

How to Cite:

Abouzed, M., Elawdy, A. K., Elsherbiny A. M., Elzahab, N. F. A., Abuhegazy, H., Ahmed, S. E., Altuhayni, A. S., & Salama, B. (2022). Study of burning out, knowledge and attitude of Egyptian psychiatrist towards COVID-19 pandemic. *International Journal of Health Sciences*, 6(S6), 300–313. <https://doi.org/10.53730/ijhs.v6nS6.9740>

Study of burning out, knowledge and attitude of Egyptian psychiatrist towards COVID-19 pandemic

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Abstract---Background and aim: Coronavirus disease-2019 (COVID-19) is a new pandemic threatening people all over the world. This study assessed the prevalence of burnout, knowledge and attitude of Egyptian psychiatrists during COVID-19 pandemic and factors related. Methods: An online cross-sectional, descriptive study used an online questionnaire distributed through social media among a sample of Egyptian psychiatrists (the total number was 281 psychiatrists) work in different sectors of hospitals (general, governmental and private psychiatric hospitals). Results: Most of the participants were female (n

= 182, $n = 64.76\%$), age range: (27–66) years. One hundred sixty-five psychiatrists (58.71%) work in governmental psychiatric hospitals. The frequency of burnout was 31.07% ($n=87$) and associated with significant correlations of some sociodemographic data such as gender, place of work, years of experience, and other factors. Overall, 80.07% ($n = 225$) had sufficient knowledge, 75% ($n = 212$) had a positive attitude, no significant factor was associated with knowledge while gender, place of work and long of experience were significantly associated with positive attitude. Conclusions: High prevalence of burnout related to COVID-19 among Egyptian psychiatrists; there is a need to put a plan to decrease burnout and related factors and to promote their wellness; Egyptian psychiatrists have a good knowledge and attitude towards COVID-19 but need more infection control programmes training to improve their knowledge and attitude also.

Keywords---COVID-19 pandemic, burnout, knowledge, attitude, Egyptian psychiatrist.

Introduction

In December 2019, a new coronavirus infection (COVID-19) emerged in China and spread all over the world. On 12 January 2020, the world health organization (WHO) reported that a novel coronavirus is the causative organism of a respiratory illness outbreak in Wuhan city, China (WHO) confirmed it was a pandemic after 3 months on March 2020 (WHO- 2019). On 14th February 2020 Egyptian ministry of health reported the first case in the country; on the 4th of April 2020, the total number of infected people reached 1000 in Egypt (Egyptian stat, 2020). According to Johns Hopkins University, more than 1.1 million people worldwide have been infected and 60,000 persons killed (JOHN HOPKINS -2020). On 11th April, The Egyptian medical syndicate announced that 43 Egyptian physicians had been infected with coronavirus, 3 of whom had died (MSE, 2020). The epidemic has been linked with a higher epidemic of Job pressure, a perception of increased risk of infection, social life disturbance, isolation and psychological well-being problems (Semple & Cherrie, 2020).

The psychological distress of physician in previous infectious diseases outbreaks were physical and emotional exhaustion due to an overburdened healthcare system (Shanafelt et al., 2012). Health care workers (HCWS) are the key role. Research on the adverse effect of past pandemic diseases on the psychological well-being of (HCWS) shows a high level of anxiety, and fear of stigmatization, besides concern about their health also concern about their family health and fear of being a source of infection for them (Chen et al., 2020). Burnout is a mental symptom affecting mainly professionals who are working with other people in stressed conditions. Burnout is seen in healthcare providers as emotional exhaustion, inability to provide more to others, depersonalization, emotionally bluntness toward their patients, and dealing with patients as objects.

Psychiatrists are exposed to more stressors during epidemics than other health workers as perceived psychiatric stigma (Maslach, Jackson, Leiter, 1996). Many

studies represented the effect of an epidemics on the mental health of health care workers concluded that were the need to establish a good therapeutic relationship with patients, deal with violent patients, patient suicide, and increase anxiety and depression among normal people and increase relapse of their patient due to epidemic stressors were the most common stressors on mental health workers during epidemics (Wurm et al., 2016). Cabello et al. (2020) reported in their systematic review about psychological reactions and the epidemic's impact on the mental health of health care as workers' anxiety (45%) was the highest disorder, then depression (38%), acute stress disorder (31%), while (29%) suffered from burnout. Burnout prevalence among psychiatrists from 22 countries was 36.7% in a study by N. Jovanovic et al. 2016.

