

# Do Pandemics Still Cause Mental Health Problems and Social Stigma? The case of COVID-19 in Egypt

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## ABSTRACT

**Background:** Globally, COVID-19 has caused panic, fear, depression, and anxiety, especially in the absence of knowledge regarding the causes and complications of the disease, along with its high rates of morbidity and mortality. This bundle of negative emotions may trigger acts of prejudice, discrimination, negative social behaviors, and stigmatization.

**Aim:** To examine general mental health and its impact on the social stigma associated with COVID-19 among general population in Egypt.

**Methodology:** The study was conducted using an online cross-sectional survey. A 'snowball' sampling was used to recruit 501 participants. This study utilized three tools, including Socio-demographic Data Sheet, General Health Questionnaire, and COVID-19 related Social Stigma Scale.

**Results:** The study confirms a highly statistically significant direct relationship between mental health problems and social stigma: specifically, mental health significantly impacted social stigma toward COVID-19. Besides, there is a highly statistically significant inverse relationship between social stigma and educational level. However, unlike other research studies, this study shows that social stigma associated with the COVID-19 health crisis seems entirely uncommon in Egypt.

**Conclusion:** Overall, the study subjects reported having no mental health problems during COVID-19 and have no stigma towards COVID-19. Except for the timing of data collection, these unexpected findings might be explained by the fact that most of the studied sample (59.1%) reported having a close family member infected by COVID-19.

**Keywords:** COVID-19, Mental health, Social stigma, General population.

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## INTRODUCTION

Throughout history, mankind has been subjected to many devastating pandemics and epidemics, with the last one (COVID-19) taking place at the end of 2019 until now. The COVID-19 pandemic represents a recent unprecedented shock to the fabric of humanity that may have a profound and lasting impact on our general mental health and well-being<sup>1</sup>.

The rising threat of the COVID-19 pandemic led to a universal atmosphere of anxiety, insecurity, and depression; this was attributed to several reasons such as disrupted travel plans, social isolation, excessive inaccurate media information, panic buying of essential goods<sup>2</sup>. Furthermore, when the causes or progression of the disease and outcomes are blurred, a "parallel epidemic" of panic, worry, and depression arise<sup>3,4</sup>. It is well known that COVID-19 poses a significant challenge to mental health worldwide; for instance, WHO stated that "the main psychological impact to date is elevated rates of stress or anxiety"<sup>5</sup>.

In addition to many scientific studies that addressed the impact of past pandemics on mental health, recently published papers have examined the impact of COVID-19 on mental health. For instance, a Chinese study conducted on 1210 participants from 194 cities at the beginning of 2020 found that 54% of participants rated the emotional consequences of the COVID-19 outbreak as moderate or severe; 29% suffered from moderate to severe anxiety

symptoms and 17% had moderate to severe depressive symptoms<sup>6</sup>. In the United States., the coronavirus poll in March 2020 showed that about 32% of adults expressed that anxiety and stress related to COVID-19 had a negative impact on their mental health; of those, 14% of them reported a "major" impact<sup>7</sup>.

Furthermore, 1738 participants from 190 Chinese cities surveyed in a longitudinal study (1210 first-survey participants, 861- second survey participants; 333 participants took part in both) showed no difference in depression, anxiety, and stress when there were numerous new cases compared to the time of various recovering cases [8]. This is surprising, because it is known from the previous SARS-CoV-1 outbreak that those in the general population, who were affected by SARS (e.g. by quarantine) had psychological symptoms for months after controlling the epidemic, and this could mean that long-lasting psychological symptoms after COVID 19 also should be predicted<sup>9</sup>.

In the light of the above, emotional and mental disturbances such as anxiety, depression, fear of the pandemics and infection-related mental distress may trigger and worsen negative social behaviors and social stigma<sup>10</sup>. Stigma is defined as "a social phenomenon which is characterized by labeling and stereotyping people with certain characteristics, leading to loss of status and discrimination"<sup>11</sup>. The stigma associated with infectious diseases is the concept that portrays the negative attitudes

and behaviors of individuals towards others who live with highly transmittable diseases<sup>12</sup>.

