Health and Social Effects of COVID-19 among Recovered Patients

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Abstract

Introduction: Researchers should conduct follow-up surveys of COVID-19 recovered patients in the convalescent phase which would be helpful to evaluate the health and social effects of this infection. Also, the COVID-19 recovered patients may have emotional stress due to their infection and may be suffered from bullying from the society post infection. **Aim of the study:** This study aimed to identify the medical and social effect of Covid-19. **Methods**: A cross sectional study was conducted using an online self-reported questionnaire created by Google Form. Data were collected from 13 July to 15 October 2020. **Results:** of 339 patients participated in this study with 88.3% response rate, the mean age of them was 40.6 years. More than three quarters of chronically ill patients noticed change in their illness after COVID-19 infection. **Conclusions**: The findings indicated that there were medical and social effects among the COVID-19 recovered patients.
 Keywords: Health effect, social effect, COVID-19.

الملخص :

تهدف الدراسة الى التعرف على الاثار الاجتماعية والطبية للمرضى المتعافين من COVID- 19 فالأشخاص المتعافون يعانون من التنمر من قبل افراد المجتمع نتيجة اصابتهم ، اعتمدت الدراسة على الاستبيان عبر الانترنت تم الابلاغ عنه ذاتيا بواسطة نموذج Google، وتمثلت فترة جمع البيانات من 13 يوليو الى 15 اكتوبر 2020 شارك في هذه الدراسة 339 مريضا بمعدل استجابة 88.3%وكان متوسط أعمارهم 40.6 عاما ومن أهم النتائج من الناحية الطبية أن المرضى المصابين بأمراض مزمنة لاحظوا تغيرا بالنسبة لمرضهم بعد الاصابة ب COVID- 19 بالإضافة الى الاثار الاجتماعية المتمثلة في الاتجاهات السلبية من أفراد المجتمع تجاه الأشخاص الذين تعافوا من الاصابة بـCOVID- 19

الكلمات المفتاحية : الأثار الطبية ــ الأثار الاجتماعية ــ كوفيد -19

Introduction:

By the end of February 2020, several countries, including several European countries, were experiencing sustained local transmission of corona virus disease. Current estimates suggest a median incubation period from five to six days for COVID-19, with a range from one to up to 14 days. A recent modelling study confirmed that it remains prudent to consider the incubation period of at least 14 days [1,2]. Data from Italy corroborate previously identified population groups at higher risk for having severe disease and death. These groups are elderly people above 70 years of age, and people with underlying conditions such as hypertension, diabetes, cardiovascular disease, chronic respiratory disease and cancer [3-5]. Men in these groups appear to be at a higher risk than females. Chronic obstructive pulmonary disease (COPD), cardiovascular diseases, and hypertension have been identified as strong predictors for ICU admission [5]. According to the World Health Organization (WHO) in 2021, most COVID-19 cases had mild to moderate infection, about 10-15% of patients had severe illness and approximately 5% progressed to critical condition. Recovery from COVID-19 occurs after 2 to 6 weeks [6]. There are many studies indicated that the COVID-19 pandemic has major psychological and social effects. The psychological sequelae may persist for months and years to come. Studies indicated that the pandemic is associated with distress, insomnia, anxiety, and depression in the general population and among patients. Social isolation, anxiety, fear of contagion, stress and economic difficulties may lead to the development or exacerbation of depressive, anxiety, substance use and other psychiatric disorders in COVID-19 survivors [7-9].

This study aims to identify the medical effects of COVID -19 on the patients after the recovery and determine the social effect of COVID -19 on the studied patients.

Methods:

This study is a cross sectional that conducted from 13 July to 15 October 2020 using an online survey, via Google Drive. The questionnaire link was shared with groups

of recovered COVID-19 survivors on Facebook. Sample size was calculated using EPI INFO version 7 software (Center for Disease Control and Prevention, Atlanta, Georgia USA). Sample size calculation was based on prevalence of 50%. Calculations resulted in a sample of 384 patients (confidence interval 95% and power 80%). This study was approved by Ethics Committee, Faculty of Medicine, Assiut University (IRB no: 17300452 at 28/7/2020). The aim of the study was explained in the first page of google in a simple Arabic Language and reassured the participants

personal information and responses are confidential. The participation was anonymous and voluntary. After agreement, the participants filled the questionnaires that consisted of several items to explore demographic characteristics of respondents (age, sex, residence, educational status, number of children), medical history, medical consequences of COVID-19, social effects of COVID-19 and social stigma. A pilot study was conducted on 20 participants to test the content of the questionnaire who excluded from the sample. The duplication of responses was avoided to ensure validation of data, the option of "Allow only one response per user" was activated while creating the form. For ensuring the validity of data, activation of "Allow only one response per user" option was done during the form design. The authors received responses from 339 patients with 88.3% response rate. Data were processed and analyzed using SPSS software version 21. Frequency counts and percentages were used to analyze the demographic attributes, bivariate analysis for qualitative data using Chi square test. The significance level will be considered at P-value < 0.05.