The psychological support to the public and reassurance is a major role of psychiatrists toward society as well as toward their collage from other medical specialities who are on the frontline is valuable (Chen et al., 2020). Also, psychiatrists have a key role in managing the psychological consequences of epidemics and home isolation imposed by the government on normal people, their patients and other healthcare workers (Elhashimi, Fajr. et al., 2021). The knowledge and attitudes of healthcare workers regarding COVID-19 are very valuable in dealing with the epidemic and may reduce morbidity and mortality rates among healthcare staff. The knowledge and attitude of the psychiatrist regarding COVID-19 are important factors in reducing the disease's negative impact on them and their patients. Due to the nature of some psychiatric disorders that affect the insights and judgment of the patients, so the psychiatrist may have an important role in the participation of the patient's protection (Zhou, Tang, Wang et al., 2020).

Many studies measured the knowledge and attitudes of health care workers towards past epidemics (Askarian et al., 2007; Sarani et al., 2016; Angelillo et al., 2001; Daugherty et al., 2009; Ma et al., 2011), but up to our knowledge, we did not find any study measured knowledge and attitude of psychiatrist during the past epidemic outbreak. Understanding psychiatrists' knowledge, and attitudes, help to improve the outcomes and decrease morbidity and mortality among psychiatrist during COVID-19 outbreak. The aim of this study was to assess burnout, knowledge and attitude among a sample of Egyptian psychiatrists towards COVID-19.

Methods

A cross-sectional study was conducted for 1 month (APRIL 2020) through an online questionnaire; due to the co-lockdown in Egypt at that time, the link was sent through social media, especially WhatsApp groups, Facebook groups and Telegram groups for Egyptian psychiatrists. Participants in the study were informed about the research objectives and outcomes; a total of 281 psychiatrists participating in this evaluation responded and completed the questionnaire. The questionnaire used in the research consisted of three parts; the first part assessed demographic variables including age, gender, work experience (years), place of work in Egypt (general hospitals, psychiatric hospitals, private hospitals and private clinics).

The second part assessed psychological distress and burnout using the Maslach Burnout Inventory (Human Services Survey; MBI-HSS), considered the gold

standard for evaluating burnout. Emotional exhaustion is considered at a score greater than 27, and/or a score greater than 10 is considered a high level of depersonalization (Maslach, Jackson, Leiter, 1996). The third part of our questionnaire assessed the knowledge and attitude of psychiatrists regarding COVID-19; started the assessment of knowledge by answering 8 questions with (Yes or No) that covered the nature of the disease, aetiology, transmission, risk groups, symptoms, testing, treatment and precautions/preventions. The knowledge scores ranged from 0-8 and poor knowledge was set at a cut off level <6 and ≥ 6 for good knowledge. The attitude was assessed using 5 Likert-item follows according to points: strongly agree (1-point), agree (2-point), Undecided (3-point), disagree (4-point), and strongly disagree (5-point). A positive attitude set at scores ≤ 2 and 3-5 was taken as a negative attitude.

Ethics

The study was performed in conformity with the declaration of Helsinki.

Statistical analysis

The data were expressed as mean and standard deviation (SD). The Mann-Whitney test and student's t-test were used to compare continuous variables, and the chi-square test was used to compare categorical variables. A binary logistic regression analysis was applied, and a P value of less than 0.05 was considered significant in all tests.