According to several cross-sectional studies, stigma can be encountered by individuals affected by particular types of extremely infectious diseases. The major source of stigma is members of the society as neighbors, friends, and acquaintances who can reject and avoid those persons. Besides, stigma is a complex concept to analyze because it involves personal attitudes and beliefs, disclosure issues, as well as influences from the social environment<sup>13,14</sup>.

Fischer and colleagues<sup>15</sup> stated that societies have a long history of discriminating, stereotyping, and excluding people with specific attributes or traits that are considered damaging or intimidating to others. The perception that an individual may be infected with any contagious disease such as HIV, Ebola, SARS, and currently COVID-19 or just exposed to it can be labeling and stigmatizing.

For instance, the Ebola outbreak in 2014 was considered an African issue that resulted in violence against those of African race<sup>16</sup>. While Mexican and migrant workers were targeted and discriminated against during the 2009 H1N1 flu epidemic in the U.S<sup>17</sup>. In the past several decades, a variety of serious outbreaks of influenza have appeared in Southeast Asia including Avian H7N9 Influenza in 2013; H2N2 Pandemic in 1957-1958; H1N1 Pandemic in 1918<sup>18</sup>.

As well, people from Wuhan were blamed for the COVID-19 outbreak by other Chinese people. Moreover, Chinese people have since been stigmatized globally; the terms 'China virus', 'Wuhan virus', and the 'New Yellow Peril' were frequently used by the media<sup>3</sup>. Since January 2020, The UK and the USA have reported increased rates of violence and hate crimes towards Asian people<sup>19</sup> with an overall rise in Anti-Chinese feeling<sup>20</sup>.

Mental health, social stigma and psychiatric care for the general population during pandemic outbreaks remain incomprehensible and poorly studied by existing research and literature. So, it is important to measure the prevalence of mental health problems and their impact on fueling harmful stereotypes and stigmatization during the COVID-19 outbreak. Detecting the prevalence of mental health problems and stigma during the pandemic would be a foundation for developing intervention programs. SO, the aim of the current study is to examine general mental health and its impact on the social stigma associated with COVID-19 among the general population in Egypt.

### Research Questions

1. What is the prevalence of social stigma associated with COVID-19?
2. What are the levels of general mental health problems associated with COVID-19 among the general population?
3. What is the impact of general mental health problems on social stigma toward COVID-19?
4. Is there a relationship between the general mental health and social stigma toward COVID-19?

## MATERIALS AND METHODS

The study was conducted using a cross-sectional survey. Data were collected online using the Google Forms Platform because of required restrictions in physical contacts during the COVID-19 outbreak. The study was conducted in Egypt. It is the densest population in the Arab

region. According to the latest population census in 2020, the population is about 100 millions<sup>21</sup>. A "snowball" sampling method was used to recruit 501 participants according to the following criteria (1) Egyptian population; (2) aged 18 years or older; (3) can read and write; (4) have internet access. A digital version of the sociodemographic data sheet plus a COVID-19 related stigma scale and a general health questionnaire was sent to 40 people known to the study authors (including families, friends, and other acquaintances), who previously agreed to participate in the study and to share the digital questionnaires through their social media.

An invitation with the link to the tool was disseminated to the potential participants via social networking sites, like Facebook and WhatsApp. No personal identifying information was collected. The participant's Google account password was required to prevent a person from re-entering the survey site.

The sample size was determined upon a 5% margin of error, 95% confidence level, and 2% precision range. As no similar studies were discussing the social stigma and the mental health associated with COVID-19 in Egypt, the calculations were based on the assumption that the probability of being stigmatized with negative feelings, opinions, and attitudes towards patients with COVID-19 was 50.0%: this was to ensure calculating the most significant sample.

**Tools for data collection:** Data were collected for three months, from the beginning of July 2020 until the end of September 2020. The researchers used the following tools:

### 1. Sociodemographic Data Sheet: The sociodemographic data was collected on two levels:

(a) General sociodemographic data including age, gender, marital status, educational level, occupation, years of experience, governorate, place of residence (urban /rural), and income.

