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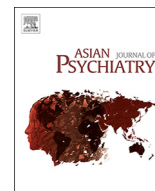
Epidemic of COVID-19 in China and associated Psychological Problems

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ABSTRACT

The world is experiencing pandemic of the COVID-19 now, a RNA virus that spread out from Wuhan, China. Two countries, China first and later Italy, have gone to full lock down due to rapid spread of this virus. Till to date, no epidemiological data on mental health problems due to outbreak of the COVID-19 and mass isolation were not available. To meet this need, the present study was undertaken to assess the mental health status of Chinese people. An online survey was conducted on a sample of 1074 Chinese people, majority of whom from Hubei province. Lack of adequate opportunities to conduct face to face interview, anxiety, depression, mental well-being and alcohol consumption behavior were assessed via self-reported measures. Results showed higher rate of anxiety, depression, hazardous and harmful alcohol use, and lower mental wellbeing than usual ratio. Results also revealed that young people aged 21–40 years are in more vulnerable position in terms of their mental health conditions and alcohol use. To address mental health crisis during this epidemic, it is high time to implement multi-faceted approach (i.e. forming multidisciplinary mental health team, providing psychiatric treatments and other mental health services, utilizing online counseling platforms, rehabilitation program, ensuring certain care for vulnerable groups, etc.).

1. Introduction

With the unprecedented success of medical science, the mortality rate of people of all ages and of all countries has decreased significantly (Tielsch, 2015). Despite of the tremendous development of medical and medicine science, global health and well-being is being embroiled by the recurrent infectious disease, especially viral epidemics (Cassell and Mekalanos, 2001). The epidemic outbreaks of SARS, MARS, and Ebola virus in the first of the century showed the shortcomings of adequate preparation confronting such epidemics (Lashley, 2006). This century (21st) already had been experienced several outbreaks of virus disease (i.e. Severe Acute Respiratory Syndrome (SARS-CoV), Middle East Respiratory Syndrome (MERS-CoV), Ebola, etc.).

In the last of the December 2019, an outbreak of a new viral disease, novel coronavirus another virus from the Corona family like SARS and MARS, was reported in Wuhan, the capital of Hubei Province, China. It subsequently gets the global attention as it turned into pestilence rapidly (Xiang et al., 2020). This expeditious epidemic turned into a collective war to save the entire human civilization. Apart from China, international community simultaneously strives for the immediate mitigation and safeguards the people. On February 11, 2020 World Health Organization officially announced for new name for the novel coronavirus as COVID-19 and expressed concerns that the virus would expand world-wide. On March 11, 2020, WHO has declared the situation as pandemic (WHO, March 11, 2020a) and this is the first pandemic causes by a virus from the Corona family. The symptoms of COVID-19 are similar to the SARS epidemic, i.e. fever, cough, dyspnea, etc. (Wang et al., 2020). As on March 12, 2020, there are 80814 COVID-19 cases found in China, where 64117 recovered and discharged from hospital where total death tolls reached 3177 (Worldometers, 2020, March 13). The COVID-19 is spread all across the world very rapidly (total affected cases 134769 and death 4983, Worldometers, 2020, March 13, 2020).

The outbreak of COVID-19 spread over a very fast period, due to the Chinese Lunar New Year, which is the biggest temporary migration of the earth (Belluz, 2020). During this occasion under normal circumstances, around 3 billion domestic trips are made where 15 million are made only from the epicenter of COVID-19 Wuhan. In contemplation of curbing the outbreak, the Chinese government imposed the lockdown and restricted transportation. Chinese nationals confined themselves for an indefinite period as the part of the first level measure to major hazards public health emergency.

1.1. COVID-19 epidemic and psychological problems

Huang et al. (2019) conducted a cross-sectional epidemiological study on a sample of 32552 Chinese people and reported 12 month prevalence and lifetime prevalence of mental health problems. In this study, the 12 month prevalence of anxiety was 5%, 3.6 % for depression, 1.8 % for alcohol use disorder and life prevalence of anxiety was 6.8 %, 7.6 % for depression, and 4.4 % for alcohol use disorder (Huang et al., 2019). This statistic represents the mental health condition of Chinese people in a normal period. However, there are no available statistics about psychological health mainly the prevalence of psychological problems among people during an epidemic outbreak.

