Knowledge, Risk Perception, Precautionary Behavior and Level of Worry towards the 2019 Coronavirus Disease (COVID-19) among Psychiatric Outpatients

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ABSTRACT

Objective: To identify level of worry towards COVID-19, and related factors among psychiatric outpatients.

Methods: A cross-sectional study surveyed psychiatric outpatients at Songklanagarind Hospital; from May to June, 2020.The questionnaires composed of; 1) Demographic inquiry 2) COVID-19 knowledge 3) COVID-19 risk perception 4) COVID-19 precautionary behaviors 5) Level of worry towards COVID-19. All data were analyzed using descriptive statistics, and associated factors as to the level of worry towards COVID-19 were analyzed by chi-square and logistic regression.

Results: There were 400 participants; neurosis (60.0%), and non-neurosis (40.0%). The majority of participants were female (62.0%), with a mean age of; 44.5±14.6 years. Almost all participants reported a good score of COVID-19 knowledge (91.8%), and having good precautionary behavior towards COVID-19 (97.5%). Majority of participants had a low risk perception (54.2%) and a low level of worry towards COVID-19 (67.0%). Generalized anxiety disorder and major depressive disorder participants were the 1st and 2nd group who had a high to moderate level of worry towards COVID-19. Aside from, from the multivariate analysis, this study indicated income, psychiatric disorders and risk perception towards COVID-19 were statistically significant associated factors related to levels of worry.

Conclusion: Most psychiatric outpatients had good knowledge, good precautionary behaviors and a low level of worry towards COVID-19; with associated factors to level of worry being income, risk perception and being diagnosed with generalized anxiety disorder. However, major depressive disorder patients should also be concerned.

Keywords: COVID-19; knowledge; perception; psychiatric patient; worry (Siriraj Med J 2021; 73: 1-9)

INTRODUCTION

The 2019 coronavirus disease (COVID-19) epidemic in China became a global health horror, and the rapid spread of the disease raised grave concerns about the future trajectory of the outbreak.[1] In January 2020, the World Health Organization (WHO) declared the COVID-19 epidemic as a public health emergency of international concern.[2] In Thailand, on the 13nd of January 2020, the first COVID-19 case from Wuhan, Hubei Province, China was imported.[3]

During the initial phase of the COVID-19 epidemic in China, feelings of extreme vulnerability, uncertainty and threat to life were perceived.[4] In addition, it caused a profoundly wide range of psychosocial impacts on people

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individually, within the community and on international levels. According to the individual impact level, the study reported that the Chinese people suffered from a moderate to severe psychological impact;[5,6] such as, fear of falling sick or dying, feelings of helplessness, worrying or anxiety about their family members contracting COVID-19 and stigma. Female gender, student status, specific physical symptoms and poor self-rated health status were significantly associated with a greater psychological impact of the outbreak; causing higher levels of stress, anxiety, depression,[6] fear and stigma, which might be certainly a consequence of mass quarantine.[6,7] Some quarantined people expressed psychological concerns including fears about infecting others, being infected themselves or having avoidance behaviors of people and places after quarantine.[8] Additionally, during the "repair" phase: when the infection was being brought under control, depression and avoidance were evident.[4]

However, during the outbreak of this severely infectious disease, the changing of individual mental health and psychosocial responses to crisis were the major topics that needed essential and adequate handling.[9] The next emerging outbreak of disease, like COVID-19, may cause the same psychological impact; informed, ignorance, panic,[10-12] fear[13,14] and misperceived as possible sources for infection,[9,14] or it may cause different responses. In addition to this, the stigmatization of patients who are perceived as possible sources for infection,[9] is remarkable.

