcare workers, studies find increased risk for the development of high distress after discharge compared to other SARS patients (Cheng and Wong, 2005; Chua et al., 2004). One study found that **SARS patients who were healthcare workers had significantly more “positive psychological effects”** (e.g., awareness of hygiene, focus on current affairs) **and more “negative psychological effects”** (e.g., worry about health, fatigue, fear of social contact, poor sleep, weepiness, loneliness, boredom, poor concentration, depressed mood, nightmares, and impaired judgment) compared to other SARS patients. (Chua et al., 2004)
- **Acquaintance with or direct exposure to someone with a diagnosis of SARS was also associated with PTSD and depressive symptoms** (Hawryluck et al., 2004).
- **Temporal trend studies report that psychobehavioral responses such as anxiety mirror reports of new case counts.** One study found that anxiety levels were predicted by (mirrored) daily reports of incident case counts during the SARS outbreak in Hong Kong (Leung et al., 2005). Similarly, Wong and Sam (2010) reported in their cross-sectional study that fear, avoidance behaviors, and health-protective behavior (e.g., covering mouth when sneezing or coughing, washing hands) mirrored that of the official number of deaths reported by local media during the H1N1 influenza outbreak in Malaysia.
- In one study exploring the impact of the **1918-1920 Influenza (Spanish Flu) Epidemic, a significant positive association was found between the pandemic and suicide** (Wasserman, 1992). The author suggested that decreased social integration during the epidemic, as well as the fear of influenza, likely increased suicide.

Note: While this is a dated article, with hypotheses based on since disproven or unsupported theories (e.g., young people are less likely to die by suicide), its findings are relevant. “The epidemic affected all regions of the nation and significantly reduced social interaction by causing the closing of schools, churches, theaters, moving picture halls, dance halls, saloons, and sporting arenas and the curtailment of the 1918 political campaign....The disease locally isolated members of the mass public, and created a high level of fear among those afflicted and others who may have had contact with them.” The author analyzed suicide rate during this period (between 1910 and 1920) and found a significant positive association between suicide and the epidemic.

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SEARCH PARAMETERS

EBSCO Databases

- Academic Search Complete
- APA PsychArticles
- APA PsycInfo
- ERIC
- Medline
- PsychInfo
- Psychology and Behavioral Sciences Collection
- PubMed
- SocIndex

SEARCH TERMS

PANDEMIC – “epidemic” or “pandemic” or “outbreak” or “disease” or “public health crisis”

QUARANTINE - “quarantine” OR “isolation” OR “isolate”*

SUICIDE - “suicide” OR “suicidality” OR “suicid” OR “suicidal ideation” OR “suicide attempt”*

LIMITERS

- 30 years: January 1990 – present (February 2020)
- Peer-reviewed journal articles
- English language
- Exclude dissertations, book reviews