Results

Demographic data

Table 1. Sociodemographic data

		Number (281)	Percent
Sex	Male	99	35.2
	female	182	64.76
Age in year	30<	66	23.4
	30-40	127	45.19
	41-50	63	22.41
	51<	25	8.89
Place of work	General hospital	82	29.18
	Governmental psychiatric hospital	165	58.71
	Private psychiatric hospital	34	12.09
Years of experience	3>	54	19.2
	3-10	132	46.97
	11-20	61	21.7
	21<	34	12.09
source of information	Social media	228	81.13
	Egyptian ministry site and media	68	24.19
	International health organization as WHO	239	85.05
	News media	127	45.19
	journal	155	55.16
	Others	60	21.36

A total of 281 questionnaires were collected, as shown in Table 1; The mean age of participants was 36.74 ± 8.17 years, and the main age group was between 30-40 years (45.19%). There were more females (64.76%) than males, with mean years of experience (13.65 ± 3.42). International health organizations as WHO reports (85.05%, $n=239$) were the main source of information followed by social media (81.13%, $n=228$) and medical journals (55.16%, $n=155$). Lastly, 24.19% obtained their relevant knowledge from the Egyptian ministry of health site and media. The main number of psychiatrists who worked in governmental psychiatric hospitals was 58.71% then psychiatrists work in general hospitals was 29.18% (**Table 1**)

Burnout

Table 2
Prevalence of burnout among participants ($n = 121$)

Variables	Frequency ($n = 281$)	Percent (%)
Yes	87	31.07
No	194	69.03
Burnout subscales ($n = 281$)		
High emotional exhaustion	76	27.04
High depersonalization	26	9.25
Low personal accomplishment	72	25.60

As shown in **table (2)**, The frequency of burnout was about 31.07%, 9.25% of the psychiatrist met high depersonalization criteria, 25.6% demonstrated low personal accomplishment and the highest subscale was emotional exhaustion 27.04%.

Table 3
Relationship between socio-demographic/educational factors and burnout

	Description	N	BURN OUT scale		P value
			YES	NO	
Age*	<30	95	9.63 ± 1.39	1.98 ± 0.89	0.087
	30-39	114	9.39 ± 1.63	1.73 ± 0.53	
	40-49	50	10.07 ± 1.05	1.61 ± 0.41	
	>50	22	9.0 ± 1.73	1.32 ± 0.32	
Gender**	Male	99	10.19 ± 1.27	1.70 ± 0.88	0.005
	Female	182	9.85 ± 1.16	1.93 ± 0.36	
PLACE OF WORK*	General hospital	82	9.82 ± 1.74	1.87 ± 0.73	0.02
	Governmental psychiatric hospital	165	9.12 ± 1.65	1.72 ± 0.77	
	Private psychiatric hospital	34	9.31 ± 2.17	1.72 ± 0.38	
Experience*	<3	74	9.02 ± 1.16	2.23 ± 0.74	0.001
	3-6	36	9.47 ± 1.63	1.77 ± 0.78	
	6-9	105	9.24 ± 1.14	1.87 ± 0.77	

	≥10	95	9.91±1.57	1.71±0.39	
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Table 3. shows that burnout was significantly lower in female psychiatrists than in males (9.95±1.16 vs. 10.09 ±; $P < 0.005$), also Psychiatrists from general hospitals had a significantly high frequency of burnout than those who work in governmental or private hospitals ($P < 0.05$). Burnout has a significant relationship with years of experience, as the frequency of burnout in a group with 10 years or more of experience was the highest group affected with burnout (9.9±1.57; $P < 0.001$).

Table 4
Knowledge among psychiatrists towards COVID-19

Knowledge of COVID -19	Correct answer N (%)	Incorrect answer N (%)
1-Is the Coronavirus transmitted through close contact?	227 (80.78)	54 (19.21)
2-Do you have the necessary knowledge of the symptoms of a person with suspected Coronavirus (cough, fever, chills, shortness of breath, and extreme fatigue)?	267 (95.01)	14 (4.98)
3-People with co-morbidity (Diabetes, cancer and other chronic diseases) are more likely to be infected	229 (81.49)	52 (18.5)
4-Incubation time for virus is 14-28 days	235 (83.6)	46 (16.37)
5-people with severe symptoms the only one who can transmit the disease to others?	212 (75)	69 (24..5)
6-Polymerase Chain Reaction (PCR) can used to diagnose COVID 19	225 (80.07)	56 (19.93)
7-Antibiotics are first line treatment	140 (49.8)	141 (50.2)
8-Vaccination of Corona virus is available in market	229 (81.4)	52 (18.6)