Psychiatric patients are people with vulnerable mental health, when having significant stress, some patients have maladaptive coping, or use an immature defense mechanism.[15] In the past, the study about psychiatric inpatient's reaction to the SARS epidemic reported the patients attempted to reduce the effect of stress by living in an "autistic bubble" or by denying it was happening. On the other hand, some patients also psychotically interpreted these stressors.[16] Thereby, psychiatric patients should be protected by adequate caution and sufficient supplies of protective gear.[11] However, COVID-19 is a new, emerging, and rapidly evolving situation. This outbreak may impact not only healthy people[11-13], but also those with vulnerable mental health.[17] Studies concerning knowledge, risk perception or concern, precautionary behavior, levels of worry towards COVID-19 and related factors among patients with mental health problems will provide basic, useful information for employment of realistic risk perception, effective precautions, communication through various information sources and psychosocial support frameworks before, during and after a challenging incident.[18-20]

MATERIALS AND METHODS

Study design

This cross-sectional study explored all psychiatric outpatients, who were diagnosed with generalized anxiety disorder (GAD), panic disorder, major depressive disorder (MDD), schizophrenia and bipolar disorder (BD), at Songklanagarind Hospital, Faculty of Medicine, Prince of Songkla University. The inclusion criterions were psychiatric outpatients, who able to complete all of the questionnaires. Exclusion criterion were patients who had more than one psychiatric diagnosis or comorbidity and were unable or lacked the mental capacity to complete all of the questionnaire, or when it was inconvenience for them to participate or those that wanted to stop doing the questionnaire.

Patients interested in participating in the study, were provided with the rationale and overview of the research, and the researcher called them for an interview, by telephone, later. If, at that time was not convenient for the participants the researcher would request an interview later or stop the interview. Adhering to the policy of strict confidentiality, the signatures of the participants were not required, and all of the participants retained the right to withdraw from the research at any time. After the interview, the participants received the result promptly, and advice, or further management would be provided; if the participants had a high level of worry.

This study was endorsed by The Ethics Committee of the Faculty of Medicine, Prince of Songkla University. (REC:63-166-3-4)

Participants

Using n. for. Survey from R program, the sample size was given as at least 384 subjects. Then the participants were included from all psychiatric outpatients, who had an appointment and were followed up at the psychiatric outpatient clinic; from May to June, 2020. The co-researcher grouped the patients by counting 80 participants per diagnosis. The neurosis group contained patients diagnosed with panic disorder, GAD and MDD. Whereas the non-neurosis group contained patients diagnosed with schizophrenia and BD. Each diagnosis was retrieved from the medical register, which was based on ICD-10 criteria.

Measurement tools

Questionnaire modification was performed by 5 psychiatrists, then content validity was conducted. The questionnaires composed of 5 parts:

1) Personal and demographic inquiry consisting

of gender, age, education level, religion, hometown, marriage status, income and underlying disease.

2) Knowledge towards COVID-19 contained 5 items; etiology; route of infection; nature of disease. Each item was rated into 2-points ranging from "1" (disagree) to "2" (agree).[5,21] A total score of more than 3 was having good knowledge, and a score of less than 3 was poor knowledge.

3) Risk perception towards COVID-19 contained 6 items; personal and comparative risk of contracting COVID-19 at the same gender, age and living area; personal and comparative beliefs in the ability to prevent COVID-19 and general infectious diseases. Each item was rated into 3-points ranging from "1" (low risk) to "3" (high risk). The total scores ranged from 6 to18; a score of 6 (low risk perception), 7-12 (moderate risk perception), 13-18 (high risk perception).[22]

4) The precautionary behaviors towards COVID-19 were measured by 10 items. The items were: avoiding travel in affected areas, or travel on public transport, eating at food courts or restaurants, going to work or school, shaking hands; wearing mask protection; washing your hands by having taken extra care of cleanliness; health promotion by eating a balance diet, regular exercise and sleeping enough. The total scores ranged from 10 to 30; a score of 10 (poor precaution), 11-20 (moderate precaution), 21-30 (good precaution).[22]

5) The level of worry towards COVID-19 contained 5 items; worry about one's own risk of COVID-19; prevention and avoidance behavior; disturbance of daily activity. Each item was rated into 3-points ranging from "1" (no worry) to "3" (high worry).[22,23] The total scores ranged from 5 to 15; a score of 5-6 (low level of worry), 7-11 (moderate level of worry), 12-15 (high level of worry).[23]

Statistical analysis

All data were analyzed, in order to describe the knowledge, risk perception, precautionary behavior and level of worry towards COVID-19, using the descriptive statistic method. The results were presented as average, percentage, frequency, and standard deviation. Associated factors to level of worry towards COVID-19 were analyzed by chi-square and logistic regression.

