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Effect of Skills-based Psychoeducation Program Among COVID-19 Recovered People with Mental Health Problems

Research Article

Noor Muhammad*, Bijon Baroi and Jarina Akter Akhi

Department of Psychology, Jagannath University, Dhaka 1100, Bangladesh

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Abstract : COVID-19 is a contagious and unknown disease that's why infected people are isolated with limited social support or due to uncertainty about their lives it may create mental health problems even after recovering from the disease. The present study was carried out to evaluate a skills-based psychoeducation program on reducing mental health problems among COVID-19 recovered people in Bangladesh. Necessary socio-demographic information was collected through researchers made form and mental health problems were assessed into two phases by using General Health Questionnaire (GHQ-28) from 30 purposively selected participants in Dhaka city of Bangladesh. Based on participants' criteria, they were equally divided into two groups each containing 15 COVID-19 recovered people with minimum levels of mental health problems where the experimental group received two sessions after the baseline assessment but the control group didn't receive. Pre-post outcome design under quasi-experimental design was followed to evaluate psychoeducation program effects on reducing mental health problems (i.e., somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression). After analyzing data by both descriptive and inferential statistics, results indicated that anxiety and depression of COVID-19 recovered people were more severe and somatic symptoms and social dysfunctions were less severe. Besides, due to receiving skills-based psychoeducation these mental health problems of COVID-19 recovered significantly reduced but not among them who didn't receive. So, it can be said that a psychoeducation program is an immediately useful method for reducing mental problems linked to psychological well-being. The implications of these findings for research and practice are discussed.

Keywords: *Psychoeducation • Mental health problems • COVID-19 recovered people*

1. Introduction

COVID-19 is a dangerous and life-threatening virus that began to spread from Hubei Province's capital in China named Wuhan in December 2019 (Wu et al., 2020) and till now in the world, almost all countries are suffering from COVID-19. Over the world, over 304 million people are affected by COVID-19 and over 5.4 million people are died (WHO, January, 2022). Besides, in Bangladesh 15,83,253 people are infected by COVID-19 and 15,47,427 patients have already been recovered from COVID-19 (WHO, December, 2021). COVID-19 was caused by SARS-CoV-2 that is also known as severe acute respiratory syndrome which speeded quickly through person to person contact to infect human beings all over the world (Abboud et al., 2020) and its infections range from mild to deadly. Almost all infected people were isolated with limited social support and detached

* Corresponding author: Noor Muhammad
Email: noor4salaphy@yahoo.com

from close family members or relatives. Besides, the Government officials are continuing many steps to reduce human contact by enforcing countrywide lockdown or shutdowns of public places as well as initiating many recursions to ensure the safety of the populations through social distancing or self-quarantine, limiting the social interactions. These lockdown-related loneliness and isolation may create psychological distress among people and may even recover from COVID-19 (Chen et al., 2020). On the other hand, uncertainty about whether they would live or die might have a negative impact on their mental health. Although physical health has been affected due to the infection by COVID-19, mental health has also been affected causing significant mental health problems among those people (Arora et al., 2020) that even after physically recovering from COVID-19 mental health problems prevail. Immediately after spreading COVID-19, a distinct set of emotions, namely panic and fear of the unknown, was being perceived by those living and observing the expansion of COVID-19 and the way it rapidly took lives (Yao et al., 2020). Recently, over 1210 participants on 194 cities in China found that 53.8% people had a severe or moderate negative impact on mental health, 31.3% people had some forms of depression, 36.4% people had some forms of anxiety, and 32.4% had some forms of life stress (Liu et al., 2020). Rogers et al. (2020) through a systematic review on 10 countries explored that most of the patients admitted due to MERS-CoV and SARS-CoV cases 27.9% experienced some degree of confusion, 32.6% depressive mood, 35.7% anxiety, 34.1% impaired memory, and 41.9% insomnia. Recent studies focused that as an alternative to established psychotherapy psychoeducational programs (PEPs) may also be used to reduce mental health problems (i.e., anxiety, depression or stress) which is recognized as a fundamental intervention package used within short duration (Taylor-Rodgers et al., 2014). PEPs are basically aimed at directing the affected person's learning, giving opportunities to express their suppressed emotions within a comfort zone, creating original hope or strengthening it, enhancing decision making skills with self-awareness, and giving opportunities to practice and enhance their knowledge (Agren et al., 2012; Morokuma et al., 2013). Dixon et al. (2001) also mentioned psychoeducation as a form of education including issues about illnesses, information resources about crisis, skills training, and ongoing guidance and social or emotional support that may improve their gap of knowledge and skills. Lukens and McFarlane (2004) explored that psychoeducation programs had an impact on reducing mental health problems that affect their quality of life. Drawing on evidence from literature it has found that people even after physically recovering from COVID-19 still suffer from various mental health problems where psychoeducation may be the easiest and preliminary supportive treatment to reduce their psychological problems before developing serious mental disorder. Besides, there is enough study about assessing mental health problems among COVID-19 recovered people but lack of studies about probable immediate solutions to solve or reduce these problems in Bangladesh. Considering the above issues, present researchers have planned to evaluate the effectiveness of skills-based psychoeducation programs in reducing mental health problems among the COVID-19 recovered people in Bangladeshi context.