Results:

Table (1) shows that of 339 patients participated in this study with 88.3% response rate, the mean age of them was 40.6 years (SD=13.2 years), 58.4% were females, 78.5% were married,70.8% were urban residents and 82.3% were non-smokers. As shown in Figure (1), the medical staff represented 28.3% of the sample followed by employees (26.8%). More than one third of the studied patients had chronic diseases (36.6%) as 53.2% of those were hypertensive and 20.2% were diabetics and the same percentage were asthmatics. More than three quarters of chronically ill patients noticed change in their illness after COVID-19 infection and the reason of this change was caused by both illness and drugs (Table 2). The Table (3) shows that a considerable proportion of the individuals reported fatigue (54.3%), myalgia (23.6%), laziness (23.0%) and insomnia (20.4%). After recovery, 5.7% of the respondents reported that their general health condition was normal while 31% had intolerance effort and 22.1% suffered from fatigue.

Table (4): COVID-19's potential impact on work nearly 50% had no change in their work as well as their partner work while 13.6% of the participants decreased their working hours compared to 10% of their partners. Avoid attendance of any social events or occasions (38.6%) and Fear of contact to others (37.5%).

Nearly 70% of the participants believed that talking to the family members or friends overcame their emotional stress during the disease. Only 9.1% communicated with health care providers

specially the psychiatrists. The common suggestions of the studied population to overcome the COVID -19 pandemic were being more close to the God (79.9%), talking to family and friends (62.5%) and communication with recovered COVID-19 patients to get benefit from their experiences (36.0%). About 76% showed that giving advices to other people to pass their illness safely is the first mean to help others after COVID -19 experience, 68.7% will telling their experiences with the disease and advising the others to follow the preventive measures seriously was selected by more than fifty percent. More than half of the participants had bad experience after COVID-19 exposure (Figure 3) and this experience is statistically significant higher among those with low educational levels (Table 7) .

Table (1): Personal data of the studied population 2020

Variable	No. (339)	%
Age: (years)		
< 30	72	21.2%
30 - < 40	108	31.9%
40 - < 50	79	23.3%
≥ 50	80	23.6%
Mean ± SD (Range)	40.58 ± 13.21 (17.0-79.0)	
Sex:		
Male	141	41.6%
Female	198	58.4%
Nationality:		
Egyptian	299	88.2%
Arabian	40	11.8%
Residence:		
Rural	99	29.2%
Urban	240	70.8%
Level of education:		
No certificate	34	10.0%
Basic education	19	5.6%
Secondary	78	23.0%

University	156	46.0%
Postgraduate	52	15.3%
Marital status:		
Single	60	17.7%
Married	266	78.5%
Divorced	5	1.5%
Widowed	8	2.4%
Smoking:		
Smoker	38	11.2%
Non-smoker	279	82.3%
Passive smoker	15	4.4%
Ex-smoker	7	2.1%
Type of smoking:		
Cigarette	24	63.2%
Shisha	14	36.8%
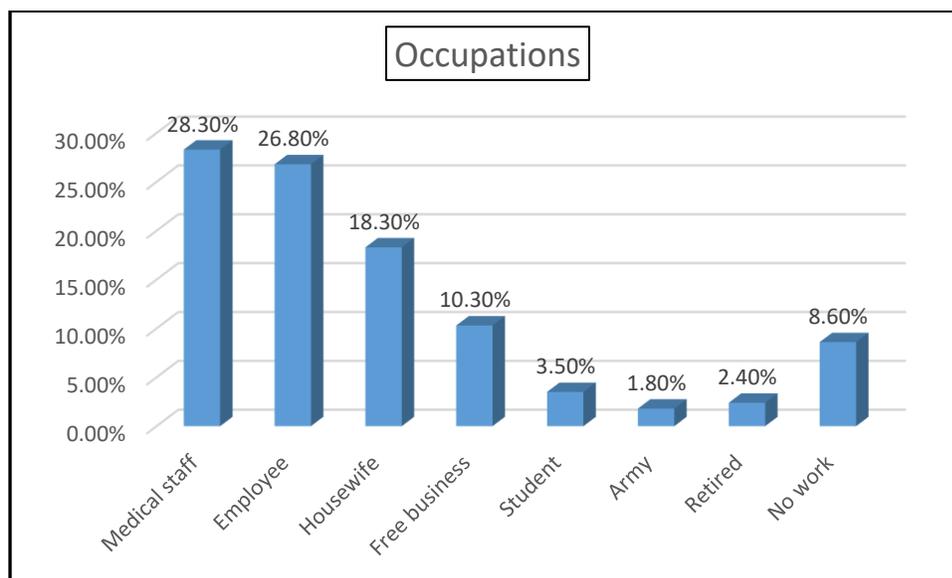
Figure (1): Occupations of the studied population