RESULTS

Demographic characteristics

There were 400 psychiatric outpatients who completed the questionnaires by telephone, 248 were female (62.0%) and 204 were unmarried (51.0%). Overall, the mean age was 44.5±14.6 years. Of the participants, 245 were employed (61.3%) and the median income (IQR) was 20,000 (20,000-30,000) Baht, per month. In addition, more than a half of the participants (64.5%) had no medical illness. (Table 1)

Knowledge towards COVID-19

Almost all participants had a good score of knowledge towards COVID-19 (91.8%). The mean score of knowledge towards COVID-19, among all participants, was 4.7±0.9; whereas, the mean score of knowledge towards COVID-19 among both neurosis and non-neurosis groups was 4.8±0.9, 4.6±0.9, respectively. However, when a comparison of the mean scores of knowledge towards COVID-19 between the two groups was made it revealed a statistically significant difference. Schizophrenic disorder participants were the group which had the lowest number of a good score of knowledge towards COVID-19 (77.5%). (Table 2)

In addition, the majority of participants gained their COVID-19 information and knowledge from television, family members and social media (98.8%, 67.0%, 59.5%, respectively). Besides this, the participants felt satisfied with the amount of health information available in media (95.2%).

The risk perception towards COVID-19

According to this survey, more than a half of the participants had low risk perception towards COVID-19 (54.2%). The mean score of risk perception towards COVID-19, among all participants, was 7.8±2.2; whereas, the mean score of risk perception towards COVID-19 among the neurosis and non-neurosis group were 8.2±2.4, 7.2±1.8, respectively. In addition, there was statistically significant difference of the mean score of risk perception towards COVID-19 between the two groups. (Table 2)

The precautionary behavior towards COVID-19

Almost all participants had good precautionary behavior towards COVID-19 (97.5%). The mean score of precautionary behavior towards COVID-19 among all participants was 24.8±2.3; whereas, the mean score of precautionary behavior towards COVID-19 among both the neurosis and non-neurosis group were 25.5±2.2, 23.9±2.1, respectively. Among the precautionary behavior towards COVID-19, there was no statistically significant difference between the two groups. (Table 2)

The level of worry towards COVID-19

More than a half of the participants had a low level of worry towards COVID-19 (67.0%). The mean level of worry towards COVID-19, among all participants, was 6.4±1.9; whereas, the mean level of worry towards

TABLE 1. Demographic characteristics (n=400).

