Foreseeable psychological impact of COVID 19 in Sri Lanka

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Abbreviations:
WHO: World Health Organization
SARS: Severe Acute Respiratory Syndrome
GHQ: General Health Questionnaire
PTSD: Post Traumatic Stress Disorder
PPE: Personal protection equipment
PFA: Psychological First Aid

Abstract:

Introduction:
COVID-19 outbreak is affecting a vast population around the world since it's' onset in the latter part of 2019. The infection has become a pandemic despite different preventive measures taken by countries and organizations. Sri Lanka too has been affected by the infectious disease. Authors of this article aim to predict the psychological impact of COVID-19 pandemic on Sri Lankans. It is important for the mental health workers to stay ready for psychiatry sequel of the outbreak. Appropriate psychological interventions should be carefully planned to suite the affected and vulnerable individuals.

Methods:
The paper is based on published literature on infectious diseases and disasters and clinical experience of the authors. Relevant information was gathered from previous studies done on pandemics, various documents and policy reports. A considerable number of literatures was reviewed and assorted in order to compile this article.

Results:
Affected and vulnerable children and adults, as well as the staff could experience psychological manifestations during post-COVID period in a context of psychosocial difficulties. There could be disease relapses, precipitation of mental health conditions and disease onset as psychological consequences. Literature suggests that females, front-line health care workers, quarantined people and patients with psychiatric history are at higher risk. PTSD may not have a high incidence among general public, whereas other conditions such as depression, anxiety, grief, substance related disorders, insomnia, avoidance behavior, vigilant hand washing and psychosis will be more prevalent. Health workers may experience stress, burnout, isolation, depression, anxiety, insomnia, and PTSD. Quarantined individuals have an increased risk of acute stress disorder, PTSD, substance abuse and dependence, irritability, anxiety,

insomnia, poor concentration and work performance, indecisiveness and depression. Xenophobia, infodemics, stigma and addition of newer psychopathology may complicate the picture. Direct and indirect effects of the pandemic will cause variety of short and long term mental health ailments and symptoms.

Discussion:

Generalizability of overseas research based on other pandemics and disasters on Sri Lankan population will not be well accurate. However, authors would like to stress the importance of early identification of mental health problems, and appropriate intervention to limit psychological catastrophe of COVID-19.

Conclusions:

Affected individuals and vulnerable health care workers will need to be screened to detect mental health problems. Frontline staff, affected females, elders and quarantined individuals will need special attention. Knowledge on previous disaster management will help organizing support networks and assessment mechanisms. Psychological first aid (PFA) will play an important role. Multicenter studies, screening tools, Special clinics, training programs and work-shops will be necessary to improve the psychological out-come.

Introduction:

Pneumonia of unknown cause was detected in Wuhan, China in December 2019 (1). The outbreak was found to be due to a Corona virus spread, and it was declared a Public Health Emergency of International Concern on 30th January 2020 (1). "Novel coronavirus" was the initial term given for this brand-new virus creating havoc on the unprepared communities. Later, it was officially named as COVID-19 by WHO considering many different aspects (1). The WHO on 11th March 2020 declared COVID-19 a pandemic, emphasizing over 118,000 cases of the condition in more than 110 countries and territories around the world, and the worsening risk of further global spread (1). First China, and then Europe and the US have become the epicenter of virus spread. At the time of writing this article, millions of people have been affected by COVID-19 with tens of thousands of recorded deaths (2). A proportion of people have completely recovered from the condition (2). Currently, the virus is affecting more than 200 countries and territories globally (2). Situation in Sri Lanka is fluctuating with more than 180 positives and 7 deaths currently (2). As with other respiratory tract infections, public health measures are critical to control the spread of illnesses (1).

Countries, organizations and individuals have taken many different measures to curb this dangerous situation. World Health Organization has instructed the public to adhere to health measures such as staying home when sick, covering mouth and nose with flexed elbow or tissue when coughing or sneezing, Disposal of used tissue immediately, washing hands often with soap and water and cleaning touched surfaces and objects frequently (1). Countries have taken stringent actions such as locking down areas, imposing curfew, travel restrictions and social distancing. Self-quarantine and quarantine in centers is in place to prevent further spread of the disease from an infected personnel. Testing facilities and hospital capacity have been promptly improved to identify and treat affected patients. Health staff is working 24/7 to manage patients. Many governments are expecting an economic breakdown and unemployment within a short period of time. Share markets experience collapse since the onset of the outbreak.

