

COVID-19: Are you ready to seek psychological help during home quarantine?

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Research article

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Abstract

Background: Since December 2019, an increasing number of cases named Corona Virus Disease 2019 (COVID-19) have been identified in Wuhan, China. It has widely and rapidly spread in China and several other countries. The public experienced mental health problems during home quarantine.

Methods: From Feb 17 to 20, 2020, a questionnaire star survey was used to evaluate the psychological distress / psychological help-seeking attitudes and behavior of 3,248 people over 18 years old who were quarantined at home, all the subjects filled out the questionnaires, including general information questionnaire, Kessler Psychological Distress Scale (K-10), Attitudes Toward Seeking Mental Health and Psychological help-seeking behavior items.

Results: 3,248 individuals were enrolled, and the score of psychological distress scale was 15.93 ± 6.99 , the score of psychological help seeking was 82.34 ± 13.04 . Among the socio-economic factors, age was positively associated with the psychological distress ($t=5.60, P<0.05$) and attitudes toward seeking mental health ($t=-3.380, P<0.05$); the level of income were negatively associated with psychological distress ($t=-2.609, P<0.05$) and attitudes toward seeking mental health ($t=-2.762, P<0.05$); occupation were negatively associated with the level of psychological distress ($t=-2.842, P<0.05$); gender and the level of education were positively associated with the level of attitudes toward seeking mental health ($t=6.355, P<0.05; t=3.780, P<0.05$); marital status were negatively associated with the level of attitudes toward seeking mental health ($t=-3.455, P<0.05$).

Conclusions: Widowed, rural residents, people with low level of education and economic income should be the focus of COVID-19's mental health maintenance, and making good use of media and internet tools to strengthen publicity is one of the key points of current prevention and control.

Background

A novel coronavirus (2019-nCoV) has been identified as originating in Wuhan, Hubei Province, China. It has widely and rapidly spread in China and several other countries, causing an outbreak of acute infectious pneumonia. January 30, 2020, the World Health Organization (WHO) declared this disease a "Public Health Emergency of International Concern." Fear of the unknown raises anxiety level in healthy individuals as well as those with preexisting mental health. In order to reduce human-to-human transmission, the governments, health administrative departments and medical health institutions have adopted a series of prevention and control measures in accordance with the law, such as isolation and treatment of patients, isolation of close contacts for medical observation, home isolation of ordinary people, and so on. The public is required to be quarantined at home, delay in returning to work and school, which have affected the public normal life and have resulted in different types of psychological distress such as anxiety, distress, irritability, and panic[1].

Strict quarantine measures, the spread of the epidemic, and worries about themselves and their families have a certain impact on the mood of people who are quarantined at home. With the rapid rise in the

number of infections, the public has become emotionally unstable and blindly following the crowd (such as looting for daily necessities). If psychological counseling is not carried out in time, it will not only bring serious consequences to individual mental health, but also affect social order. Fast transmission of the virus between people hinders traditional face-to-face psychological survey. By contrast, provision of online mental health assessment is safe. In this study, WeChat was used to investigate the psychological distress, attitudes Toward Seeking Mental Health Services and behavior characteristics of the public during the outbreak of COVID-19, and to analyze the factors affecting public psychological distress and psychological desire for help seeking, so as to provide support and basis for carrying out psychological assistance and psychological intervention for the public under public health emergencies.

Methods

Participants

The subjects are adult residents over 18 years old in The People's Republic of China. The awareness rate is 25%, and the design effect is 2. The recovery rate of the questionnaire is 90%, and the minimum sample size is 2,667 according to the current situation research formula.

Measures

This study was a cross-sectional study carried out by researchers from Harbin Medical University, based on WeChat to fill in the questionnaire online (questionnaire Star, <https://www.wjx.cn>), the survey tools used are as follows:

The general information questionnaire was used to assess the demographic information, including age, gender, family income, degree of education, Occupation, marital status, Current province, city and place of residence and if there are confirmed COVID-19 cases around. The degree of education was divided into elementary school or below, junior school, senior school, college graduate and master or above. Marital status was divided into single, married, divorced and widowed. Household monthly income was categorized as “ <2000 RMB”, “2000 ~ 3999 RMB”, “4000~5999 RMB” or “ >6000 RMB ”; Occupation was divided into unemployed, civil servants, medical staff, teacher, student, farmer and so on .