(b) Demographic data related to COVID-19: Four questions were used: (1) I knew that someone not close to me was infected by COVID-19; (2) Was there any close family member infected by COVID-19? (3) Have you heard about someone from your residential area infected with COVID-19? (4) If the answer to question (3) is yes: Was the area isolated?

**2. General Health Questionnaire (GHQ):** GHQ was developed by Goldberg & Williams (1988) to measure psychiatric wellbeing. It uses a 4-point Likert-type scale (from 0 to 3) and consists of 12 items that assess the severity of mental problems over the past few weeks. The score was used to generate a total score ranging from 0 to 36. The positive items were corrected from 0 (always) to 3 (never) and the negative ones from 3 (always) to 0 (never). Higher scores indicate worse health conditions [22].

**3. COVID-19 related Social Stigma Scale:** The scale was designed to measure the social stigma related to COVID-19, as experienced by general population in Egypt. The developed scale yielded 26 sentences divided into four subscales. The tool's initial draft was designed in Arabic and included four subscales; the first and second were constructed of 5 sentences, the third of 9 sentences, and the fourth of 7 sentences. The titles were as follows: First subscale: "Fear of Disclosure"; the second "Negative

feelings related to the COVID-19”; the third “Public opinions towards patients with COVID-19” and the fourth “Public attitudes towards patients with COVID-19.”

The initial form of the scale was developed stemming from the results of focus group discussions and from the review of literature that included several studies discussing the stigma of infectious diseases such as SARS, AIDS, TB, and Hepatitis C<sup>23-26</sup>. Broadcast news regarding the public response and behaviors of the general population towards those infected with COVID-19 during its outbreaks were also used to build a theoretical background that supported the phrasing and organization of the tool's initial form. The tool ended up containing 26 sentences. The respondent's agreement level was assessed using seven-point Likert-type response alternatives (disagree entirely, disagree to some extent, disagree, neutral, agree, agree to some extent, and completely agree).

Afterwards, the validity of the initial draft of the tool was evaluated through a panel of five experts, who concluded that the tool was relevant and could correctly measure COVID-19 related social stigma (fear of disclosure, negative feelings, opinions, and attitudes) and had an acceptable degree of face validity.

Then, to test the reliability and construct validity of the tool's initial form, a pilot study was conducted with a sample of 50 adults from the general population, excluded from the research sample. The scale showed poor reliability (Cronbach's  $\alpha = 0.6$ ). Further, the internal consistency between each sentence score and the corresponding subscale's total score was tested. Two sentences in the first subscale showed a weak correlation with the total subscale score. Also, in both the third and the fourth subscale, one sentence was found to have an insignificant correlation, and two sentences had a weak correlation. After deleting the weakly correlated sentences from each subscale, the scale showed acceptable reliability (Cronbach's  $\alpha = 0.824$ ). The tool sentences' internal consistency and corresponding subscale became better since the correlation coefficients ranged from 0.65 to 0.8. Consequently, an amended and short version of the tool became ready for administration to the study sample. The final version of the scale at the end consisted of 18 items. The results were analyzed in terms of the subscales scores in addition to those of the whole scale. The subscale scores were calculated by summing the scores of each subscale's items, while the overall social stigma scores were calculated by summing the scores of whole 18 items.

**Statistical design:** Statistics were analyzed using the Statistical Package for the Social Sciences (SPSS), version 21. Frequency and percentage were used for numerical data and mean and standard deviation. For parametric analysis, t-test and ANOVA (analysis of variance) were used. The Pearson correlation test was used to test the internal consistency of the COVID-19 related Social Stigma Scale and determine the correlation between social stigma and both sociodemographic characteristics and mental health.

**Ethical Consideration:** Official permission from the research ethics committee in the Faculty of Nursing-Cairo University was obtained regarding the research tools and study. Before taking part in the survey, participants were asked to provide anonymously informed consent in electronic format. The informed consent included the

study's aim, voluntariness, and treatment of the answers by confidentiality and by keeping the responses anonymous.