Table (2): Health effect of COVID-19

Variable	No. (339)	%
Effect of COVID-19 on blood pressure or blood glucose:		
Yes	55	16.2%
No	207	61.1%
Do not know	77	22.7%
Any drop of blood pressure happened:		
Yes	29	8.6%
No	75	22.1%
Do not know	235	69.3%
Presence of chronic disease:		
Yes	124	36.6%
No	215	63.4%
Type of chronic disease: (n=124)		
Hypertension	66	53.2%
Diabetes Mellitus	25	20.2%
Asthma	25	20.2%
Auto-immune	11	8.9%
Cancer	2	1.6%
Others	7	5.6%
Any change in blood pressure / blood glucose / bronchial asthma:		
Yes	98	79.0%
No	26	21.0%
Cause of change: (n= 98)		
COVID-19 infection	39	39.8%
Drugs of COVID-19	12	12.2%
Both	47	48.0%

Table (3): The post COVID-19 health effect

Variables	No. (339)	%
Persistent of complaints		
Fatigue	184	54.3%
Myalgia	80	23.6%
Laziness	78	23.0%
Insomnia	69	20.4%
Depression	54	15.9%
Dizziness	48	14.2%
Anxiety and fear	47	13.9%
Headache	42	12.4%
Sore throat	35	10.3%
Loss of smell	34	10.0%
Cough	32	9.4%
Anorexia	27	8.0%
Sleeping for long time	23	6.8%
Loss of taste	23	6.8%
Sputum production	16	4.7%
Diarrhea	16	4.7%
Eye discomfort	13	3.8%
Runny nose	10	2.9%
Fever	4	1.2%
The general health condition after recovery:		
Normal	121	35.7%
Effort intolerance	105	31.0%
Fatigue	75	22.1%
Shortness of breath	23	6.8%
Weight loss	15	4.4%

Table (4): COVID-19's potential impact on work and the future

Variable	No. (339)	%
Affection of the work:		
Reduction of the work hours	46	13.6%
Work from home	29	8.6%
Temporary loss of the job	23	6.8%
Permanent loss of the job	5	1.5%
No affection	166	49.0%
Not working	70	20.6%
Affection of the partner work:		
Single	56	16.5%
No affection	176	51.9%
Reduction of the work hours	34	10.0%
Works from home	16	4.7%
Temporary loss of the job	11	3.2%
Not working	46	13.6%
Impact of COVID- 19 on the future:		
Avoid attendance of any social events or occasions	131	38.6%
Fear of contact to others	127	37.5%
Feel that the people closed to you afraid of you	100	29.5%
Find difficulties to take part in my social duties	90	26.5%
Your social relations became limited	77	22.7%
Isolation is the only solution to your problems	56	16.5%
Feeling sad all times	48	14.2%
Find difficulties in dealing with the others	47	13.9%
Feeling pity looks from others annoys you	28	8.3%
no plans for the future	28	8.3%
The relations with the friends and colleagues have changed	25	7.4%
Feeling rejected by others	20	5.9%
Loss of ways to communicate with others	18	5.3%
Feeling ashamed when someone talks about COVID -19	17	5.0%