Demographic characteristics	Number (%)								Chi2 *P*-value
		Neurosis				Non-neurosis			
	All group (n=400)	GAD (N=80)	Panic (N=80)	MDD (N=80)	Total (N=240)	BD (N=80)	Schizophrenia (N=80)	Total (N=160)	
Gender									<0.001
Male	152 (38.0)	17 (21.2)	16 (20.0)	28 (35.0)	61 (25.4)	47 (58.8)	44 (55.0)	91 (56.9)	
Female	248 (62.0)	63 (78.8)	64 (80.0)	52 (65.0)	179 (74.6)	33 (41.2)	36 (45.0)	69 (43.1)	
Marital status									<0.001
Single/ Divorce	211 (52.8)	23 (28.7)	36 (45.0)	48 (60.0)	107 (44.6)	38 (47.5)	66 (82.5)	104 (65.0)	
Married	189 (47.2)	57 (71.2)	44 (55.0)	32 (40.0)	133 (55.4)	42 (52.5)	14 (17.5)	56 (35.0)	
Religion									0.84
Buddhism	337 (84.2)	70 (87.5)	66 (82.5)	65 (81.2)	201 (83.8)	70 (87.5)	66 (82.5)	136 (85.0)	
Islam, other	63 (15.8)	10 (12.5)	14 (17.5)	15 (18.8)	39 (16.2)	10 (12.5)	14 (17.5)	24 (15.0)	
Highest level of education									0.01
Primary school and below	119 (29.8)	37 (46.2)	28 (35)	13 (16.2)	78 (32.5)	17 (21.2)	24 (30)	41 (25.6)	
Secondary school	124 (31.0)	13 (16.2)	14 (17.5)	34 (42.5)	61 (25.4)	32 (40.0)	31 (38.8)	63 (39.4)	
Bachelor degrees and above	157 (39.2)	30 (37.5)	38 (47.5)	33 (41.2)	101 (42.1)	31 (38.8)	25 (31.2)	56 (35.0)	
Home province									0.68
Songkhla	261 (65.2)	48 (60)	57 (71.2)	54 (67.5)	159 (66.2)	51 (63.7)	51 (63.7)	102 (63.7)	
Other	139 (34.8)	32 (40)	23 (28.7)	26 (32.5)	81 (33.8)	29 (36.2)	29 (36.2)	58 (36.2)	
Income (Baht/month)									0.19
No salary	135 (33.8)	35 (43.8)	18 (22.5)	37 (46.2)	90 (37.5)	16 (20.0)	29 (36.2)	45 (28.1)	
≤15,000	58 (14.5)	11 (13.8)	14 (17.5)	10 (12.5)	35 (14.6)	10 (12.5)	13 (16.2)	23 (14.4)	
15,001-25,000	134 (33.5)	24 (30.0)	34 (42.5)	19 (23.8)	77 (32.1)	34 (42.5)	23 (28.7)	57 (35.6)	
>25,000	73 (18.2)	10 (12.5)	14 (17.5)	14 (17.5)	38 (15.8)	20 (25.0)	15 (18.8)	35 (21.9)	
Medical illness									1
No	258 (64.5)	38 (47.5)	60 (75.0)	57 (71.2)	155 (64.6)	45 (56.2)	58 (72.5)	103 (64.4)	
Yes	142 (35.5)	42 (52.5)	20 (25.0)	23 (28.7)	85 (35.4)	35 (43.8)	22 (27.5)	57 (35.6)	

Chi2 p-value is comparison between neurosis and psychosis

TABLE 2. Knowledge, risk perception, precautionary behavior and level of worry towards COVID-19 (n=400).

	Number (%)								Chi2 *P*-value
		Neurosis				Non-neurosis			
	All group (n=400)	GAD (N=80)	Panic (N=80)	MDD (N=80)	Total (N=240)	BD (N=80)	Schizophrenia (N=80)	Total (N=160)	
Knowledge									< 0.001
Poor	21 (5.2)	5 (6.2)	2 (2.5)	4 (5.0)	11 (4.6)	2 (2.5)	8 (10.0)	10 (6.2)	
Fair	12 (3.0)	1 (1.2)	0 (0.0)	0 (0.0)	1 (0.4)	1 (1.2)	10 (12.5)	11 (6.9)	
Good	367 (91.8)	74 (92.5)	78 (97.5)	76 (95.0)	228 (95.0)	77 (96.2)	62 (77.5)	139 (86.9)	
Risk perception									<0.001
Low risk	217 (54.2)	35 (43.8)	42 (52.5)	34 (42.5)	111 (46.2)	54 (67.5)	52 (65.0)	106 (66.2)	
Moderate	169 (42.2)	39 (48.8)	35 (43.8)	42 (52.5)	116 (48.3)	25 (31.2)	28 (35.0)	53 (33.1)	
High	14 (3.5)	6 (7.5)	3 (3.8)	4 (5.0)	13 (5.4)	1 (1.2)	0 (0.0)	1 (0.6)	
Precautionary behavior									0.53[a]
Poor	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
Moderate	10 (2.5)	2 (2.5)	2 (2.5)	1 (1.2)	5 (2.1)	1 (1.2)	4 (5.0)	5 (3.1)	
Good	390 (97.5)	78 (97.5)	78 (97.5)	79 (98.8)	235 (97.9)	79 (98.8)	76 (95.0)	155 (96.9)	
Level of worry									<0.001
Low	268 (67.0)	39 (48.8)	59 (73.8)	44 (55.0)	142 (59.2)	61 (76.2)	65 (81.2)	126 (78.8)	
Moderate	120 (30.0)	36 (45.0)	19 (23.8)	32 (40.0)	87 (36.2)	18 (22.5)	15 (18.8)	33 (20.6)	
High	12 (3.0)	5 (6.2)	2 (2.5)	4 (5.0)	11 (4.6)	1 (1.2)	0 (0.0)	1 (0.6)	