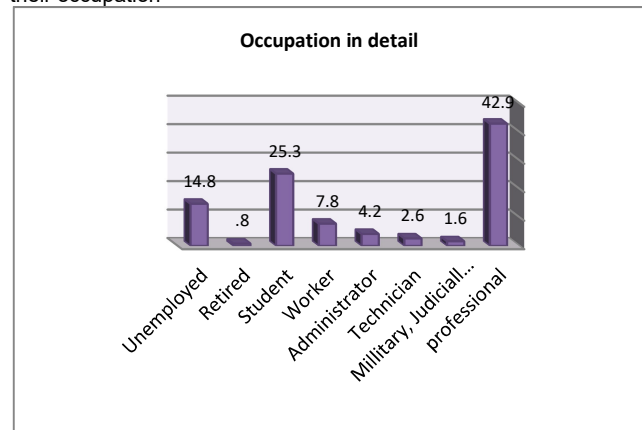
**RESULTS**

About 42.9% of the studied sample had a professional occupation (Figure 1). 25.3% of the sample were students, 14.8% were unemployed, and 7.8% were workers. The majority of the sample (69.3%) was university graduates, 15% was a high school graduate, 12% postgraduate, and 0.6% could read and write (Figure 2).

Table 1: Sociodemographic Data Profile (Age, sex, marital status, monthly income, and place of residence) (n=501)

Item	n%
<b>Age (years)</b>	
18 - <30	299(59.7)
30 - <40	112(22.4)
40 - <50	58(11.6)
50 -< 59	24(4.8)
60-<69	6(1.2)
70- 80	2(0.4)
<b>Gender</b>	
Male	217(43.3)
Female	284(56.7)
<b>Marital status</b>	
Married	215(42.9)
Single	262(52.3%)
Divorced	16(3.2)
Widow	8(1.6)
<b>Mean monthly income</b>	
Less than average	120(24)
Average	310(61.9)
Above average	71(14.2)
<b>Place of residence</b>	
Urban	347 (69.3)
Rural	154 (30.7)

Figure 1: Frequency distribution of the studied sample according to their occupation



As Table 2 reveals, most of the participants in the studied sample (82.6%) know someone infected by the virus, but have no close relationship with this person. On the other hand, the majority of the sample (59.1%) reported having a close family member infected by COVID-19. Also, most of the participants (79.8%) heard about someone from their residential area infected with COVID-19. Despite the spread of the virus in one way or another, most of the studied sample (75 %) declared that no isolation measures of the infected area were in place, at the time of the survey.

**Research Question (1):** Most participants (85.5%) reported not having stigma toward COVID-19 with (M= 2.64221, SD= 0.799), as table 3 show.

**Research Questions (2):** As per the second research hypothesis, most of the studied sample shows no problems regarding mental health during COVID-19, as (M= 14.32, SD=5.792), as it is shown in Table 4.

**Research Question (3):** It is to be highlighted that mental health significantly impacted social stigma toward COVID-19 in the studied sample, where  $b = 0.323$ ,  $p = 0.000$  (Table 5). Mental health problems also explained a significant proportion of variance in social stigma ( $R^2 = 0.104$ ,  $F = 58.07$ ).

**Research Question (4):** There was a highly statistically significant direct relationship between mental health problems and social stigma ( $r = 0.323$ ,  $p = 0.000$ ), as shown in Table 6. There was also a highly statistically significant direct relationship between mental health problems and subscales of stigma, such as fear of disclosure, negative feelings, public opinion, and public attitude. Notably, Table 7 shows a highly statistically significant inverse relationship between social stigma and education level ( $r = -0.217$ , &  $0.000$ ). Conversely, no statistically significant relationship

was found between social stigma and the studied sample's sociodemographic data, such as age and monthly income.