Kessler Psychological Distress Scale(K-10) was used to assess personal psychological distress[2], which was developed by Kessler. The content includes the frequency of non-specific mental health symptoms related to anxiety and stress in the past four weeks. The questionnaire consists of ten items, each item has five response categories ranging, the score ranges from 10 to 50. The higher the score, the more serious the psychological disturbance. The questionnaire has been used in Chinese older men and demonstrated good reliability and validity, with Cronbach's alphas for the total scale of 0.89[3]. The Cronbach's alphas was 0.957 in this study.

Attitudes Toward Seeking Mental Health was measured by Inventory of Attitudes Toward Seeking Mental Health Services (IASMHS)[4]. This questionnaire included three aspects: Psychological openness factor,

Psychological help-seeking tendency factor and Don't care about social stigma, the questionnaire consists of 24 items, each item is scored from 1 to 5, the higher the total score, the more positive the subjects' psychological help-seeking attitude, and vice versa. The questionnaire has been used in Chinese adults and demonstrated good reliability and validity, the Cronbach's alpha was 0.788[5]. The Cronbach's alphas was 0.882 in this study.

Psychological help-seeking behavior is compiled according to previous research literature: set four items according to the help-seeking object and help-seeking behavior after psychological distress, including: To solve or endure on one's own, asking friends and relatives for help, using network information to ask for help and asking a professional for help (Psychological assistance hotline, Psychological counseling institutions, etc.).

Statistical analysis

The counting data are expressed by frequency and percentage, the measurement data are expressed by mean \pm standard deviation. Two independent sample t-tests were used for comparison between the two groups, and one-way ANOVA was used for multi-group comparisons. Pearson's correlations for continuous variables and linear regression to investigate whether socio-demographic variables could predict psychological distress and attitudes toward seeking mental health. Data analysis was carried out using the statistical program package SPSS 22.0, and P-values equal or lower than 0.05 were considered statistically significant.

Results

Characteristics of the study population

A total of 3,248 people from 31 provinces, municipalities directly under the Central Government and autonomous regions were surveyed, covering Hong Kong and Taiwan. The top six provinces with the largest number of subjects are: Heilongjiang 1,213, Shandong 180, Henan 156, Hebei 154,134 in Zhejiang and 131 in Liaoning. The age of these respondents ranged from 18 to 82 years (mean=30.02 \pm 12.61). 759 were male (23.4%), 2,489 were female (76.6%), 1,626 were in cities (50.1%) and 1,622 were in villages and towns (49.9%). Marital status: 1,944 (59.9%) were unmarried, 1,201 (37%) were married, 75 were divorced, 28 were widowed, the level of education was predominantly high and university or above (2,855 cases, 87.9%), the main occupations were students 1,451 (44.7%), 611 (18.8%) were medical staff, 291 were teachers, 266 were farmers, 154 were company occupations, etc, monthly income was mostly >6000 RMB and 2000-3999 RMB (1,849 cases, 56.93%).

The current situation of public psychological distress and attitudes toward seeking mental health under the outbreak of COVID-19 at home quarantine

3,248 individuals were enrolled, and the score of psychological distress scale was 15.93 \pm 6.99, 1,257 had psychological disturbance (the total score of K-10 \geq 16), accounting for 38.7%, and 208 had serious

psychological disturbance (the total score of K-10 \geq 30), accounted for 6.4%. 2,016 (62.1%) never or rarely felt anxiety and panic, 1,034 (31.8%) sometimes felt anxiety and panic, and 1,034 (6.1%) often or always felt anxiety and panic.

The score of psychological help-seeking was 82.34 ± 13.04 . The scores of psychological openness, help-seeking tendency and social stigma were 23.6 ± 6.30 , 28.72 ± 6.31 and 28.72 ± 6.31 respectively. In this study, the low, medium and high psychological help groups were defined according to the dividing cut-off points of 25% and 75%. The number of people seeking help with low psychology was 913 (IASMHS \leq 72) (28.1%), those with moderate psychology was 1,510 (72 < IASMHS < 92) (53.5%), and those with high psychology was 825 (IASMHS \geq 92) (25.4%). According to the analysis of psychological help-seeking behavior, when they encountered psychological distress under the COVID-19 at home quarantine, 1,692 people (52.1%) turned to their relatives and friends for help, and 1,519 people (46.8%) would solve and endure it by themselves, 1,070 people (32.9%) sought help through Internet information, and only 954 people (29.4%) sought help from professionals (psychological assistance hotline, psychological counseling institutions). The elderly are more likely to solve and endure by themselves, while young people are more willing to turn to their relatives and friends and the Internet for help. Psychological distress was negatively correlated with Attitudes Toward Seeking Mental Health Services $r = -0.228$, $P < 0.001$.