[a]Fisher's exact test

Chi2 p-value is comparison between neurosis and psychosis

COVID-19 among the neurosis and non-neurosis groups were 6.8±2.1, 5.9±1.6, respectively. Amongst the level of worry towards COVID-19, there were statistically significant differences between the two groups. In addition, GAD and MDD participants were the 1st and 2nd groups who had high to moderate levels of worry towards COVID-19. (Table 2)

The association between demographic characteristics, knowledge, risk perception, precautionary behavior towards COVID-19, and level of worry

Variables, whose p-values from the univariate analysis were lower than 0.2, were included in multivariate analysis. From the multivariate analysis it was indicated that income, psychiatric disorder, and risk perception towards COVID-19 were statistically significant associated factors related to level of worry.

Finally, the participants who had lower income reported more level of worry than the higher income and unemployed groups. Comparing with GAD participants, other neurosis and non-neurosis participants had lower level of worry towards COVID-19. (Table 3)

DISCUSSION

This survey indicated that the majority of psychiatric outpatients had good knowledge towards COVID-19 as well as which, they perceived that they had a low risk perception towards COVID-19 infection. However, almost all psychiatric outpatients still had good precautionary behavior towards COVID-19. The reason for this outcome might be that all participants were psychiatric outpatients, who might have a few psychological symptoms and more ability to get news or health information than psychiatric inpatients. Besides, all participants were university hospital outpatients who might get more medical data towards COVID-19 than general psychiatric hospital patient. In addition, the majority of schizophrenia and bipolar outpatients at Songklanagarind Hospital had

TABLE 3. Factors associated with moderate to high level of worry towards COVID-19.

Factors	Crude OR (95%CI)	Adjusted OR (95%CI)	*P*-value LR-test
Income			0.016
≥ 25,000	Reference	Reference	
15,001-25,000	1.34 (0.74,2.42)	1.81 (0.84,3.90)	
≤ 15,000	1.92 (0.95,3.89)	2.83 (1.06,7.51)*	
No income	0.39 (0.20,0.76)	0.70 (0.28,1.72)	
Psychiatric disease			<0.001
GAD	Reference	Reference	
Panic	0.34 (0.17,0.66)	0.18 (0.07,0.46)*	
MDD	0.78 (0.42,1.45)	0.55 (0.22,1.36)	
BD	0.30 (0.15,0.58)	0.30 (0.12,0.80)*	
Schizophrenia	0.22 (0.11,0.45)	0.16 (0.06,0.44)*	
Risk perception			<0.001
Moderate to high risk	Reference	Reference	
Low risk	0.02 (0.01,0.05)	0.03 (0.01,0.06)*	

*Statistical significance

fair to good quality of life, low level of stigma as well as having self-esteem and self-actualization.[24,25] Moreover, most of the psychiatric patients' caregivers were either; their mother or father or close relatives; who had a low feeling of burden in caring. Hence, they could take care of and help the psychiatric patients to cope or protect themselves towards COVID-19 via adequate caution very well.[26] Therefore, the participants in this study had good precautionary behavior and low level of worry towards COVID-19, which was different from the previous study conducted as to the SARS epidemic, in which it reported that psychiatric inpatients attempted to reduce the effect of stress by denying the significance of these stressors.[16]