Figure 2: Frequency distribution of the studied sample according to level of education

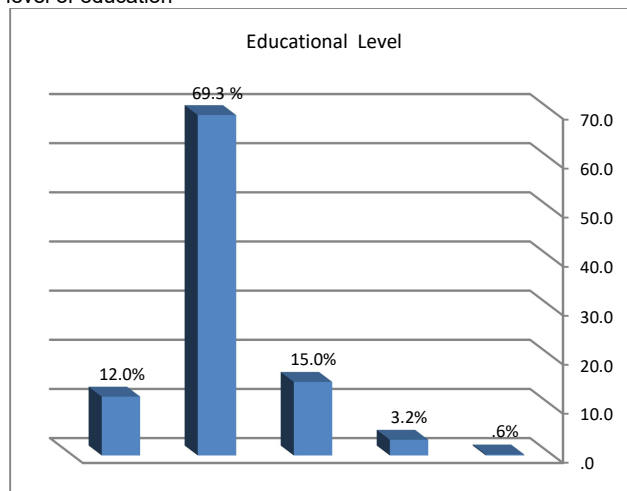


Table 2: Demographic data related to COVID-19

Questions	Yes%	No%
I know that COVID-19 infected someone not close to me	414(82.6)	87(17.4)
Did COVID-19 infect any close family member?	269(59.1)	205(40.9)
Have you heard about someone from your residential area infected with COVID-19	400(79.8)	101(20.2)
If the answer of the question (3) is yes, was the area isolated	125(25.0)	376(75.0)

Table 3: Percentage of social stigma among participants

Stigma scale	% of participants' agreement (presence of stigma)	Neutral	% of participants disagreement (absence of stigma)	M±SD
Fear of disclosure	19	19.8	61.4	3.213± 1.3815
Negative feelings	10	19.6	70.2	2.87± 1.253
Public opinions	4	6.8	92.4	2.22± 0.87
Public attitude	10	5.0	93.0	2.25± 0.904
Overall stigma	13	11.6	85.8	2.64221± 0.799

Table 4: Frequency distribution of mental health problems during COVID-19 (n=501).

Levels of Mental Health Problems	N%	M±SD
Normal	445(88)	14.32± 5.792
Mild	55(11)	
Moderate	1(0.2)	
Severe	0	

Table 5: The impact of mental health on social stigma toward COVID-19 (n=501).

Variables	Social Stigma	Mental health problem
R <sup>2</sup>	0.104	
Adjusted R <sup>2</sup>	0.102	
F	58.07	
B	2.004	.045
β	0.323	
t	22.199	7.62
Sig	0.000***	

\*\*\*p<0.001highly significant

Table 6: Correlation between mental health problems and social stigma toward COVID-19.

Mental Health Problems	Overall social stigma	Subscales of Social Stigma			
		Fear of disclosure	Negative feelings	Public Opinions	Public attitude
r	.323	.091	.402	.222	.230**
P	.000	.042*	.000	.000	.000

\*\*p<0.01 highly significant, \*p<0.05 Significant

Table 7: Correlation between Sociodemographic data (Age, Level of Education, Income and Social Stigma)

Variables	Social stigma	
	r	p
Age	-.003	0.949
Educational Level	-.217	0.000**
Monthly Income	-.062	.166

\*\*p<0.01 highly significant

## DISCUSSION

COVID-19 is a worldwide public health disaster that imposed different challenges in different places of the world. One of these challenges is the general mental health consequences and the social stigma associated with COVID-19.

The current research results revealed that most of the sample had no stigma toward COVID-19 and were not afraid of disclosure about having COVID-19. More than half of the sample did not have negative feelings toward being infected with COVID-19 or toward patients with COVID-19. Overall, the majority of the sample had no negative opinions or behavior toward COVID-19 patients. These unexpected results contradicted many studies that addressed social stigma toward infectious diseases<sup>3,16,17,27</sup>.

These results may be attributed to many factors. First, the timing of data collection, since the data was collected between July and October 2020. This period is considered a period of virus retreat in Egypt, and there is a steady decrease in cases, according to the official reports announced by the Ministry of Health in Egypt. In support of this rationale, Sotgiu and Dobler<sup>28</sup> explained that social stigma during the early days of pandemics is intensified by insufficient knowledge, contradictory information about the newly emerging virus, and a high level of anxiety and fear. The authors highlighted the role of clear and accurate information in counteracting the misconception that underlies stigma.