In the present epidemic of COVID-19, metal health issues underaddressed since the National Health Commission of China announced a guideline for emergency psychological crisis intervention for the recent COVID-19 outbreak considering the psychosocial problems (National Health Commission of China: NHC, 2020). In some previous epidemiological studies, depression, anxiety, negative psychological effect, panic attack, psychomotor excitement, psychotic symptoms, delirium, and even suicidal tendency have found among the survivors of the SARS epidemic (Maunder et al., 2003; Lee et al., 2007). However, most of the survivors' psychological problems of resembling epidemics are often poorly studied and analyzed, i.e. SARS epidemic (Tsang et al., 2004).

A sudden outbreak of a disease always poses threat to the mental health of affected people and their close contacts. Confirmed patients, suspected patients, medical and related personnel, close contacts with patients may have a possibility of having a higher prevalence of anxiety, depression, anger and other associated psychological problems. Patients may have the fear of death, doctors and nurses those are involved in treating COVID-19 affected people may experience a fear of contagion by this virus and spreading to their family, friends, or close others (Xiang et al., 2020). Isolated and quarantined people experience stressful phenomenon, i.e. loses face to face communication and other regular social intervention instigating from an epidemic outbreak (Zhang et al., 2020). They may also experience felling of loneliness and anger (Xiang et al., 2020). These short term effects may develop adjustment disorder and post-traumatic stress disorder (Banerjee, 2020). Moreover, vaccine for curing COVID-19 affected people is not invented till now. People are not sure when this viral disease comes into full control. Unavailability of vaccine, unpredictability of the situation, and quarantine for indefinite periods create a stressful situation for Chinese people. Stressful situations can increase common mental health problems like anxiety, depression, etc (Dar et al., 2017). The overflow of information about COVID-19 epidemic on social media also triggers panic that may lead to extreme behavior like suicide (Goyal et al., 2020).

1.2. Present study

Contemplating subsequences, in-depth and systematic research is needed to reveal the psychological impact of infectious disease and subsequent epidemics. This study was aimed to address the literature gap on the psychological morbidity induced from current COVID-19 epidemic and also systematically reviews the prevalence of psychological problems on account of the prolonged confinement of Chinese citizens. The study findings would be helpful to understand the psychological impact of such epidemics and strengthen future preparedness.

2. Method

2.1. Participants

For the purpose of data collection an online survey was conducted via Tencent. The Tencent link was shared through the WeChat, the most popular and mostly use social media in China. A total of 1074 people

Table 1
Participants' distribution in terms of their socio-demographic characteristics.

Variables	Groups	Frequency (%)
Gender	Female	503 (46.8 %)
	Male	571 (53.2 %)
Education	Junior school and below	197 (18.3 %)
	High school/technical secondary school/ technical school	297 (27.7 %)
	University degree (specialized)	290 (27 %)
	Bachelor	249 (23.2 %)
	Masters	41 (3.8 %)
Province	Hubei	678 (63.1 %)
	Other	396 (36.9 %)
Profession	Student	184 (17.1 %)
	Government official	91 (8.5 %)
	Enterprise manager	98 (9.1 %)
	General Staff	185 (11.2 %)
	Professional	216 (20.1 %)
	Ordinary worker	148 (13.8 %)
	Agriculture/forestry/animal husbandry/ fishery worker	27 (2.5 %)
	Retired	38 (3.5 %)
	Unemployed	36 (3.4 %)
	Other	51 (4.7 %)

were participated in the present study. Respondents, participated in the survey, received a gift voucher worth of 10 Yuan. Participants' age ranged from 14 years to 68 years (M = 33.54 years, SD = 11.13 years). Demographic characteristics of participants presented in Table 1.

2.2. Measures

In the present study, all participants completed an online questionnaire that included the Beck Anxiety Inventory (BAI: Beck and Steer, 1993; Chinese version: Che et al., 2006), the Beck Depression Inventory – II (BDI-II: Beck et al., 1996; Chinese version: Wang et al., 2011), the Alcohol Use Disorder Identification Test (AUDIT: Saunders et al., 1993; Chinese version: Zhang et al., 2017), the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS: Tennant et al., 2007; Chinese version: Zhao et al., 2019) and a personal information section (participants' age, gender, province where they were living, educational qualification, profession, and monthly income, etc.).