Univariate analysis of public psychological distress and attitudes toward seeking mental health under the outbreak of COVID-19 at home quarantine

Univariate analysis showed that there were significant differences in public psychological disturbance among different ages, marital status, education level and occupation ($P < 0.05$), but there were no significant difference in family income and place of residence ($P > 0.05$). There were significant differences in the scores of public psychological help-seeking among different gender, age, marital status, education level, occupation, average monthly family income and place of residence ($P < 0.05$) (Table1, Table2).

The socio-economic factors predicted the level of psychological distress and attitudes toward seeking mental health

As shown in Table 3 and 4, among the socio-economic factors, age were positively associated with the psychological distress and attitudes toward seeking mental health; the level of income were negatively associated with psychological distress and attitudes toward seeking mental health; occupation were negatively associated with the level of psychological distress; sex and the level of education were positively associated with the level of attitudes toward seeking mental health; marital status were negatively associated with the level of attitudes toward seeking mental health.

Discussion

The results of this study showed that in face of the outbreak of COVID-19 at home quarantine, 38.7% had psychological distress, 6.4% had serious psychological distress, and 37.9% felt anxiety and panic. Fear and anxiety are the most common emotional problems in face of an epidemic. Due to concerns about viral infection, the consequences of pneumonia, such as isolation, death, and under the requirements of the prevention and control situation, the work intensity is high, the psychological pressure increases sharply, and the occurrence of fear, tension and fear, excessive and long-term psychological stress reaction will lead to the occurrence of stress disorder[6]. Excessive activation of the sympathetic nervous system needlessly consumes physiological resources, resulting in a decline in immunity and aggravation of pulmonary microvascular exudation, which makes it more difficult to resist the challenge of the current virus, but also reduces cognitive function and affects work efficiency.

This study showed that 45.1% had psychological distress and serious psychological problems, but only 29.4% of the people were willing to seek professional psychological assistance, 52.1% were willing to turn to friends and relatives for help, and 46.8% would solve and endure by themselves, and 32.9% sought help by using Internet information. Home isolators with psychological problems have a low proportion of professional psychological help, and many people choose to endure and solve psychological problems on their own.

Psychological distress was negatively correlated with attitudes toward seeking mental health services, psychological help-seeking has the advantages of correct cognition, strong will, positive behavior and scientific way, and its mental health level is higher[7]. Therefore, scientific and effective psychological assistance is very important to the public who have psychological distress and bad mood during the epidemic isolated at home. Local governments, mental health centers and scientific research institutes of universities have established platforms and hotlines for psychological assistance and crisis intervention, but the utilization rate of the public is not high. People who are isolated at home are more likely to choose relatives and friends, self-solution or tolerance to alleviate their inner troubles, so it can be seen that the methods of mental health assessment, psychological problem identification, psychological adjustment and counseling are particularly important. The public's knowledge of mental health and the methods of psychological adjustment and intervention through the use of the Internet are also relatively limited, and the intervention means need to pay more attention to the public mental health training suitable for family-peer mutual assistance and self-help. So that more people can accumulate a certain amount of mental health knowledge and psychological intervention skills in daily life, so as to more effectively apply to psychological assistance and intervention under public health emergencies, reduce psychological stress reaction, reduce psychological distress, and promote psychological resilience and psychological growth after stress.

According to the univariate and multiple regression analysis, the psychological problems of people with advanced age, low income and low education level are more serious. The level of mental health gradually decreases with the increase of age, and the cognitive function of the elderly is declining with the increase of age, and the decrease of the ability to participate in social activities has a negative impact on mental health[8]. In the old age, the function of various organs began to decline, and the physical function of the

elderly decreased. At the same time, the fatality rate of the elderly in the COVID-19 epidemic was high, which aggravated the psychological distress of the elderly. Low-income individuals have serious psychological problems, and they often take negative psychological help-seeking, which is consistent with the results of previous study[9].