In Sri Lanka, government has taken number of prompt measures to keep the situation under control. The government provided facilities to bring students studying in China at a very early stage. Air-port has been closed, and curfew has been imposed to prevent social contacts and individual movements. High risk areas have been identified and locked-down. Sri Lankan armed forces are managing quarantine centers effectively covering affected areas. Hospitals have taken variety of measures to provide medical facilities including testing and risk patient isolation. Contact persons have been advised to self-quarantine in their houses. In addition, community programs are providing health services to patients who are unable to access health facilities. Government has introduced number of stimulus packages to prevent a financial crisis. Intelligence services, media, forces and health staff are working tirelessly to bring the situation under control. Amidst all the measures, there's a risk of further spread of the virus.

Available literature gives us an insight into the possible foreseeable mental health impact of this devastating pandemic. Emerging new infections exert a significant psychological impact on health care workers and the community, which may require appropriate interventions (3). The authors of a study done in a large teaching hospital in Toronto in 2003 during SARS outbreak concluded that significant levels of psychiatric morbidity among almost two-third of the staff, and almost one-third of respondents had GHQ scores indicating emotional distress (3). The same paper suggested that improvement of psychological well-being of health care providers, their families and the community is crucial (3).

Patients with SARS found to have fear, loneliness, boredom, anxiety, insomnia and anger, and they had worries about quarantine and contagion on family members and friends (4). Caring for health care workers as patients and colleagues showed emotional difficulties (4). Both staff and patients experienced anxiety related to uncertainty and stigmatization (4). Perception of risk and anxiety levels of the public was very significant during SARS (5). During an outbreak of botulism in the United States, a study indicated that family members were significantly fearful and depressed than patients during the first week, and as fearful and depressed as patients during the second week of hospitalization or treatment (6). Anxiety and helplessness decreased significantly by second week (6). A 2004 research concluded that general stress and negative psychological effects were high in SARS patients, particularly among infected health staff (7). This could increase the risk of mood and stress-related disorders, and functional impairment was significant in the post-recovery phase (7). During 2003 out-break, people impacted by SARS had higher depressive levels, poorer neighborhood relationships, poorer self-perceived health, and a higher economic impact than the 'non-impacted group' (8). The 'impacted group' had higher psychosocial impact possibly due to the SARS impact, the economic crisis, poor self-perceived health conditions, and decreased social support (8).

A review study has found that features such as avoidance behavior (avoidance of crowds, people who were coughing and sneezing, enclosed spaces, public spaces), vigilant hand washing, not reporting to work and deterioration of work performance, alcohol abuse or dependence, anxiety symptoms, feeling of anger, exhaustion and irritability, insomnia, symptoms of depression, symptoms of acute stress disorder and PTSD were significantly higher among quarantined children and adults (9).

Literature regarding psychological sequel of a pandemic in Sri Lanka is not available. However, though a different calamity, it is worthwhile to get some idea based on papers on psychological impact of disasters such as tsunami. The prevalence of mild-moderate mental disorders in the population is around 10% and this can increase to around 20% after a disaster (9). Severe mental health conditions, such as psychosis or severe depression, typically affect 2–3% of a population, but can increase upto 3–4% after a disaster (10). A 2005 study done after Tsunami in Sri Lanka identified 8% of the clients as suffering from severe PTSD, 7% were diagnosed as vulnerable to PTSD with some PTSD symptoms and a significant number of clients suffered from related disorders including severe stress, anxiety, somatoform and sexual disorders (12). However, another research concluded that most survivors of the tsunami have shown remarkable resilience (13).

Psychological interventions to affected and vulnerable individuals and groups need to be carefully planned in advance. Post-tsunami experience in Sri Lanka highlights the importance of limiting unsolicited, inappropriate iatrogenic interventions by local or international agencies to vulnerable populations (14). There's a false belief that psychosocial interventions can be delivered as 'relief packages' in much the same way as hygiene kits are distributed to those displaced (14).