2.2.1. Beck Anxiety Inventory (BAI)

The BAI is a 21 item screening tool for assessing anxiety symptoms with intensity. This inventory assesses the physiological, emotional, and cognitive symptoms of anxiety. Participants are asked to rate the extent to which they have been bothered by each item over the last seven days (including the day of their completion of the BAI) on a four-point scale ranging from 0 ('not at all') to 3 ('severely - I could barely stand it'). Total score ranged from 0 to 63. The authors reported high Cronbach's alpha (.92) and good test-retest reliability (.75) for one week gap of the BAI. This scale had moderately high correlation (.51) with the Hamilton Rating Scale for Anxiety (Hamilton, 1959). The BAI Chinese version also has good internal consistency reliabilities (.91–.95) and high correlation (.71) with the Hamilton Rating Scale for Anxiety. In the present study, following cut off scores were used to assess different levels of anxiety: scores between 0 and 7 denotes no anxiety, scores between 8 and 15 denotes mild anxiety, 16–25 denotes moderate anxiety and 26–63 denotes severe anxiety (Che et al., 2006). In the present study, the BAI had good internal consistency reliability (Cronbach's alpha = .969).

2.2.2. Beck Depression Inventory (BDI)

The BDI is a 21-item, a screening tool for assessing severity of depression, developed in 1961 (Beck et al., 1961) and revised in 1996 (Beck et al., 1996) to be more consistent with the depression criteria

suggested by DMS-IV (APA, 1994). Participants are asked to rate their appropriate on a four-point scale (0–3). Total score ranged from $0 - 63$. This inventory takes 10 min approximately to complete. This scale had high internal consistency reliability (Cronbach's alpha = .92) and test retest reliability (.93). The BDI Chinese version also has good internal consistency reliability (Cronbach's alpha = .94). Exploratory factor analysis revealed two factor structures (somatic-affective factor and cognitive factor) of Chinese BDI-II same as in English BDI-II. Following cut off scores were used to assess different level of depression in the present study: 0–13 (no depression), 14–19 (mild depression), 20–28 (moderate depression), and 29–63 (major depression) (Wang et al., 2011). In the present study, the BAI had good internal consistency reliability (Cronbach's alpha = .948).

2.2.3. Alcohol Use Disorder Identification Test (AUDIT)

The AUDIT was developed by the World Health Organization (WHO) for the purpose of identification of alcohol related problems in the last 12 months (Babor et al., 2001). This test contains 10 questions (three questions about frequency and amount of alcohol drinking, three questions regarding alcohol dependency, and last four questions about problems that caused by alcohol use). Respondents' need to answer each question on a five-point scale (0–4). Total score ranged from 0 to 40. In the present study, following cut off score was used: scores between 0 and 7 denotes abstinence or low risk use, scores between 8 and 15 denotes hazardous use, scores between 16 and 19 denotes harmful use, and scores of 20–40 denotes possible dependence. Studies have suggested that the AUDIT has good reliability and validity for the purpose of clinical use (Babor et al., 2001; Reinert and Allen, 2002). The Chinese version of the AUDIT has acceptable Cronbach's alpha (.782) and split half reliability (.711). Exploratory factor analysis revealed three-factor structure as same as the original English version. In the present study, the AUDIT had good internal consistency reliability (Cronbach's alpha = .893).

2.2.4. Warwick Edinburgh Mental Wellbeing Scale (WEMWBS)

The WEMWBS is a 14 item scale for assessing the positive aspects of mental health that cover subjective well-being and psychological functioning. In this scale, respondents are asked to rate their feelings described in each item. They need to rate their experience over the last two weeks on a five-point scale ranged from 1 ('None of the time') to 5 (All the time). Total score ranged from 14 to 70. In the present study, following cut off score was used: scores between 14 and 42 denotes lower mental wellbeing, scores between 43 and 59 denotes average mental wellbeing, and scores between 60 and 70 denotes high mental wellbeing. This scale has good internal consistency and test-retest reliability and good construct and criterion validity. The WEMWBS Chinese version had good Cronbach's alpha (.88). This scale also had high reliability for older people (Cronbach's alpha = .94; Liu et al., 2016), undergraduate nursing trainees (Cronbach's alpha = .94, test-retest = .83; Dong et al., 2016), etc. In the present study, the WEMWBS had good internal consistency reliability (Cronbach's alpha = .961).

