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Covid-19 Pandemics and Mental Health

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Abstract

- (1) Purpose: This narrative review will analyse the impact of covid-19 pandemic on mental health of general population as well as vulnerable groups and healthcare professionals.
- (2) Methods: Literature search with Keywords using PubMed database looking for relevant papers and summarising results.
- (3) Results: Findings include deterioration of general mental wellbeing, increased prevalence of anxiety, depression, fear, insomnia/sleep disturbance, suicidal ideation.
- (4) Conclusion: The covid-19 pandemic has severe implications for mental health and well being of large portions of our population. Specific risk groups such as children, elderly, comorbidly sick, current, or previously mentally ill, young women and economically psychosocially vulnerable individuals are at increased risk of suffering from mental disorders during covid-19 pandemic.

Keywords: Covid-19 Pandemic. Mental Health. Mental Illness. Healthcare-Professionals. Stigmatization. Burden of disease. Comorbidities. Sleep Disorders. Suicide. Mortality. Anxiety. Depression.

Introduction

Covid-19 is a variant of coronavirus family with potential to cause severe acute respiratory syndromes or SARS. WHO declared the covid outbreak to be an public health emergency of international concern on the 30th of January 2020 and later declared state of Pandemic on 11th of March 2020. As off 6 of May 2022 there have been 513,955,910 confirmed cases of covid-19 – assessed 6,649,200 deaths. (1)

Mental disorders have since the 1990's been a leading cause of years lived with disability and disability adjusted life years, in the top 2 of this category we find anxiety and depressive disorders. With the emerging of the covid-19 pandemic leading to social isolation, shutdowns, increased general anxiety, fear of death and stigmatisations we now have a breeding ground of extremely unhealthy mental environment with potential to lead into a pandemic of mental illness.

Aim of study: To review impact of covid-19 pandemic on mental health, identify specific factors of interest such as risk factors or preventative / protective factors.

Methods: Narrative review of impact of Sars-COV-19 pandemic on mental health - emphasis on vulnerable groups and healthcare professionals. Inclusion criteria based on fully available articles from PubMed central database, articles in English or fully translated to English and no paywalls. Selection of articles based on relevance of chosen topics. Literature has been found by putting in specific keywords into PubMed central database using covid-19 pandemic + mental health related keywords.

Structure: Start from a broad view of mental illness, burden of disease, comorbidities, and specificities of mental illness into more narrow review of pandemics impact on vulnerable groups, finishing with healthcare professionals and recommendations.

Literature Search:

Database from PubMed: Full articles for free. Will include papers written or translated to English. Will include all populations, genders, age groups. No exclusion criteria.

Main Body of Works – Burden of Disease: Mental illness

In the 2019 version of Global Burden of Diseases, Injuries, and risk factors Study they estimate the prevalence and burden of 12 mental disorders in females and males across 23 age groups (0-95) in 204 countries with results showing a top 10 position globally of burden of disease due to mental illness with no signs of decline from 1990 – estimation of 970 million people globally or 12,262 per 100,00 in 2019. Most common occurring mental disorders across both sexes was anxiety and depressive disorders, with the latter taking the largest percentage of age standardized DAYLYs (disability adjusted life years) of approximately 37.3% with anxiety disorders coming second with approximately 22.9% of the mental disorders. In 1990 mental disorders was the 13th leading cause of DAYLYs globally, in 2019 it increased to 7th. Both the 1990 as well as 2019 study show mental disorders as a 2nd leading cause of YLDs (years lived with disability) globally. (2) I'd like to note that this study was published before any data could be collected concerning the covid19-pandemic. With shutdowns quarantines, fear and anxiety spreading in society we now live in a circumstance where mental illness has grounds to grow and fester due to the extreme adverse events that we are exposed to – risk of an mental health epidemic in the tracks of covid-19 pandemic is of real concern. (3) I can only make the conclusion that safeguarding, promoting, and understanding mental health has never been more important than today.

Comorbidities risks associated with mental illness and COVID-19

Importance of mental well-being cannot be underestimated regarding holistic approach of patients – especially with the increased prevalence of comorbidity conditions in persons suffering from mental illness with the impact that entails on quality of life as well as increased burden on healthcare institutions and overall increased risk of mortality. In this study from 2013, 300,000 participants diagnosed

with recent-onset mental disorder was observed and they found a 2- to 4- fold increased risk of premature mortality compared to general population with approximately 15 years less for woman and 20 years for men. (4) Severe mental illness has been linked to a multitude of physical comorbidities including increased prevalence of infectious disease, neoplastic disease, musculoskeletal disorders, cardiovascular disorders. Not only are these physical findings more prevalent in patients pre-diagnosed with mental disorder but also risk of severe covid-19 infection. (5–7) I believe this highlights the need for a holistic approach to each patient, you do not only treat a symptom but a person – might be worth considering putting patients with mental disorders on priority list of vaccinations with regards to covid-19 and the increased risk of severity and mortality.