People with good financial conditions have less pressure to live and seek medical treatment, have a high degree of social participation and pay more attention to emotional needs. Women have more positive professional psychological intention to ask for help than men, it may be due to the gender advantage of women, women are more willing to talk to people, while men are more reluctant to ask for help because of face concerns[10]. People with a higher level of education have less psychological problems and are more likely to take positive psychological help, which may be related to the fact that people with a higher level of education have more ways of entertainment and live a more fulfilling and richer life[11], and those with a high level of education have some common sense of psychology and can adjust the bad mood caused by the epidemic in time. A good marriage can reduce the risk of mental illness[12]. This study also draws a similar conclusion that marital status has a significant impact on the public's psychological help-seeking behavior, and widows are more likely to take negative psychological help-seeking, which may be related to their state of living alone and lacking family support. A sound family structure can provide sufficient support at the material and spiritual levels. Rural residents often take negative psychological help-seeking, which may be related to the lack of channels and frequency for rural people to accept mental health. Although mobile phones and other electronic media are widely used at present, the popularity of the Internet has not been reached in rural areas, areas with low educational level and economically backward areas. Therefore, the local community and the government should publicize COVID-19's basic knowledge through online lectures, WeChat message push and other diversified channels, and invite professional psychological experts to guide them to properly regulate their bad emotions. Raise people's awareness of COVID-19, at the same time provide free online psychological counseling and psychological counseling professionals, and provide psychological counseling and counseling conditions for individuals in rural areas and poor economic conditions. For those who are widowed or living alone, their relatives and friends should be urged to show their emotional care, and community workers should regularly consult their psychological status by telephone, try to meet the reasonable needs of life, and if there are psychological problems, conduct psychological counseling or psychotherapy referrals to ensure that psychological problems are solved in a timely manner.

As far as we known, there are some limitations need to be considered. First, the data were collected by the WeChat, people who didn't use WeChat or couldn't get the available Internet could not attend the survey. Second, the majority of the participants were female (76.63%) and most were young people (79.19%) in the present study. The distress of the elderly should be further surveyed because they were fragile during the home quarantined. Third, the dynamic change of psychological distress should be assessed in the future study.

Conclusion

The mental health of the widowed, rural residents, people with low level of education and economic income should be paid much attention during the COVID-19 epidemic, and making good use of media and Internet tools to strengthen publicity is one of the key points of current prevention and control.

Abbreviations

COVID-19: Corona Virus Disease 2019; RMB: Ren Minbi; K-10: Kessler Psychological Distress Scale; IASMHS: Attitudes Toward Seeking Mental Health was measured by Inventory of Attitudes Toward Seeking Mental Health Services; ANOVA: Analysis of variance.

Declarations

Ethics approval and consent to participate

This survey has been approved by the ethics committee of Harbin medical university. All participants provided written informed consent. The questionnaire was treated as confidential and anonymous.

Consent to publish

Not applicable.

Availability of data and materials

The datasets used and/or analyzed during this study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

HZ and HS contributed equally for this manuscript. They analyzed data and wrote the manuscript. DW contributed to the data collection and data analysis. LW contributed to the literature search, YC collected the data. YZ did the study design, data collection and data interpretation. All authors have read and approved the final version of the manuscript.

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Tables

Table 1 Univariate analysis of public psychological distress under the outbreak of COVID-19 at home quarantine

Variable		N(%)	Psychological distress	t/F	P
Gender	Male	759(23.37%)	16.01±7.24	t=0.52	0.062
	Female	2489(76.63%)	15.85±6.88		
Age	The elderly	30(0.92)	21.53±10.49	F=14.93	0.000
	Middle-aged people	646(19.88)	16.66±6.85		
	Young people	2572(79.19)	15.68±6.94		
Marital status	Married	1201(36.98%)	16.68±6.78	F=18.58	0.000
	Never Married	1944(59.85%)	15.31±6.93		
	Divorced	75(2.31%)	17.82±7.04		
	Windowed	28(0.86%)	21.85±12.12		
Education	Primary school or below	174(5.36%)	18.72±8.01	F=9.30	0.000
	Secondary school	219(6.62%)	15.99±6.49		
	High school	499(15.36%)	15.07±6.20		
	College/bachelor degree	2043(62.96%)	15.83±7.10		
	Graduate student	313(9.64%)	16.35±6.86		
Occupation	No job	126(3.88%)	12.02±8.44	F=9.66	0.000
	farmer	266(8.19%)	17.70±7.51		
	Medical staff	611(19.58%)	17.14±7.34		
	Civil servants	41(1.26%)	17.02±7.60		
	Service trade	79(2.43%)	16.64±6.87		
	Clerk	154(4.74%)	16.28±6.91		
	Individual	87(2.68%)	15.40±5.93		
	Teacher	291(8.96%)	15.40±5.90		
	Student	1451(44.67%)	14.88±6.69		
Monthly household income	<2000	758(23.34%)	16.42±7.57	2.40	0.066