2.3. Statistical analysis

In the present study, IBM SPSS version 25 was used to analyze the collected data. In this study, descriptive statistics (frequency, percentages, mean, and standard deviation) and chi-square test were used. Descriptive statistics were used for the purpose of assessing the mental health status of participants. Chi square test was used to assess the interaction between socio-demographic factors (i.e. gender, provinces where study participants currently living, participants' age, etc.) and mental health status and drinking behavior (i.e. anxiety, depression, alcohol consumptions, mental well-being, etc.).

Table 2
Prevalence statistics of anxiety, depression and alcohol abuse and dependence, and overall mental well-beingstatus after the COVID-19 epidemic.

	Levels	percentages
Anxiety	Mild	10.1 %
	Moderate	6.0 %
	Severe	12.9 %
Depression	Mild	10.2 %
	Moderate	17.8 %
	Severe	9.1 %
Alcohol Use	Hazardous drinking	29.1 %
	Harmful drinking	9.5 %
	Alcohol dependent	1.6 %
Mental Well-being	Lower	32.1 %
	Average	49.4 %
	Higher	18.4 %

2.4. Ethics

The university ethics committee of the Northwest Normal University, China approved the present research (ERB no.- 20200017, date: 15/02/2020). This study has collected survey data from human participants in addressing the psychological problems induced for the COVID-19 epidemic. This study was conducted in accordance with the Declaration of Helsinki. Complying with the Helsinki Declaration and its later amendments or comparable ethical standards, this present study has completed all the procedures. Participants were informed about the study purposes, its nature, and administering procedures. They were ensured that all information given by them would be kept confidential and anonymous.

3. Results

Based on the BAI, 29 % respondents are suffering from different forms of anxiety (mild 10.1 %, moderate 6.0 % and severe 12.9 %) which is related to lockdown at home due to the COVID-19 outbreak. Based on the BDI, Results from Table 2 shows that more than one-third respondents (37.1 %) were having different forms of depression (mild 10.2 %, moderate 17.8 %, and severe 9.1 %). Like anxiety and depression, hazardous drinking increased to 29.1 %, harmful drinking increased to 9.5 % and alcohol dependency reached to 1.6 %. Table 2 also showed that approximately one-third people (32.1 %) were in lower mental well-being.

Table 3 shows that proportion of having different levels of anxiety

Table 3
Differences in anxiety, depression, alcohol use, and mental well-being among people from Hubei and other province after the COVID-19 epidemic.

	Province		χ^2 (p value)	Effect size
	Hubei	Others		
Anxiety				
Mild	67 (9.9 %)	42 (10.6 %)	4.340 (.227)	.064
Moderate	45 (6.6 %)	19 (4.8 %)		
Severe	96 (14.2 %)	43 (10.9 %)		
Depression				
Mild	68 (10.0 %)	42 (10.6 %)	11.908 (.008)	.105
Moderate	123 (18.1 %)	68 (17.2 %)		
Severe	77 (11.4 %)	21 (5.3 %)		
Alcohol use				
Hazardous users	227 (33.5 %)	85 (21.5 %)	30.772 (< .001)	.169
Harmful users	75 (11.1 %)	13 (1.9 %)		
Dependent users	27 (6.8 %)	4 (1%)		
Mental Wellbeing				
Lower	221 (32.6 %)	124 (31.3 %)	3.874 (.144)	.060
Average	344 (50.7 %)	187 (47.2 %)		
Upper	113 (16.7 %)	85 (21.5 %)		

Table 4
Gender differences in anxiety, depression, alcohol use, and mental well-being-after to the COVID-19 epidemic.

	Gender		χ^2 (*p* value)	Effect size
	Male	Female		
Anxiety				
Mild	52 (9.1 %)	57 (11.3 %)	6.530 (.088)	.078
Moderate	34 (6.0 %)	30 (6.1 %)		
Severe	87 (15.2 %)	52 (10.3 %)		
Depression				
Mild	55 (9.6 %)	55 (10.9 %)	4.008 (.261)	.061
Moderate	111 (19.4 %)	80 (15.9 %)		
Severe	57 (10.0 %)	41 (8.2 %)		
Alcohol use				
Hazardous users	187 (32.7 %)	125 (24.9 %)	19.696 (< .001)	.135
Harmful users	66 (11.6 %)	11 (1.9 %)		
Dependent users	36 (7.2 %)	6 (1.2 %)		
Mental wellbeing				
Lower	170 (29.8 %)	175 (34.8 %)	4.121 (.127)	.060
Average	286 (50.1 %)	245 (48.7 %)		
Upper	115 (20.1 %)	83 (16.5 %)		