Objectives of the Study

The main objective of the study was to explore the effectiveness of skills-based psychoeducation programs among COVID-19 recovered people with mental health problems in Bangladesh. The specific objectives were:

i. To develop skills-based psycho-education program for the COVID-19 recovered people with mental health problems;
ii. To assess the severity level of mental health problems among the COVID-19 recovered people;
iii. To investigate whether there is any effect of skills-based psychoeducation programs in reducing the mental health problems (i.e., somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression) among the COVID-19 recovered people.

2. Materials and Methods

Sample and Sampling Technique

Sample comprised of 30 COVID-19 recovered people with mental health problems who were selected through purposive sampling techniques based on some inclusion criteria (i.e., who had no known mental disorder but having noticeable levels of mental health problems within a certain period) and exclusion criteria (i.e., who had received in such types of psychological services during the preceding years or who were not interested to attend the program) from different areas in Dhaka city. Then those participants were equally allocated into two groups (i.e., experimental and control group).

For equally dividing all participants into two equivalent groups, independent sample t-test was carried out to find-out whether there were significant variations due to demographic factors and the findings are reported in Table 1.

Table 1. Sample Characteristics and Testing Homogeneity of the Participants through Independent Sample t-test of Mental Health Problems Score Assessed by GHQ-28

Socio demographic variables		Experimental (n=15)	Control (n=15)	*t*-test
		f (%)	*f* (%)	
Gender	Male	6(40.0)	6(40.0)	
	Female	9(60.0)	9(60.0)	-3.82**
Age	25-40	8(53.3)	7(46.7)	
	41-55	7(46.7)	8(53.3)	-1.94
Education	S.S.C or Below	8(53.3)	9(60.0)	
	H.S.C or Upper	7(46.7)	6(40.0)	-.02
Occupation	Employed	5(33.3)	4(26.7)	
	Unemployed	10(66.7)	11(73.3)	6.20***

Note. **p <.01; ***p <.001.

Since mental health problems were significantly varied due to the variation of gender and occupation, then special attention was given to these two factors for making two equivalent groups.

Study Design

The present study was conducted by following pretest-posttest design with a control group under quasi-experimental design for observing the effect of skills-based psychoeducation programs on reducing mental health problems among COVID-19 recovered people. The design and protocol of the study is shown in Figure 1.