Methods:

This study used a qualitative approach including literature review and document analysis. The review made on a wide range of data sources such as journal articles, national and international documents, policy reports, and conference papers. Retrieval of articles was done using electronic data-bases such as PubMed, Medline and Science Direct. In addition, details were gathered from WHO guidelines and documents published by the Ministry of Health, Sri Lanka. Articles related to SARS outbreak in 2003, and H7N9 in 2013 were reviewed. Information of the patients with psychiatric conditions was collected from out-patient and inpatient clinical records.

Results:

The COVID-19 is not just a simple medical phenomenon. It affects individuals and communities on many different levels, including psychological disruptions. Stigma, xenophobia, stress, panic, anxiety, PTSD, depression and related behavioral responses such as hoarding face masks, food and medical supplies have already been reported in countries. There could be an overall lower perceived state of health among public. Patients with psychiatric morbidities will be particularly vulnerable to these effects.

Resilience among the affected will be a crucial determinant of the psychological aftermath of COVID-19 pandemic. A Sri Lankan study examined adaptive and maladaptive development in a cohort of children affected by war, and contrary to previous studies, authors concluded that most orphans demonstrated inner peace and resilience after exposure to war (15). Resilient orphans identified religious practices as useful in promoting their faith, personal well-being, and sense of belonging (15). Number of different aspects, including resilience, need to be considered when predicting the future of current pandemic. Following psychological impacts could possibly be encountered by the mental health workers following the ongoing viral out-break.

Psychological impact due to restricted environments

As safety measures to control the spread of COVID 19, Sri Lankan government advised on physical distancing, locked down high risk areas, imposed curfew and implemented quarantining. Passengers returning from abroad were required to be quarantined in dedicated centers. So far, around 3500 individuals have been under quarantine in these centers for duration of 14 days. Contacts of COVID 19 positive patients are required to be self-quarantined. They are instructed not to leave their homes and not to have any visitors during the 14 day period. The process is being supervised by Public Health Inspectors and Medical Officer of Health of the relevant area.

While physical distancing is an essential measure to control the spread, evidence suggests that it gives rise to adverse psychological consequences in the long term.

In a study that investigated stress reactions among 338 staff members in a hospital in East Taiwan during SARS outbreak in 2003, five percent suffered from an acute stress disorder and having been quarantined was the factor most predictive of symptoms of acute stress disorder (16). In the same study, quarantined staff was significantly more likely to report 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.

In another study on psychological impact of the 2003 SARS outbreak on hospital staff in Beijing, China, effect of being quarantined was a predictor of post-traumatic stress symptoms in even 3 years later (17). In a study on randomly selected sample of 549 employees of a hospital in Beijing, being quarantined during the 2003 SARS outbreak was found to increase the odds of having a high level of depressive symptoms 3 years later (18). Several other studies that only investigated those who were quarantined, reported high prevalence of depression (19), low mood (20), irritability (20), insomnia (20), stress (21), emotional disturbance (22) and anger (23).

Mental health problems among general public

Sri Lankans generally maintain a high level of social and physical connectedness. It is more so in the month of April in which they celebrate Sinhala and Tamil New year with family and friends. Currently Sri Lankan community's physical connectedness is disrupted by the safety measures such as imposing curfew, locking down and quarantining. This could lead to psychological distress among the general public.

According to latest statistics, prevalence of depression in Sri Lanka is 4.1%, while that of anxiety disorders is 3.4% (24). As a result of COVID 19 there could be an increase in prevalence of depression and anxiety, along with symptoms of low mood, irritability, insomnia and emotional disturbance among general population in Sri Lanka.

Elderly have been identified as more vulnerable to COVID 19 infection and death due to its complications. This could be a cause of fear and anxiety among elderly population resulting in a higher prevalence of depression and anxiety.

According to records of Central Bank of Sri Lanka, unemployment rate in the country was 4.2 but many more people have become unemployed since curfew was imposed. This affects most of the categories ranging from daily paid laborer to businessman leading to psychological distress.