(χ^2 = 4.340, p = .227, effect size = .064) and mental wellbeing (χ^2 = 3.874, p = .144, effect size = .060) of people from Hubei and other provinces nearly equal. However, there existed significant differences in depression (χ^2 = 11.908, p = .008, effect size = .105) and alcohol abuse (χ^2 = 30.772, p < .001, effect size = .169) between respondents from Hubei and other provinces. Although, proportions for mild and moderate depression were equal for both Hubei and other provinces, but, proportion of severe depression were more than twice for people from Hubei province than other provinces. Proportions of both harmful and hazardous users and alcohol dependent users were much higher for people from Hubei than other provinces.

Table 4 shows significant interaction of gender to alcohol abuse (χ^2 = 19.696, p < .001, effect size = .135). Ratio of harmful users and dependent users for males were six times higher than females. Table 4 also shows non-significant interaction of gender with anxiety, depression, and mental wellbeing.

Table 5 shows significant interaction of age groups to anxiety (χ^2 = 39.484, p < .001, effect size = .192), depression (χ^2 = 38.830, p < .001, effect size = .190) and mental wellbeing (χ^2 = 21.259, p = .006, effect size = .141). Proportion of having different level of anxiety and depression, and lower mental wellbeing were relatively higher among 21−30 years age group. Total 27.3 % and 46 % were identified as having different level of anxiety and depression, and 37.6 % having

lower mental wellbeing. This group is more vulnerable in their mental health status during the outbreak of the COVID-19. Even, 12.4 % respondents of this age group were harmful alcohol users. Beside this age group, proportion of different level of anxiety (24.9 %) and depression (36.8 %), and lower mental wellbeing (30 %) of 31−40 years age group also relatively higher.

4. Discussion

There is limited information available in the literature pertaining to the psychological impacts immediately after the outbreak and after surviving through the critical medical procedure of the previous pandemic SARS-CoV, which is similar of COVID-19 and originated from same Corona virus family (Chua et al., 2004; Lee et al., 2007). Since the COVID-19 outbreak is very new, so there is very little literature on the psychological impact of this outbreak. The present study rapidly assessed the prevalence of psychological problems associated with people's incarceration to the COVID-19 epidemic in China through an online survey. The results of this study have suggested a much higher rate of anxiety, depression, alcohol consumptions and lower mental well-being among Chinese people due to COVID-19 outbreak and their confinement in their home as the first-line response to the epidemic or public health emergency. Comparing the present study findings with the cross-sectional epidemiological study of Huang et al. (2019), Chinese people's mental well-being is deteriorating. Liu et al. (2020) cited a survey, included medical staffs only, that suggested higher prevalence rate of depression (50.7 %), anxiety (44.7 %), insomnia (36.1 %), and stress related symptoms (73.4 %). This higher rate of mental health problems might be due to the ambiguity and little information about the COVID-19. Usually, at early stages of a pandemic, people have little information about nature, treatment, fatality rate, etc. that fuel the fear about the organism. Xiang et al. (2020) have opined that quarantine can induce loneliness, boredom, anger, anxiety, and depression.

Although alcohol dependency not increased than earlier (2.3 %; WHO, 2018), but hazardous drinking and harmful drinking both increased largely. WHO (2018) reported that the prevalence rate of alcohol use disorder that include dependency and harmful alcohol use was 4.4 % among Chinese people. In the present study, this statistic has increased to 11.1 %. Lockdown due to COVID-19 epidemic might be the main reason for this large increment in alcohol consumption. Study suggested social isolation as a risk factor of increasing alcohol consumption (Yawger, 2018). Besides this, anxiety and depression has strong associations to harmful use of alcohol or dependence (Mette, 2019).

This study also showed significant differences in levels of depression

Table 5
Differences in anxiety, depression, and alcohol abuse among different age groups related to the COVID-19 epidemic.