However, the study found the prevalence of moderate to high level of worry towards COVID-19, among the psychiatric outpatients, was 33.0%. Moreover, the GAD participants reported the highest level of worry towards COVID-19, which might be the nature of the disorder. As the previous study, during the COVID-19 epidemic in China, 23.6% neurosis patients with, major depressive disorder, anxiety disorders, mixed anxiety and depressive disorder reported a score of 10 or higher in the DASS-21 anxiety score, indicating the presence of moderate to severe anxiety symptoms.[27] Moreover, the related factors to level of worry towards COVID-19 were risk perception towards COVID-19. The higher risk perception of infection was associated with a higher level of worry and protective behavior.[28,29] Those results were the same as the findings from this study.

In addition, our study identified that unemployed status was significantly associated with low level of worry towards COVID-19. The reason might be due to spending more time at home, so as the risk perception was lower. On the other hand, employed status and stay-at-home orders were associated with greater health anxiety, financial worry and loneliness.[30] Therefore, the employed group should be considered as part of the mental health crisis. Furthermore, a high education level was significantly associated with a high level of worry towards COVID-19. More educated patients may have more knowledge, can get more information, so their over-concern might lead to a higher level of worry towards COVID-19. As the previous study showed that the more level of epidemic knowledge, the more level of epidemic worry.[22] In contrast; however, some studies have shown that improving knowledge of the epidemic could reduce the fear and anxiety.[31]

Finally, this study showed 91.8% of participants had a good score of COVID-19 knowledge. Moreover, 97.5% of the participants had good precautionary behavior towards COVID-19. In our opinion, Thailand is a country that has an excellent, primary health care system, which provides for a good capacity to distribute health knowledge, health promotion and prevention towards COVID-19, for all of those living in the Thai population. Hence, all over Thai people can perceive the current health information correctly and in a real time process.

Strengths and limitations

This study had strengths and limitations. To our knowledge, it is the first study that explored coping strategies, knowledge, and levels of psychological problems in people with mental disorders. The study also involved a considerable sample size of the participants with various diagnoses. However, there were some limitations to this study. Regarding the cross-sectional survey, this study employed self-reporting questionnaire's, for individual evaluation via telephone. Because of social distancing policy, we could not perform a face to face interview, so the information might have been led into a bias. In addition, restriction of inpatient admission, therefore, we could not evaluate the inpatient who assumed having more active symptoms. Moreover, this study was quantitative, and the sample size was restricted to only psychiatric outpatients from the university hospital in the lower part of Southern Thailand and psychiatric outpatients from other general psychiatric hospital or clinic were not included. Furthermore, this study surveyed only GAD, panic disorder, MDD, BD and schizophrenia patients whereas, healthy control group was not compared. Thus, it is too soon to generalize nation-wide, or cannot be used for summing up all Thai psychiatric outpatients or inpatients. Besides these factor, the study surveyed in the nearly 'repair' phase of the COVID-19 epidemic in Thailand, thus saying it may not cover all related matters to patient stress, during all phases of this epidemic.

Future recommendations and implications

Henceforward, studies have been recommended to include additional psychiatric outpatients and inpatients at other hospitals, within Thailand. In other words, a multi-center study should be introduced. Furthermore, comparing with normal people, and including other psychiatric patients such as obsessive–compulsive disorder, schizoaffective disorder should be performed. Moreover, other studies should retain more qualitative or in depth methods for specific psychiatric disorders, and survey them during all epidemic phases.

CONCLUSION

Most psychiatric outpatients had good knowledge, good precautionary behavior and a low level of worry

towards COVID-19. Associated factors, as to the level of worry; being income, risk perception and being diagnosed with GAD. However, MDD were the patient whom should be as of as concern.

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