Table (4) represents the answers obtained for knowledge items that showed, overall, 80.07% (n = 225) of participants had sufficient knowledge; regarding 8 knowledge items, mixed responses were obtained. Most of the psychiatrists (95.01%) answered question number (2) correctly about COVID-19 symptoms, about 83.6% were aware of the incubation period of the disease, 81.49% correctly identified high risk people, 81.4.92% were aware of the availability of the vaccine,

80.78%, and 80.07% responded true respectively about COVID-19 test and route of transmission, lastly (50.2%) can't identify the role of antibiotics in treatment.

Attitude towards COVID-19

Table 5
Psychiatrists' attitude toward Coronavirus

Items	Participants' responses* N (%)					p-value**			
	SA	A	U	D	SD	Prof1	Gender	Age	Experience
gowns, gloves must be used when dealing with infected patients	159 (56.58)	81 (28.8)	32 (11.38)	10 (3.5)	0 (0)	0.003	0.001	0.012	0.321
transmission of COVID-19 could be prevented by following universal precautions given by WHO	107 (38.07)	56 (19.9)	23 (8.18)	66 (23.4)	29 (10.3)	0.001	0.002	0.044	0.022
healthcare workers must acknowledge themselves with all the information regarding COVID-19	147 (52.3)	78 (30.96)	13 (4.6)	31 (11.03)	12 (4.27)	0.004	0.001	0.325	0.062
Intensive and emergency treatment should be given to diagnosed patients	163 (41.2)	63 (41.2)	6 (3.9)	32 (7.8)	17 (4.2)	0.022	0.001	0.003	0.356
any related information should be disseminated among healthcare workers	99 (43.1)	72 (47.1)	19 (5.9)	62 (0)	29 (3.9)	0.302	0.001	0.001	0.085
HCPs strongly agreed that prevalence of infection could be controlled by actively involving in infection control programs.	84 (49)	89 (45.1)	33 (2)	50 (0)	26 (3.9)	0.174	0.002	0.232	0.232

- Profession.
- *SA = Strongly agree, A = Agree, U = Undecided, D = Disagree, SD = Strongly disagree.
- **derived from Chi-square test.
- Note: Attitude was assessed by giving 1 to SA, 2 to A, 3 to U, 4 to D, 5 to SD. Score of < 2 were taken as positive attitude while ≥ 2 as negative attitudes. Mean attitude score was 1.82 ± 0.72 .

- MeanAttitudeScore $\pm$ SD: ^a1.94 $\pm$ 0.80, ^b2.03 $\pm$ 0.97, ^c1.92 $\pm$ 1.08, ^d1.96 $\pm$ 1.13, ^e1.74 $\pm$ 0.88, ^f1.64 $\pm$ 0.85, ^g1.52 $\pm$ 0.84.

As shown in **(Table 5)**, 75% (n = 212) of participants had a positive attitude, and about 56.58% (n=159) individuals strongly agreed that gowns and gloves must be used when dealing with infected patients, while 3.5% (n 10) disagree. On the other hand, 38 % of participants strongly agreed that transmission of COVID-19 could be prevented by following universal precautions given by WHO, while 10.3% (n=29) strongly disagreed and that healthcare workers must acknowledge themselves with all the information regarding COVID-19. Similarly, 41.2% (n=163) of psychiatrists had a positive attitude regarding intensive and emergency treatment that should be given to diagnosed patients, and 43.1% (n=99) of participants strongly agreed that “any related information should be disseminated among healthcare workers”. On the other hand, 49% (n=84) of psychiatrists strongly agreed that prevalence of infection could be controlled by actively involving in infection control programs.