	Age groups					χ^2 (*p* value)	Effect size
	≥ 20 years	21 − 30 years	31 − 40 years	41 − 50 years	≤ 50 years		
Anxiety							
Mild	2 (3.2 %)	57 (12.0 %)	24 (9.5 %)	18 (9.4 %)	8 (8.5 %)	39.484(< .001)	.192
Moderate	3 (4.8 %)	31 (6.5 %)	16 (6.3 %)	11 (5.8 %)	3 (3.2 %)		
Severe	3 (4.8 %)	89 (18.8 %)	23 (9.1 %)	14 (7.3 %)	10 (10.6 %)		
Depression							
Mild	6 (9.7 %)	59 (12.4 %)	23 (9.1 %)	14 (7.3 %)	8 (8.5 %)	38.830 (< .001)	.190
Moderate	8 (12.9 %)	108 (22.8 %)	44 (17.4 %)	20 (10.5 %)	11 (11.7 %)		
Severe	3 (4.8 %)	51 (10.8 %)	26 (10.3 %)	12 (6.3 %)	6 (6.4 %)		
Alcohol use							
Hazardous users	16 (25.8 %)	138 (29.1 %)	83 (32.8 %)	53 (27.7 %)	22 (29.1 %)	18.764 (.094)	.132
Harmful users	3 (4.8 %)	59 (12.4 %)	23 (9.1 %)	13 (6.8 %)	4 (4.3 %)		
Dependent users	–	6 (1.3 %)	5 (2%)	4 (2.1 %)	2 (2.1 %)		
Mental wellbeing							
Lower	18 (29 %)	178 (37.6 %)	76 (30 %)	50 (26.2 %)	23 (24.5 %)	21.259 (.006)	.141
Average	33 (53.2 %)	225 (47.5 %)	133 (52.6 %)	96 (50.3 %)	44 (46.8 %)		
Upper	11 (17.7 %)	71 (15 %)	44 (17.4 %)	45 (23.6 %)	27 (28.7 %)		

and alcohol use between participants from Hubei province, the epicenter of COVID-19, and other provinces. WHO (February 28, 2020b) stated that the overall fatality rate differed by location (i.e. 5.8 % in Wuhan, main city of the Hubei province, and .7% in other provinces). There might be a connection of higher fatality rate due to the COVID-19 and higher rate of depression and alcohol consumptions among people from Hubei province. Regarding gender differences, male were higher in alcohol consumptions than female. Studies suggested that females are twice higher in stress and anxiety related problems (Foa and Street, 2001; Kessler et al., 1994, 1995, 2005). But, this non-significant gender differences in anxiety suggested that both men and women equally concerned about the COVID-19 and its further consequences. Regarding alcohol consumption, the rate of harmful alcohol use and dependence by women was not increased much than earlier (.2% and 1% respectively, WHO, 2018), where the alcohol abuse rate much higher among men than earlier (8.4 % and 4.4 % respectively, WHO, 2018).

In terms of age groups, people aged between 21 and 40 years old are in a more vulnerable position regarding their mental health status and alcohol consumptions than other age groups. Although fatality rate is higher among older people (14.8 % for 80 + years old, 8% for 70–79 years old, and 3.6 % for 60–69 years old) than young age group (.2%) (Worldometer, 2020, February 29) but, later age group is in more risk of psychological maladjustment. Study suggested that young people can easily trigger stress as they tend to collect information from social media (Cheng et al., 2014).

In any epidemic, not only does physical health suffer, but it also causes significant damage of mental health. During the occasion of an epidemic, those with mental illness often experience discrimination and feel alienated when they seek care for their physical health needs (Funk et al., 2010). Owing to the vulnerable circumstances, specific demography is more prone to psychological problems (Allen et al., 2014).

4.1. Limitations of the study

There are several limitations of the present study. First, self-rating scales were used to assess anxiety, depression, alcohol abuse, and mental well-being. As the whole country under lockdown, face to face in-depth interview was impossible to conduct. Therefore, there are always risks of false judgement or over judgement. Moreover, self-report data are subjected to social desirability bias. As COVID-19 epidemic gets huge attention by the world, social desirability bias might present in the data. Second, more than 50 % participants were from Wuhan province, the epicentre of COVID-19. This might question the representativeness of the study sample. Third, the data for the present study were collected through the Chinese online platform 'Tencent'. There is a possibility to provide irrational and misleading feedbacks.

4.2. Recommendation

COVID-19 is atypical pneumonia that is no longer confined to Wuhan or China, but as of March 13, 2020 has spread to 127 countries and territories around the world (Worldometer, 2020, March 13). Consequently, associated mental health problems would affect a larger community directly. That is why it is very important to implement a multi-faceted approach at the personal, social and international levels promptly. This current study addresses COVID-19 adhering psychological problems with 5 recommendations.