Table (5): Social and psychological effects of COVID-19 crisis

Variable	No. (339)	%
Emotional stress after COVID-19:		
Affection of the health	207	61.1%
Family impact	129	38.1%
Social distancing	110	32.4%
Financial impact	72	21.2%
Quarantine	72	21.2%
Difficulty of availability of medical services	62	18.3%
Impact on offspring	53	15.6%
Impact on the work	46	13.6%
Community impact	43	12.7%
Habits or life styles changed:		
Became more dependable on food prepared at home	202	59.6%
Practicing sport more than before	25	7.4%
Practicing sport less than before	17	5.0%
Became more dependable on fast food (food delivery)	5	1.5%
None of the above	118	34.8%
Interest to get information about COVID -19:		
Interested to get more COVID -19 news	116	34.2%
No interested to know more news	76	22.4%
Spend longer time to get updated COVID-19 news from online and television	47	13.9%
Do some sport activity and entertainment games	11	3.2%
No effect	100	29.5%
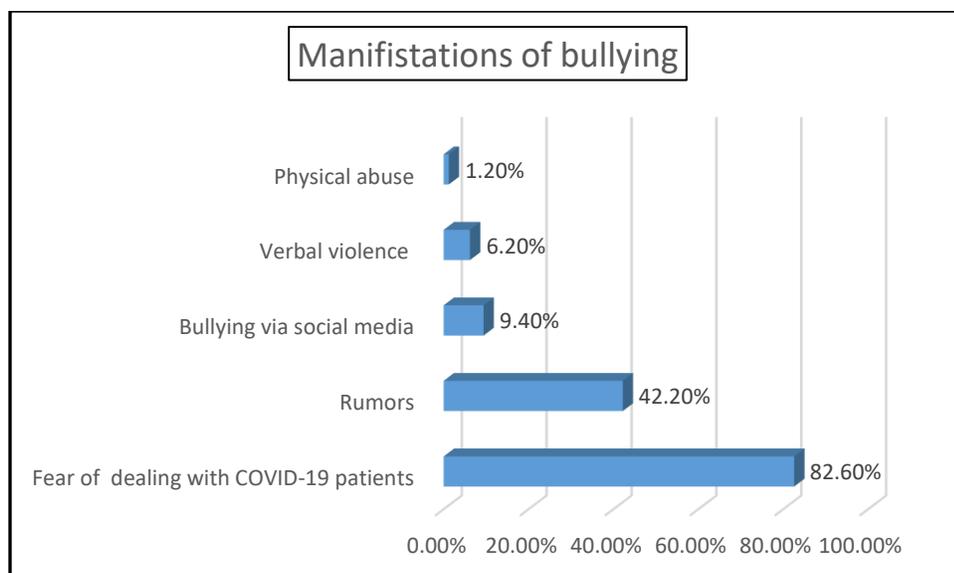
**Figure (2): Manifestation of bullying among the study participants**

Table (6): Coping with social effects of COVID-19

Variables	No (	%
Overcome the emotional stress:		
Talk to family and friends	236	69.6%
Watch T.V and use social media more than before	129	38.1%
Read books	34	10.0%
Communicate with health care providers specially the psychiatrists	31	9.1%
Suggestions to overcome the COVID -19 pandemic:		
Be more close to the God	271	79.9%
Talk to family and friends	212	62.5%
Communicate with recovered COVID-19 patients to get benefit from their experiences	122	36.0%
Use social media	101	29.8%
Communicate with health care providers	77	22.7%
Doing some sport activities	56	16.5%
Read some books	56	16.5%