COVID-19 Stigmatization and Mental Health

Another complication associated with mental disorders through time has been stigma surrounding the mental illnesses not uncommonly due to stigmatization from different cultural associations or between different socioeconomic groups as well as somatic care professionals. Stigmatization in the view of mental health have serious adverse effects including increased anxiety, anger, and intolerance. By extension this could lead to reduced willingness to seek treatment in fear of being discriminated or neglected by health care workers or in fear of discrimination by your peers. Mental disorder patients, being part of a vulnerable sub-group that may have a difficult time communicating or advocating for themselves along with distrust of healthcare institutions and providers would only find it increasingly difficult to come by correct and timely treatment no to mention that preventative measures of disease spread may become increasingly difficult. (8–11) Furthermore, there's a correlation between self-stigmatization, insomnia and PTSD like symptoms associated with covid-19 infection

recovery leading to reduced quality of life only highlighting the need for preventative measures of tackling an still existing issue of stigma (12)

Covid-19 Impact on Mental Health of Vulnerable Groups – Elderly

It is well known that elderly is at an increased risk of suffering from severe or difficult form of covid-19 infection especially in the >80 brackets compared to those patients <50 years of age. With age also comes increased risk of having chronic conditions further increasing risks associated with severe or deadly form of covid-19, and so, many of the measures related to disease prevention has been directed towards the elderly and frail with chronic conditions, commonly in the form of self-isolation and social distancing on top of general lockdowns that some countries utilized as part of disease spread prevention. Elderly is not only more susceptible to severe covid-19 infection but also have a more a profound response to stress, anxiety and depression compared to younger subjects – with this strong negative impact on mental health consequentially leading to feelings of loneliness, hopelessness, and increased death anxiety. This is on top of the potential reduced prioritization of chronic conditions they may suffer from due to the increased pressure to hospitals where the acute respiratory disorder of covid-19 would be prioritized. (13–15)

Covid-19 Impact on Mental Health of vulnerable groups – Paediatric Population

What makes children and youths a vulnerable group in considering the covid-19 pandemic? Children are in the unique situation of critical continues somatic and mental development, covid pandemic cause risk of disruption in the healthy development due to potential interruption of social structures and extracurricular activities, safety concerns / fear, increased stress both personally experienced or from parents/guardians, reduced availability of affordable quality food, disrupted sleep

patterns and reduced quality of education creating an environment of toxic stress in turn disrupting important healthy development of children. Furthermore, the pandemic has led to increased amounts of in-door time/screen time reducing physical activity which impacts both the physical as well as mental wellbeing. Additionally, children many times are more reliant on social structures such a school to get support from an otherwise potentially dysfunctional home. Shutdown of social structures and social distancing may lead to further distress of children already living in hostile environments, more often seen in weak socioeconomic areas. As is not uncommon, socioeconomic prowess and meeting the social needs often determine how well any one individual will be able to cope with adverse or difficult life situations and especially deal with extreme adverse situations such as covid-19 pandemic. (16–18)

Emergency situations such as covid-19 pandemic comes with risks of both acute and longstanding negative mental health and development consequences for the paediatric population. A systemic review from 2021 shows increased occurrence of fear, depressive symptoms, anxiety symptoms, deterioration of general mental health, increased suicidal ideations and prevalence of self-harm comparing pre-pandemic to pandemic times. Worth to note that increased physical activity and playing outside was commonly related to better outcomes concerning mental health amongst other protective factors such as, hobbies, optimistic view point, increased knowledge and awareness – I want to highlight that overconsumption of covid-19 news seems to have negative impact on mental health, finding balance in awareness and understanding in relation to news exposé could be a fine line to thread. (19)