	2000-3999	846 [26.05]	15.48±6.87		
	4000-5999	641 [19.74]	15.87±6.85		
	>6000	1003 [30.88]	15.96±6.71		
Home place	City	1626 [50.06]	16.12±6.90	1.59	0.205
	Small towns	406 [12.5]	15.49±6.98		
	Rural area	1216 [37.44]	15.81±7.12		

Table 2 Univariate Analysis of public attitudes toward seeking mental health under the outbreak of COVID-19 at home quarantine

Variable		N(%)	Attitudes Toward Seeking Mental Health Services	t/F	P
Gender	Male	759(23.37)	79.16±13.53	T=5.29	0.022
	Female	2489(76.63)	83.32±12.73		
Age	The elderly	30(0.92)	76.00±17.21	F=9.48	0.000
	Middle-aged people	646(19.89)	80.84±13.57		
	Young people	2572(79.19)	82.79±12.80		
Marital status	Married	1201(36.98)	82.23±13.42	F=5.67	0.001
	Never Married	1944(59.86)	82.66±12.64		
	Divorced	75(2.31)	78.95±13.44		
	widowed	28(0.86)	74.32±18.26		
Education	Primary school or below	174(5.36)	78.29±15.66	F=16.47	0.000
	Secondary school	219(6.74)	78.73±14.77		
	High school	499(15.36)	81.99±13.02		
	College/ bachelor degree	2043(62.90)	82.55±12.64		
	Graduate student	313(9.64)	86.39±11.33		
Occupation	No job	126(3.88)	78.20±13.23	F=6.76	0.000
	Farmer	266(8.19)	78.83±16.56		
	Medical staff	611(18.81)	93.18±12.65		
	Civil servants	41(1.26)	82.93±12.60		
	Service trade	79(2.43)	78.99±11.91		
	Clerk	154(4.74)	82.38±12.59		
	Individual	87(2.68)	81.00±14.14		
	Teacher	291(8.96)	86.09±11.52		
	Student	1451(44.67)	82.53±12.47		

Monthly household income	<2000	758 23.34	80.52±13.22	F=7.93	0.000
	2000-3999	846 26.05	82.91±13.18		
	4000-5999	641 19.74	83.18±13.23		
	>6000	1003 30.88	83.33±12.51		
Home place	City	1626 50.06	83.24±12.33	F=7.78	0.000
	Small towns	406 12.5	81.46±11.65		
	Rural area	1216 37.44	81.44±14.26		

Table 3 The socio-economic factors predicted the level of psychological distress

Variable	B	SE	Beta	t	P
Age	.068	.012	.123	5.600	.000
Gender	.043	.298	.003	.145	.884
Marital status	.371	.254	.030	1.462	.144
Education	-.121	.158	-.016	-.762	.446
Occupation	-.176	.062	-.052	-2.842	.005
Monthly household income	-.346	.133	-.057	-2.609	.009
Home place	-.204	.169	-.027	-1.203	.229

Table 4 The socio-economic factors predicted the level of attitudes toward seeking mental health

Variable	B	SE	Beta	t	P
Age	-.076	.022	-.074	-3.380	.001
Gender	3.481	.549	.113	6.335	.000
Marital status	-1.617	.468	-.070	-3.455	.001
Education	1.105	.292	.079	3.780	.000
Occupation	.126	.115	.020	1.100	.271
Monthly household income	-.676	.245	-.060	-2.762	.006
Home place	.075	.313	.005	.239	.811

Supplementary Files

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