Table 6
Correlation of psychiatrist's knowledge and attitude about Coronavirus and demographic data

	Description	N	Knowledge score (Mean $\pm$ SD)	P value	Attitude score (Mean $\pm$ SD)	P value
Age*	<30	95	9.63 $\pm$ 1.39	0.445	1.98 $\pm$ 0.89	0.087
	30-39	114	9.39 $\pm$ 1.63		1.73 $\pm$ 0.53	
	40-49	50	10.07 $\pm$ 1.05		1.61 $\pm$ 0.41	
	>50	22	9.0 $\pm$ 1.73		1.32 $\pm$ 0.32	
Gender**	Male	99	10.09 $\pm$ 1.27	0.332	1.70 $\pm$ 0.88	0.005
	Female	182	9.95 $\pm$ 1.16		1.93 $\pm$ 0.36	
PLACE OF WORK*	General hospitals	82	9.82 $\pm$ 1.74	0.533	1.87 $\pm$ 0.73	0.02
	Governmental psychiatric hospitals	165	9.12 $\pm$ 1.65		1.72 $\pm$ 0.77	
	Private psychiatric hospitals	34	9.31 $\pm$ 2.17		1.72 $\pm$ 0.38	
Experience*	<3	74	9.02 $\pm$ 1.16	0.013	2.23 $\pm$ 0.74	0.001
	3-6	36	9.47 $\pm$ 1.63		1.77 $\pm$ 0.78	
	6-9	105	9.24 $\pm$ 1.14		1.87 $\pm$ 0.77	
	$\geq$ 10	95	9.91 $\pm$ 1.57		1.71 $\pm$ 0.39	

Table 6 shows the association of demographic data of participants and mean scores of their knowledge and attitude with no significant difference between the demographic variables of the participant and the mean score of knowledge, while the mean score of attitude was significantly associated with gender, place of work and experience, as male participants expressed more knowledge (10.09 vs 9.95, P = 0.332 and positive attitude (1.70 vs 1.93, P = 0.005) towards COVID-19 as compared to female, also revealed that senior experienced psychiatrist has more

knowledge (9.91 ± 1.57 , $P = 0.013$) and more positive attitude (1.71 ± 0.39 , $P = 0.001$) with significant difference than who are relatively new in the field.

Discussion

This study was conducted during the peak of the spread of the COVID-19 in Egypt from 1 April to 31 April 2020 and showed that about 31.07% of the psychiatrist who participated in the study were suffering from burnout. Our result confirmed that burnout, depression and anxiety are serious problems facing medical professionals staff, especially who experienced COVID-19 outbreak with physical and emotional exhaustion that may be due to a lot of factors shown in our study, including overburdened, rapid change in medical information and procedures, perception of danger to themselves, major lifestyle changes in addition to factors identified as psychological distress affecting healthcare workers in previous studies (Woodside et al., 2008). Also, in previous pandemics, work stress increased on psychiatrists as the spread of the virus was news associated with increasing and exacerbating some mental disorders, especially anxiety, sleep and depression. These symptoms increase with quarantine (Austria-Corrales et al., 2011). Also, seeking for psychiatric consultation that may be officially or in friendly way from a psychiatrist's relative, friends and colleagues may add more stressors and work overload (Chan, Chew, Sim, 2019) and this load increases during epidemics that may contribute to the occurrence of burnout. All these factors are reported and confirmed in our study.

Burnout in our participants seems to be higher than the results of Alkhamees et al. study in Saudi Arabia who reported the prevalence of burnout in Saudi psychiatric trainees during COVID-19 outbreak was 27 % (Alkhamees et al., 2021). Also, our study compared the burnout frequency of psychiatrists working in general hospitals versus psychiatrists in governmental and private hospitals and clinics. To our knowledge, we didn't find previous studies discussing this difference that has an important role in evaluating work pressure between the three health sectors, despite the job title is the same. In our survey, we observed that psychiatrists from general hospitals had a significantly high frequency of burnout during COVID-19 outbreak in Egypt and also were more worried about becoming infected; also, some departments which have patients with COVID-19 may ask for psychiatric consultation make them more susceptible to infection. Also, due to increased patient numbers and a shortage in infectious disease medical staff, the ministry of health in Egypt has overcome this deficiency by physicians from other specialities, including psychiatrists to help tackle this pandemic.