4.2.1. Restriction in media exposure

Among the pandemic rumors in the near past, COVID-19 is at the highest level. Rumors induced fear while an epidemic outbreak underestimates the coping strategy of people and this underestimation created panic. This panic gets potency with the uncertainty of COVID-19. The repeated broadcast through the media about the fatality of COVID-19 can trigger a sense of jeopardy. There is the risk of delayed psychological trauma and anxiety even after recovering from the

epidemic. During the SARS outbreak, we have seen that broadcasting of negative reports was banned for reducing the economic burden and risk (Xiang et al., 2014; Baculinao et al., 2020). That is why the present study recommends staying connected to reliable news media and not focusing on the absurd misleading information on social media.

4.2.2. Treatment & training plan

The 21 st century has witnessed the coronavirus epidemic twice before the outbreak of COVID-19. Hence, the findings and learning of SARS-CoV and MERS-CoV could be applied for the COVID-19 epidemic. Healthcare workers who have worked directly with the confirmed patients in the hospitals have the likelihood to suffer from physical and psychological problems. Consequently, it is important to keep them updated regarding the treatment process along with the psychosocial training because precise knowledge reduces the risk of psychological problems. Healthcare workers are also going through a kind of quarantine that can lead to high levels of depression, anxiety, PTS syndrome, in addition to their high occupational stresses. For this reason, the isolation of healthcare workers should also be included in the treatment and training plan.

4.2.3. Utilizing the online counseling platform

On January 26, 2020 National Health Commission of China has introduced the guidelines for emergency psychological crisis intervention which materially promotes the online platform as an effective alternative of face-to-face counseling sessions (NHC, 2020). Now to help the problematic groups, Chinese authority needs to be more persuasive to mobilize the online platforms since till today Chinese people consider the psychological problems a taboo though it is a normal phenomenon during an epidemic outbreak.

4.2.4. Certain care for vulnerable people

Certain characteristics, emotions, mental states, which have a more detrimental effect on mental health and COVID-19 will definitely affect if the person has a history of anxiety or Generalized Anxiety Disorder. Naturally, the prevalence of psychological problems is significantly higher among them whose friends and family members got infected or died of COVID-19. Apart from that, confirmed patients have the fear of being isolated from the society which linked with the shame of infecting others could trigger the mental illness. That is why this study recommends merging vulnerable group in the treatment plan.

4.2.5. Rehabilitation program

This present study supports the need to be more aggressive in identification and treatment of individuals after the pandemic resolves. Because previous studies showed, discharged patients of SARS-CoV from hospitals have developed anxiety, depression, PTS syndrome (Lee et al., 2007) and after a while it turns into neurological and neuromuscular symptoms and both patients and healthcare workers are vulnerable collaterally. During an epidemic there can be increased social cohesion that can delay distress, but as this cohesion decreases individuals may begin to experience more anxiety and a sense of trauma. It is important that long-term psychological support and rehabilitation be available for sustained recovery.

4.3. Conclusion

The present study provides an insight of the negative psychological effects and associated problems of COVID-19. Study showed that infected by COVID-19 or similar is not prerequisite to develop psychological problems and disorders, i.e. anxiety, depression, alcohol use disorder rather circumstantial effects, locked down in own home for infinite time, infection of family and friends, death of closed one all these could worsen the overall mental health well-being. The prevalence rate of anxiety, depression, and AUD was worrisome, which could very easily develop a potent psychiatric disorder over a long

period of time. Isolation and widespread economic damage caused many people to become psychologically troubled. The psychological outbreak is more pronounced in Hubei province, from which it can be assumed that many of the participants' friends and family members have been infected by COVID-19 and there may be cases of death as well. Psychological problems of the problematic respondents were interconnected in many ways. As emergency psychological interventions, Chinese Health Commission is providing online consultation for its 1.3 billion hankered down citizens, to make it effective more social media and online campaigns are required. Further studies are needed to ensure an adequate concentration of psychological and economic rehabilitation and to overcome current research limitations.

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Declaration of Competing Interest

I am MD Zahir Ahmed, on the behalf of authors, declare that we have no conflicts of interest to disclose.

Acknowledgements

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