|		
Communicate with psychiatrists to give their opinion to overcome this crisis	48	14.2%
Practice the favorite hobby	44	13.0%
Do the work or study at home gradually	42	12.4%
Methods to help others after COVID -19 experience:		
Giving them advices to pass their illness safely	257	75.8%
Telling your experience	233	68.7%
Advise them to follow the preventive measures seriously	178	52.5%
Donate plasma for sick people	60	17.7%
Volunteer to help the patients	36	10.6%
Donate money for people and hospitals	25	7.4%
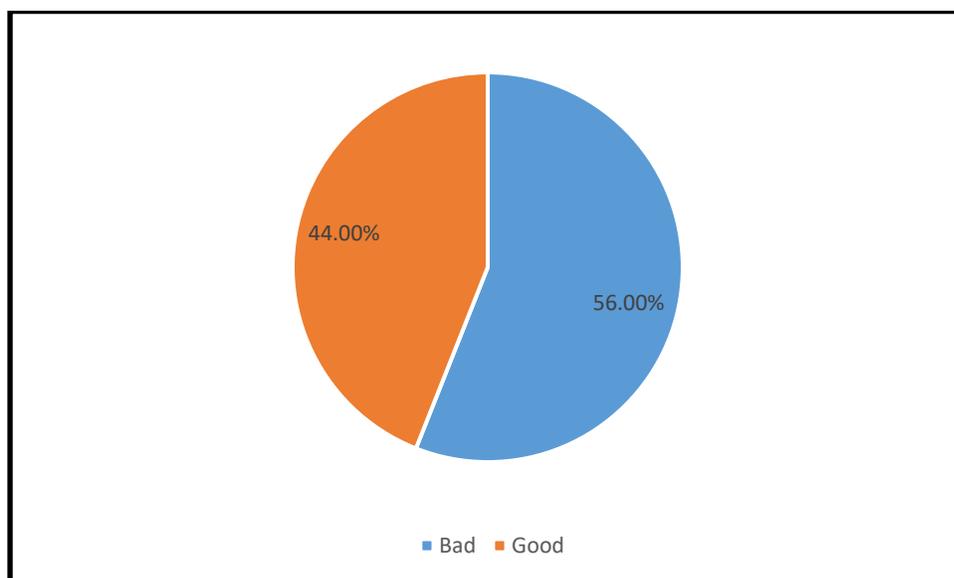
Figure (3): General experience of the study participants toward COVID-19 epidemic

Table (7): Relationship between the COVID -19 experience and the sociodemographic characteristics of the study participants

Item	COVID -19 experience				P-value
	Bad (190)		Good (149)		
	No.	%	No.	%	
Age: (years)					
< 30	40	55.6%	32	44.4%	
30 - < 40	55	50.9%	53	49.1%	0.551
40 - < 50	48	60.8%	31	39.2%	
≥ 50	47	58.8%	33	41.3%	
Sex:					
Male	75	53.2%	66	46.8%	0.371
Female	115	58.1%	83	41.9%	
Nationality:					
Egyptian	173	57.9%	126	42.1%	0.066
Arabian	17	42.5%	23	57.5%	
Residence:					
Rural	57	57.6%	42	42.4%	0.716
Urban	133	55.4%	107	44.6%	
Level of education:					
No certificate	23	67.6%	11	32.4%	
Basic education	12	63.2%	7	36.8%	
Secondary	54	69.2%	24	30.8%	0.014*
University	75	48.1%	81	51.9%	
Postgraduate	26	50.0%	26	50.0%	
Occupation:					
Medical	52	54.2%	44	45.8%	
Non-medical	68	51.5%	64	48.5%	0.071
Housewife	44	71.0%	18	29.0%	
Not working	26	53.1%	23	46.9%	
Marital status:					
Not married	37	50.7%	36	49.3%	0.297
Married	153	57.5%	113	42.5%	

Discussion

The mean age of the participants was 40.6 years (SD=13.2 years), 78.5% were married,70.8% were urban residents and 82.3% were non-smokers. Lei et al. (2020) found that the average age was 52.9 years (SD ± 16), including 107 men and 97 women [10]. Khraise et al. (2020)

reported that approximately half of the infected people in Jordon were young adults between 20 and 40 years old because these are the most socioeconomically active individuals [11]. In the present study more than half were females (58.4%) this may be because the effect of estrogen hormone which enhanced capability of producing antibodies [12]. Also Khraise et al. (2020) found that the majority of symptomatic patients (~70%) were females [11]. On the other hand, the random-effect model was used in the meta-analysis. Gender distribution showed that the proportion of male was 68.8% (95% CI, 64.6%–72.9%), p = 0.014, while the proportion of females in the study was 41.1% (31.8%–50.4%) with significant heterogeneity, p = 0.001. Medical staff followed by employees and housewives were the more affected persons as they more exposed to the source of infection and infected people. More than one third of the studied patients had chronic diseases and the most common were hypertensive, diabetics and asthmatics as these are the most common chronic diseases among the Arabians. These findings are agreed with those reported by Khraise et al. [11] but with lower frequencies of hypertension (17.6%) and type II diabetes mellitus (10.2%). In the present study, 20.4%,15.9% and 13.9% of the participants suffered from insomnia, depression, anxiety and fear of infection during the COVID-19 crisis. This may be related to fear of unknown outcome and panic from social media stories [7]. Repeated exposure to reports about the COVID crisis can intensify anxiety. Worries and fears cause various mental and physical symptoms and may lead to the development of anxiety disorders, depression and sleep disorders. Mason and Harvey, 2014 proved that sleeplessness contributes to symptoms of depression and anxiety, also symptoms of depression and anxiety disturb sleep [13]. Wang et al. examined psychological effects of COVID-19 epidemic in 1210 Chinese population. They found that 53.8% had moderate or severe psychological impact, 16.5% had severe depressive symptoms and 28.8% suffered from moderate to severe anxiety symptoms [14].