According to statistics of Sri Lanka Bureau of Foreign Employment, nearly three million Sri Lankans are employed overseas and some of them have died following COVID 19 infection. Although government provided facilities to rescue students studying in China in early February, people cannot return now due to strict travel restrictions. This situation could give rise to high level of anxiety and feelings of helplessness among friends and family of the Sri Lankans who work abroad. At the time of writing, six Sri Lankans succumbed due to the infection. As the disease advances in the community, there will be psychological impact due to bereavement and grief. Xenophobia is another possibility where people are prejudiced against individuals from other countries. Tourism may experience a downturn.

Safety instructions could have long term effects among the general public. Even after the COVID 19 pandemic is over, there could be an increase in avoidance behavior such as avoiding crowds, people who are coughing and sneezing, enclosed spaces and public spaces. Uncertainty about future and worrying thoughts about whether food and other essential supplies will be available during a lockdown will have lasting effects on the general population leading to an increase in hoarding of essential items.

Infodemics and digital screens

COVID 19 is the first global pandemic in the social media age. Lock down and physical distancing makes people depend more on social media to connect with the society. They are exposed to both reliable and unreliable information about increasing numbers of infected people and deaths, which in turn can cause psychological distress. Infodemics is an identified issue during and after a disaster where people collect too much information making it difficult to find solutions. Addiction to digital screens could be another possibility.

Post-Traumatic Stress Disorder

Prevalence of disaster-related PTSD is not as high as it could be expected in a disaster-prone country like Sri Lanka. This could be due to strong community ties, as well as the tendency of people to help others in a crisis with altruistic attitude. In a study conducted in Sri Lanka, traumatic events were reported by 36.3% of participants but lifetime PTSD was present in only 2.0%. (25) Therefore, it is unlikely to see a highly increased prevalence of PTSD among resilient Sri Lankans in the long term following COVID 19.

Impact on patients with psychiatric illnesses

Patients with pre-existing mental health conditions could be considered as a highly vulnerable group for adverse psychological impact of a COVID 19 pandemic.

Due to lock down and curfew, patients with psychiatric illnesses who are on treatment, have difficulties in attending their clinics regularly. Although government accepts clinic records as a curfew pass, only a limited number of patients attend Psychiatry outpatient clinics at present. Mental Health Units attempt delivering medication to patients with the help of Community Psychiatric Nurses and the Postal Department but there are practical limitations. We can predict an increase in relapse rates of psychiatric illnesses in near future due to discontinuation of psychotropic medication.

Authors came across several patients whose psychopathology was colored by COVID 19 pandemic. One patient believed that he is infected with COVID 19, and another believed his enemy is trying to infect him with the same. A young male with OCD rationalized his frequent hand washing, as it prevents spreading of COVID 19. Several other patients presented with recent onset shortness of breath, with anxiety of getting infected with COVID 19. It is possible that the trend of incorporating COVID 19 into the content of psychopathology will be seen more frequently in future.

Quarantining, both institution based and home based can affect mentally ill patients in the long term. Evidence suggests that presence of a history of psychiatric illness is associated with experiencing anger and anxiety four to six months after release from quarantine. (26)

During first few weeks of imposing curfew, authors observed an increase in the number of patients presenting with Heroin, nicotine and alcohol withdrawal symptoms. Inability to find substances during curfew period could be the reason for the above observation. While some of them might continue to be abstinent, evidence suggests that alcohol abuse or dependence in the long term is positively associated with being quarantined. (27)

As certain medical illnesses cause immunosuppression, fear of being infected must be high in that patient group. They may become worried if they experienced any symptom that is possibly related to COVID 19. Authors observed an increase in referrals from medical unit with the complaints of shortness of breath and cough that were medically unexplained. In a study on mental health status of people isolated due to Middle East respiratory syndrome, the fear that the symptoms could reflect having the infection continued to be related to psychological outcomes several months later. (26)