Covid-19 Impact on Mental Health. Generalized

In the acute stages of enforced lockdown, it seems that being of female biological sex, living alone, being a young adult, low socioeconomic status and low education level

are all predisposing factors to not only experience symptoms of but also more severe symptoms of anxiety and depression. (20) As is not unexpected, the impact of pandemic or other extreme situations often is felt more severely in those who already suffer from adverse life events or conditions such as those already suffering from mental disorders. Associated factors such as pre-existing or history of depression, anxiety, eating disorder or PTSD has been found to be associated with further perceived reduced mental well-being during the pandemic compared to people without previous history of mental disorders. Other factors found to be associated with increased prevalence of anxiety/depression or other mental health problems during the pandemic include as before younger age, difficulty accessing mental health services, low salary, reduced income due to pandemic, female sex, alcohol/drug use, sleep disruption, other somatic comorbid conditions, occupation in frontline healthcare services. (21,22) Another generalized effect of the pandemic that's especially associated with lockdowns and self-isolation is the reduced amount of physical activity with subsequent increase in screen time. Here we find the inverse relationship between anxiety/depressive symptoms with physical activity/screen time. What this means is if you pre-pandemic was an active individual with relative low (<8 hours) screen time and changed into a more sedentary lifestyle with >8 hours of screen time, risk of experiencing symptoms of anxiety/depression and risk of increased severity of symptoms is increased. Additionally, effects of physical activity on immune system has been well documented meaning that continues exercise is not only important for mental wellbeing but also to reduce the severity of somatic symptoms during covid-19 infection. (23–26)

Covid-19 Impact on Mental Health of Healthcare Professionals.

Anxiety/Depression

Many health care professionals are frontline workers during catastrophic events such as the covid-19 pandemic. This brings with it an exceptional situation where the frontline workforce come under considerable amounts of stress due to extreme working conditions with it follows negative mental reactions and outcomes. Among the most frequent asked about associated findings during the pandemic we find anxiety and depression. Increased prevalence of these adverse mental effects has been found to be significant comparing pre-pandemic to pandemic times across healthcare professionals, general population, and people with pre-existing health concerns, where those with coexisting comorbidities and previous diagnosis of mental disorders experience highest amount of anxiety. (27) Seemingly the most susceptible individuals to negative symptoms include those working in direct contact with infected patient, being of younger age, less experience in the field, working as a nursing professional and female sex. Susceptibility of mental disorders seems to be greater among employees of pulmonology department, emergency service personal and intensive care personal which all should be considered frontline workers who are in direct contact with potential covid-19 positive patients and the patients in the most severe conditions. Additionally, being close to a covid-19 positive person - family members or close ones in which you share a living space with has also been associated with increased levels of perceived anxiety. (28) Nurse profession and women representation I would explain by the known fact that being of female biological sex means increased susceptibility to anxiety and depressive disorders by various potential mechanisms, an extreme working environment coupled with an disproportionate number of female to male nurses (80-90% of nurse professionals are women) (29–31)

I found one interesting study that used a metric that other studies looked past in the form of hypervigilance. In this study they found hypervigilance to be the most significantly increased symptom of covid-19 pandemic across 2 out of 3 age groups (<30 / 30-49 / 50+) followed by fear, worth to note that fear was more significantly increased for <30 years age group. Further they included studies again showing correlation between lower age (<40), working as nurse and female sex as predisposing factors of experiencing negative mental symptoms. (32)

Covid-19 Impact on Mental Health of Healthcare Professionals. Sleep Disruption

As already mentioned, increased anxiety is a well known consequence of the covid 19 pandemic but what are the effects of increased anxiety? Studies have found a strong correlation between perceived anxiety and sleep changes such as sleep duration and quality or even insomnia. Furthermore, dietary changes such as loss of appetite or regularity of eating was also associated with higher perceived rate anxiety. Factors that seem relevant to how susceptible one is to sleep disruptions include, education level, where doctoral graduates were in one study found to be 2,69 times less likely to develop insomnia symptoms compared to high school graduates which also seems to hold true to some degree on a population level. Additional factors include, fear of infection, working closely to know covid positive patient isolation and working in protective gear, where the forced wear of hazmat suits or similar have been associated with worse mental wellbeing. Additionally, combination of increased exposure to covid-19 along with sleep disturbances and shift work leads to a unique situation where health care workers are both more exposed to and more susceptible of contracting covid, plus at the same time risk suffering from a more severe outcome of disease especially for professionals working abnormal shifts which disrupts sleeping patterns. There have been several studies investigating the effects on immune system

of personal with poor sleeping habits / working in shifts where the results show an increased prevalence of respiratory infections in general for this subgroup of personal along with increased inflammatory markers such as CRP. This only serves to highlight the importance of our institutions to take care of their personal and try to allow for a balance between work and recovery as to reduce the additional risks associated with shift work and lack of sleep and recovery. (33–38)