Qiu et al. conducted a study included 52 730 people in China during COVID-19 epidemic and found psychological distress was reported by about 35% of the participants [15]. Cascella et al. [9] and Lai et al. [10] examined a state of mental health of 1257 health care professionals in China. 50.4% of study participants reported depression, 44.6% anxiety, 34.0% insomnia and 71.5% distress. Ahmed et al. did an online survey of 1074 Chinese people and found elevated rates of anxiety, depression, harmful alcohol use and decrease in mental wellbeing. Rates of anxiety and

depression were higher among young people aged 21–40 years in comparison to other age groups [16]. Huang and others conducted a web-based survey of 7236 individuals in China and fond that the prevalence of generalized anxiety disorder, depressive symptoms and sleep abnormalities were 35.1%, 20.1% and 18.2%, respectively [4]. In the present study 32.4% of the participants suffered from the social distance. Xiao et al. studied a relationship between social capital and sleep characteristics in isolated persons during the COVID-19 epidemic. Researchers observed that anxiety was associated with stress and reduced sleep quality, and the combination of anxiety and stress reduced the positive effects of social capital on sleep quality [17]. In this study, 56% of the respondents had bad experience with COVID-19 crisis. This finding is consistent with Li et al. [10] The authors observed that negative emotions including anxiety, depression and anger rose, whereas the positive emotions and life satisfaction decreased. But it is different from the results of Al-Hanawi and his team found that Saudi participants showed a positive and optimistic attitude toward COVID-19 [18] and a study conducted in China, where the majority of participants had good attitude toward this crisis [19]. Global bullying is a public health problem which often increase during lockdowns because of increased tensions among people [20]. In the current study, manifestations of bullying in the community, fear of dealing with COVID-19 patients (82.6%) and rumors (42.2%). Haddad and others in 2021 found that 59.3% of Lebanese adults' participants reported having been bullied during this pandemic [21]. This study gave an idea about the health and social effect of COVID-19 among a sample of adults from the general population. However, it has several limitations. Its cross-sectional design does not allow us to infer causality between the impact of COVID-19 pandemic and the associated factors. The data were collected online using a self-administered questionnaire could be risk to an information bias. The sample size was not big enough to generalize to the whole population.

Conclusion:

After recovery from COVID-19 exposure, 5.7% of the respondents their general health condition was normal while 31% had effort intolerance and 22.1% suffered from fatigue. More than half of the participants had bad experience after COVID-19 exposure. During the COVID-19 pandemic many of persons are staying at home , working from home, temporary unemployment, decreasing of physical contact with people and doing less social activities. This can have a negative effect on the physical and mental health.

Recommendations:

The study recommends that:

The emotional and social support of the COVID patient must continue to overcome his illness safely. Talking to family members or friends can help in decreasing the effect of crisis. Adaptation of lifestyle changes and management of the fear of contracting the virus by using social media accounts to promote positive and hopeful stories. Correct misinformation from scientific sources. If people are able to offer support to others in the community who may need it, such as helping them with food and shopping. Don't discriminate against people because of fears of the spread of COVID-19. Don't discriminate against people who have coronavirus. COVID-19 has affected people from many countries. Don't attribute it to any specific group.

possible .

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Appendix 1

A proposed program from   perspective of Social Group work method to relieve the negative effects of COVID-19 among Recovered Patients

- **Program type**: guided

- **Objectives of the program**:

Providing those recovering from COVID-19 with sufficient information on how to deal with the negative effects resulting from their infection with this virus, such as bullying and social stigma.

- Effective participation of those recovering from COVID-19 through the techniques of this program such as group discussions, workshops, lectures and other program contents

- **The target group of the program**: those recovering from COVID-19

- **Duration of application of the program**: 24 sessions, two sessions per week, the duration of each session is an hour

- **Techniques of the proposed program** :

- **Group discussion**

Lectures and seminars:

Workshops

- **Strategies for the proposed program:**

- Persuasion strategy, behavior change, participation, and group interaction

- **The roles of the social group worker through the proposed program**:

The role of information provider, the helper, coordinator , and the possible