Psychiatric sequel of the disease

A growing body of research suggests associations between viral infections and psychiatric disorders. However, the nature of this association is uncertain. There's a potential role of infections in the etiopathogenesis of schizophrenia (28). It is supported by the associations between schizophrenia risk and genes which control the immune response to infectious agents (28).Protozoa and viral infections have been linked to cognitive deficits, psychiatric disorders, traffic accidents, and suicidal behavior (29). Herpes simplex encephalitis has an etiological role in relation to affective disorders (30). Influenza and infectious mononucleosis may lead to neurotic and occasional psychotic episodes (30). Infections and subsequent activation of the immune system may play a causative role in major psychiatric conditions such as schizophrenia and major depression (31). A study on 369 SARS survivors found that over 40% of the respondents had active psychiatric illnesses (40.3% -chronic fatigue problems, 27.1%- chronic fatigue syndrome) (32). A 2009 study regarded SARS as a mental health catastrophe (33). PTSD was the most prevalent long-term psychiatric condition, followed by depressive disorders (33). Encouraging results from research in schizophrenia and depression show a benefit of anti-inflammatory therapy (31).

Impact on health staff

Medical work force continuously works long and irregular hours that could contribute to increased levels of stress and burnout. Their routine work schedules have already been disrupted since the onset of the pandemic. Over the coming weeks and months, health employees will face additional stressors due to

different reasons such as uncertainty. Care for patients, physical and mental exhaustion, problems related to resources, family and social commitments and difficult decision making will all contribute to psychological stressors among health care workers.

A cross sectional study has identified; Isolation from family and other support, fear of transmitting the virus to family members, expanding workload, increasing number of suspected or positive cases, incidents of hostility and aggression towards medical staff, lack of effective treatment for sick patients, depleted workforce, scrutiny of media and shortage of PPE as stressors for health care workers during the current pandemic (34). The same study reported that 50.4%, 44.6%, 34% and 71.5% of health staff had symptoms of depression, anxiety, insomnia, and distress respectively (34). Nurses, women, frontline health care workers, staff engaged in direct diagnosis, treatment, and care of patients with COVID-19 showed a higher severity of symptoms of depression, anxiety, insomnia, and distress (34).

A study following SARS outbreak on hospital employees identified post-traumatic stress symptoms in around 10% of the respondents (17). Health workers who had been quarantined, worked in high-risk locations such as wards, or had friends or relatives, who contracted SARS, had 2 to 3 times higher risk of post-traumatic stress (17). Altruistic acceptance of work-related risks was negatively associated with stress levels (17). Health care workers in Toronto hospitals who treated SARS patients reported significantly higher levels of burnout, psychological distress and posttraumatic stress (35). The research emphasized the value of effective staff support and training in preparation for future outbreaks (35)

Discussion:

COVID-19 cannot be regarded only as another viral out-break, instead it has major mental health implications. Range of psychiatric disorders and functional outcome is predictable for a certain extent when looking at previous similar circumstances. Novel deadly infections like COVID can cause significant prolonged psychiatric problems. The post-COVID incidence of any mental health manifestation can expected to be high. The prevalence of psychiatric disorders months after the infection could still remain high. Exact figures of incidence and prevalence of mental health conditions cannot be speculated at this acute stage as the biopsychosocial impact of the pandemic is not fully understood. The incidence of psychiatry morbidities such as post-traumatic stress symptoms, depressive disorder, medically unexplained symptoms, substance and alcohol related problems and anxiety spectrum disorders can sharply rise following the pandemic. Psychological sequel of viral infections such as depression, PTSD and psychosis will also be applicable to COVID-19.

Number of factors could contribute to high incidence of psychiatric manifestations. Unprepared Sri Lankan communities have been confronted and threatened with a highly contagious, potentially lethal new virus that required curfew, quarantine, physical distancing, hospital admissions, intensive treatments and social interventions. Duration of the impact is prolonged as the spread is continuing globally. Stigmatization, xenophobia and myths could damage the psychosocial interactions of people. Unemployment, financial hardships, bereavement, fatigue, infodemics, stigma and myths could further complicate the picture. Symptoms such as insomnia, fear, anxiety, fatigue and work related problems can be expected among general public.