Our study also revealed that psychiatrists working in a general hospital may have noticed less control over new policies and procedures enacted to save patients and staff. Unlike facing COVID-19 head-on, these workers may think that their workplace can be infected by the virus at any time, leading to increased stress when confronted with infected patients, which can precipitate more burnout. The frequency of burnout in this study was significantly lower in female psychiatrists than in males (9.95 ± 1.16 vs. $10.09 \pm$; $P < 0.005$), which the emotional nature of female psychiatrists may explain may have more dedication and empathy with patients, which differ from other studies like Alkhamees et al. 2020 study and Chan

et al. 2019 study who reported non-significant difference to the impact of gender on the prevalence of burnout (Alkhamees et al., 2021; Chan et al., 2019).

Burnout has a significant relationship with years of experience as the frequency of burnout in a group with 10 years or more of experience was the highest group was affected with burnout (9.9 ± 1.57 ; $P < 0.001$), which is inconsistent with the finding of Alkhamees et al. 2020 study who found higher burnout in residency years 1 and 2 and decreased with more experience in higher years (3 and 4 residencies) (Alkhamees et al., 2021). Overall, 80.07% ($n = 225$) of participants in this study had sufficient knowledge, which is consistent with (Mahato and Suryavanshi, 2020) study who found overall knowledge of participants was 79.42%, and also knowledge in our participants was higher than (Elhashimi, Fajr. et al., 2021) study on Sudanese mental health workers that was 70.8% (Mahato and Suryavanshi, 2020) (Elhashimi, Fajr. et al., 2021). The age of participants was associated with good knowledge as 95.5% ($n=284$) with a significant difference as the psychiatrist group (age < 30 years) had good knowledge more than other age groups. The knowledge among psychiatrists in general hospitals was (93.3%, $n=112$), psychiatrists in psychiatric hospitals (94.7%, $n=179$), and psychiatrists in private psychiatric hospitals (90.5%, $n=95$) with an insignificant difference ($P=0.383$).

75% ($n = 212$) of participants in this study had a positive attitude, which is higher than the result reported by Elhashimi, Fajr. et al. 2021 study that was (57.3%, $N=51$). In our study, no significant factor was associated with knowledge, while gender, place of work and years of experience were significantly associated with positive attitude. The positive attitude was highest among Psychiatrists in general hospitals (8.41), followed by psychiatric in the private psychiatric hospitals (8.43) and psychiatrists in the governmental psychiatric hospitals (8.64) but without significant association ($P=0.358$), and mean of age and years of experience show no significant ($P>0.05$).

Conclusion and Recommendations

Our findings conclude that burnout related to COVID-19 among Egyptian psychiatrists was high that related to factors of increased work pressure that indicate a great need to improve the work environment and put a plan to decrease the prevalence of burnout. Also, findings revealed that Egyptian psychiatrists have a good practice regarding COVID-19 associated with good knowledge and a positive attitude. Psychiatrists used less trusted scientific sources, which affected their attitude and knowledge negatively, also demonstrated a shortage of infection control training programmes and preventive measures and material, the correlation between knowledge and attitude was positive; also, the majority of psychiatrists perceived that overcrowding of outpatients in the general hospital and general psychiatric hospital, limited material of infection control and lack of training are the major defects in the practice of infection control, so there are need to more infection control programmes training to improve their knowledge and attitude which will be reflected to improve practice. The limitation of this study is lack of generalization as it is limited to a psychiatrist only with no comparison groups from other specialities. It is also limited to psychiatrists from one country and one

culture. It is important to increase the sample size to include other specialties and different cultures.

Data Availability Statement

The authors will make the raw data supporting this article available without undue reservation. The authors will provide the preliminary data for this article without reservation.

Ethics Statement

The studies involving human participants were reviewed and approved by The Ethics Committee of AL-Azhar University. EC/AU/2019-19/434 The participants provided their written informed consent to participate in this study.

Author Contributions

All authors participated in study design, data collection, data analysis, and manuscript writing. Also, all authors contributed to the article and approved the submitted version.

Conflict of Interest

The authors declare that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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