Further I'd like to discuss self-harm and suicide risks. With the now known impact on anxiety, depression, sleep disorders and overall mental health deterioration along with potential financial difficulties and increase in alcohol/substance abuse, it would be would not be surprising if the data were to show an increase in suicidal thoughts and behaviour as many of the potential risk factors of suicide can be found to be increased during the pandemic. (39–41) However, that is not what the data suggests is happening as suicide rates seem to remain on stable levels even with increase of suicide risk factors. (42–44) Factors that have been associated with increased prevalence of such behaviour include being exposed to covid-19 infection, financial difficulties due to the social impact of covid-19 pandemic such as reduced possibility to find work opportunities, shutdown of work place or termination of employment, previous or current diagnosis of mental disorder, (mainly depression) largest risk of committing or attempting suicide during the pandemic in the general population seems to be the previous know behaviour of self-harm or suicide attempt. Among healthcare workers there seems to be a correlation with contracting the infection, fear of contracting infection, work-related stress and again previously known self-harm behaviour, suggesting that the reason of suicidal thoughts and behaviour differs in slight ways from the general population compared to health care workers.

Additionally, there's been found a correlation between insomnia / sleeping disorders

and increased risk of STB (suicidal thoughts and behaviour) possibly due to the correlation of sleep disturbance and prevalence of depression, with depression being a well-known risk factor of STB. (45–47)

Results

In this review I have used 32 articles within my inclusion criteria specifically referring to covid-19 related mental health issues with remaining articles allowing for context – this review has covered topics concerning how mental health has been affected during covid-19 pandemic including symptoms of anxiety, depression, sleep disturbances, suicidal thoughts and behaviour with additional coverage of burden of disease regarding mental health, comorbidities, specificities of vulnerable groups and healthcare workers with results indicating a deterioration of mental health broadly across all examined groups.

Discussion

Findings during this review have been uniformly coherent with general knowledge of the impacts on mental health during previous endemic and pandemic crisis situations. (48–50) What we can see in the general population are increased prevalence of anxiety, depression, insomnia / sleep disturbance, fear and suicidal ideation. Risk factors include, younger age, low level of education, female sex, low socioeconomical prowess, previous or present diagnosis of mental health disorder, having comorbid conditions / being part of risk groups for more difficult course of disease (including high age) and social isolation and reduced social support. First line healthcare personals suffer much of the same mental symptoms with addition of increased prevalence of PTSD, additionally the risk of mental symptoms being due to working conditions is increased, usually based on proximity to infected patients, workload,

protective gear issues, fear of infecting family / friends. Further, the risk of severe course of disease is higher amongst healthcare personal.

Conclusion

The covid-19 pandemic has uprooted and strongly affected the lives of an extreme amount of people in our world taking them away from everything they considered a normal life. The data is overwhelming when looking at the negative mental effects associated with covid-19 pandemic especially when looking at anxiety and depression. The data does not show an increase in the prevalence of suicide so far, but we must be vigilant and work proactively as to reduce the risks associated. While health care professionals do not seem to be overrepresented compared to general population regarding mental illness symptoms, they are at increased risk of both being infected by covid-19 and in some regards also suffer a more severe course of disease, most likely due to the requirements of the job. Long term effects in society are yet to be fully understood but we are at a real risk of a mental health pandemic in the tracks of this infectious disease.

Strategies should be implemented to reduce the negative effects on mental health during the pandemic. Some could include the use of electronic devices / supplements to break feelings of solitude, maintain physical activity by any means possible, allow for hobbies and spare time activities to be continued even if in minor degree, positive reinforcement to improve general mindset and avoid negativity, social and economic support for those who have suffered severe economic difficulties, social support / therapy for isolated individuals finding it difficult to cope.

Generalized recommendations based on findings of review.

First off, I'd like to point out the obvious fact of psych-socioeconomical vulnerable or weak groups being more susceptible to both somatic and mental disorders especially during times of crisis. The need to work proactively in the form of Public Health investments is of great importance if there are resources enough to allow it. Presence and availability of social services for those who may lack support systems in their personal lives, financial support to maintain adequate nutrition and standard of living in case of loss of income or very low income, adequate educational services, access and availability to mental health services, hobbies and after work/school activities are but a few of areas where investments could help improve outcomes both before and during emergency situations.

Special attention should be provided to identified risk groups of mental disorders including, children, young socioeconomically vulnerable women, socially isolated elderly, people with current or a history of mental disorders.

More concrete suggestions would include increased physical activity and reduced screentime, strong social connections and social support lines - could be professional relationships, family members, friends etc. Maintain hobbies / social activities. In some cases, reduced intake of covid-19 associated news whilst still maintaining awareness. Utilizing electronics for communication for high risk socially isolated individuals to reduce sense of solitude.

For health care professionals specifically. Social support especially interprofessional support from co-workers, clear ways of communication with supervisors with definitive guidance when needed. Access to adequate protective gear. Possibility of adequate resting and recovery periods. (51–53)

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