Quarantined individuals may experience short and long term consequences such as alcohol abuse/ dependence, somatoform conditions, acute stress disorder, PTSD, anxiety, irritability, poor concentration, indecisiveness, deterioration of work performance and depressive disorders. Patients with psychiatric illness may present with disease relapse, and symptoms of COVID-19 could be incorporated into the content of psychopathology. Anger, anxiety and substance withdrawal among mental health clients will be a significant issue.

Health care workers have a higher chance of developing psychological consequences. Health staff experiences overwhelming threats such as risk of getting the potentially lethal infection, feeling of helplessness, stigmatization, worries about family and friends and fear of discrimination. In addition health employees could develop depression, anxiety, insomnia, feeling of isolation and burn-out. PTSD will be a challenging morbidity needing mental health interventions. Females, nurses and frontline workers are more prone to develop psychiatric consequences. Productivity at work place can be severely affected if adequate, early measures are not taken. Psychological support is a must for health care workers to improve resilience and capacity to minimize fear, anxiety and stress.

Limitations of the study:

The study has methodological limitations as the conclusions based mainly on previously published overseas research on infections such as SARS. Generalization of such findings to local population will have many limitations. However, authors expect that this study may help make decisions concerning infectious disease outbreak contingency planning in Sri Lanka.

Conclusions:

There is significant uncertainty among the public, health care workers and others in relation to the out-come of the pandemic. Mental health manifestations will be a major presentation over the coming weeks and months. Authors emphasize the possibility of long term psychological consequences of the disease. In these uncertain times, role of the psychiatrists and mental health workers become especially important. Mental health staff should be proactive and be considered as part of the multidisciplinary team that manages COVID out-break.

Evidence from previous studies on the psychological impact of epidemics and pandemics such as SARS, MERS, influenza, and Ebola showed a neuropsychiatric linkage. The results may be relevant to the current COVID-19 pandemic. The whole scenario could directly or indirectly infiltrate fear, anxiety, emotional distress, and post-traumatic stress in addition to major psychiatric disorders such as major depression and schizophrenia. Stigmatization, xenophobia and social isolation of the affected fractions of the population could be a challenging foreseeable issue.

Early identification of emotional distress and mental health conditions, and provision of appropriate interventions to family members, patients and staff may be clinically indicated and valuable in facilitating the coping process during the aftermath of COVID-19. Children, adults and elderly will be psychologically affected to different extents. An appropriate mental health intervention will be needed

to improve the self-perceived health condition, to provide instrumental and psychological support for the impacted group, and to decrease the stigmatization and discrimination from the public. The similarities of the clinical pattern of mental health morbidity between COVID-19 and other disasters such as Tsunami suggest that appropriate psychosocial interventions for disaster can be applied during this situation.

Psychological first aid (PFA) is an early psychosocial support intervention focused on mental health of affected and emotionally overwhelmed survivors. It should be carefully designed to mitigate acute distress and assess the need for continued mental healthcare tailor-made to affected individuals. PFA will coordinate the collaborative services and provide appropriate psychological support to the affected Sri Lankans. A suitable PFA tool or a model needs to be adapted to suit the local community. Our results highlight the need to enhance preparedness and competence of mental health care professionals in detecting and managing the psychological squeal of COVID-19.

Affected health staff will be benefited by early interventions with specialized psychological support, general welfare support and strategies to reduce work place stressors. Psychological impact of events related to an infection outbreak may be mediated by individual perceptions of the event, and altruism may help to reduce the negative impact. Early staff training and effective staff support will be mandatory components to reduce psychological adversities of COVID-19 on health care workers.

Multicenter studies in Sri Lanka should be encouraged to understand the short and long term bio-psycho-social nature of the illness, and to improve psychological support system and thus the mental health prognosis of the pandemic. A screening tool to detect psychological consequences and a propositioned support network will be needed in place well before the occurrence of a post COVID chaos. Authors of this article suggest opening of a special out-patient clinic with screening and multidisciplinary treatment facilities at each district hospital of the country to support affected staff and public. Mental health workforce need to be further strengthened. Training programs and workshops will help mental health staff to manage future psychiatric consequences of COVID-19. Disaster psychiatry is an area that needs more attention, since there could be more calamities over the coming years.

Declaration of interest:
None

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