Second, our result findings indicated that most of the studied sample (59.1%) pointed out that COVID-19 infected a family member. Consequently, they switched from being people accused of stigmatization to being stigmatized besides changing their opinions and behaviors due to their family members' affection by COVID-19. Furthermore, this attribution is consistent with Ramaci and colleagues<sup>29</sup>, who stated that 'Familiarity' (knowing a close friend or relative infected by COVID-19) is well proven as a factor that impedes social stigma, reduces levels of anxiety and fear, reduces the desire to social distance and increases empathy and positive attitudes.

Third, the sample's sociodemographic characteristics, such as educational level and occupation, may also act as attributes for the absence of stigma. The majority of the sample (69.3%) was university graduates, and about 42.9% had a professional occupation. A highly statistically significant inverse relationship between social stigma and education level was found by Li and colleagues<sup>30</sup>. They studied stigma toward HIV patients in China and found a negative relationship between education levels and stigma attitude towards patients of HIV. An additional study showed consistent findings that stigma was more prevalent among people with low educational levels<sup>31</sup>. Furthermore, the less educated people experienced a more significant impact from the social media in order to understand the COVID-19 health information<sup>32</sup> which makes them risky for an overload of news, mixing facts, rumors, and false information<sup>28</sup>.

The finding of the current study demonstrated that the sample reported no mental health problems due to the COVID-19 outbreak. Such results differ from those of a Chinese study conducted by Gao and colleagues<sup>33</sup>, which showed that most participants suffered from mental health problems during the COVID-19 crisis. Many other studies have addressed the psychological impact of COVID-19 and found a high prevalence of psychological problems<sup>34-37</sup>.

The contradiction in our findings may also be attributed to the timing of data collection, the psychological readiness of being infected with COVID-19 at any time, and the religious beliefs in the Egyptian culture (highlighting the value of acceptance of challenges and satisfaction and trust in the support of God). Nevertheless, Vigo et al<sup>1</sup> pointed to the negative side of not being mentally distressed because of such a dangerous pandemic. They warned that the unrealistic confidence about one's ability to avoid infection or recover without serious consequences could lead to ignorance of distancing and disregard of precautionary measures.

A highly statistically significant direct relationship was found between mental health problems and stigma, indicating that mental health significantly impacted social stigma toward COVID-19 in the studied sample. According to Nursalam, Sukartini, Priyantini, Mafula, and Efendi<sup>38</sup>, social stigma in society is mainly attributed to rejection and fear of being infected by COVID-19. Hence, people refuse to deal with patients who return to their region after recovery; they reject the patient's family, and reject health workers or individuals who fall into the positive, suspicious categories. Consequently, if the factor of fear and anxiety is not available, the social stigma will be at its lowest levels.

**Limitation of the Study:** Different results might come out from a sampling that excludes subjects with a direct experience of COVID-19. Moreover, a different balance in the sample between highly educated and non-educated people, or between medium-high income and low incomes, might result in completely different findings. Also, a different timing, maybe during another outbreak/wave of the virus diffusion, might also result in a different outcome. Therefore, this study has limitations related to the snowball-sampling and the moment in which participants were asked to respond

## CONCLUSION

COVID-19 outbreak has no impact on the mental health of the general population in Egypt. Unexpectedly, the social stigma associated with the coronavirus health crisis is uncommon. Furthermore, mental health is considered an influential factor that impacted social stigma. The study documented the salutary effects of educational level in buffering the social stigma associated with the COVID-19.

## RECOMMENDATIONS

- Larger sample size should be utilized in future research studies to generalize the studies' findings.
- Future research studies are needed to explore the level of mental health consequences among the health workers during the pandemic in Egypt.
- Further researches are needed to assess the mental health consequences and social stigma during the peak of the consecutive waves of the COVID-19.
- Representative data are needed to address the mental health consequences and social stigma stratified by common predictors such as socioeconomic status, gender, age, income, and past mental health status.

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**Conflicts of interest/Competing interests:** The authors declare that the present study was performed in absence of any conflict of interest.

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