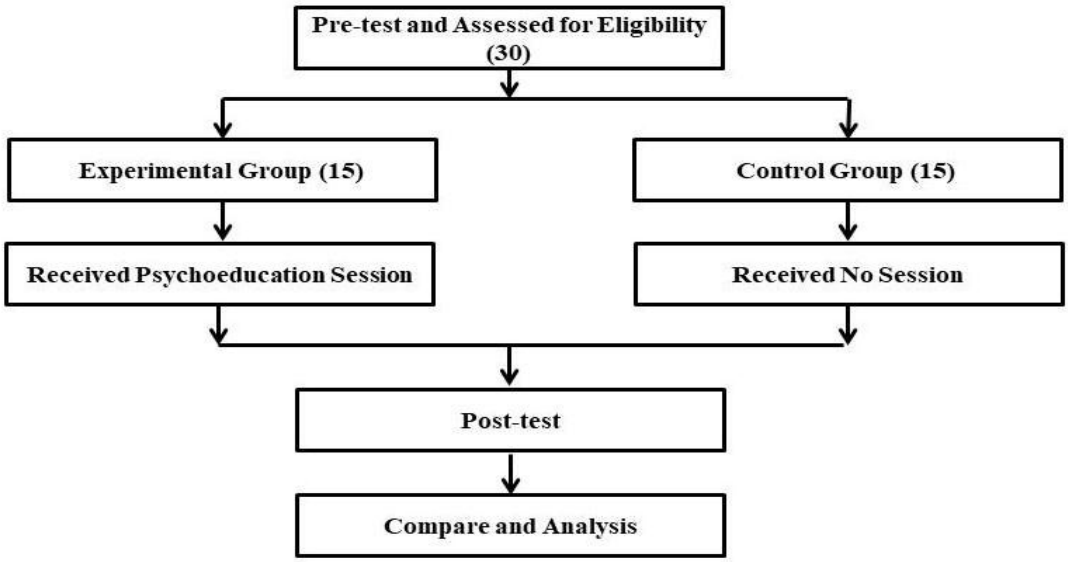

Figure 1. Design and protocol of the study.

Measuring Instruments and Outcome Measures

The following questionnaires have been administered here to measure and collect primary raw data from the participants.

- Personal Information Form (PIF)
- Adapted Bangla Version of General Health Questionnaire- 28 (GHQ-28)

Description of the instrument is given below:

Personal Information Form (PIF). A questionnaire form was prepared by the researchers to collect socio-demographic information of the participant (e.g., age, gender, educational qualification, employment status, and marital status).

Adapted Bangla Version of General Health Questionnaire-28 (GHQ-28). The scale was originally developed by Goldberg and Williams (1988) used to measure mental health problems. It consists of 28 items within four subscales reflecting somatic symptoms (item 1-7), anxiety and insomnia (item 8-14), social dysfunction (item 15-21), and severe depression (item 22-28). Its response option ranges from "less than usual" to "much more than usual" on a scale ranging from “0” to “3”. The total score ranges from 0 to 84 where the higher the scores indicate greater intensity of mental health problems. Cut off score was 39. The score from 0 to 6 was considered as having low, 7 to 13 as moderate, and 14 to 21 as severe. Banoo (2001) translated it into Bangla. A significant correlation (r = .725) was found between the scores of English and Bangla versions indicating that both versions measure the similar properties. The test-retest reliability was found to be .756. The concurrent validity of the questionnaire, as measured by Middlesex Hospital Questionnaire (MHQ), was .55 (p < .001). It also has a good face and content validity. So, these results suggest that the Bangla version of the scale is psychometrically sound and culturally appropriate.

The Skills-based Psychoeducation Program for COVID-19 Recovered People

The present researchers prepared a psychoeducation program especially for COVID-19 recovered people by following below steps (Ara & Chowdhury, 2014) where from the first judge evaluation to the final write up was done within two months.

- ❖ Comments and opinion were taken from COVID-19 recovered people and expert panel;
- ❖ Required materials and information were gathered from various sources such as books, researches, existing writings and made the first draft of psychoeducation program;
- ❖ For judge evaluation, this psychoeducation material was checked by practicing psychologist, and also by the faculty members of Department of Psychology, Jagannath University, Dhaka;
- ❖ After that, re-checking and re-writing of the second draft of psycho-education material was completed;
- ✓ Finally, through pilot testing its appropriateness were checked and made the final psychoeducation materials used in the study.

Table 2. Session Summary of Skills-based Psych-oeducation Program

Session	Covered Topic	Target
Session 1	✓ Purpose of the study ✓ An overview of the topics ✓ Apprehension	Encouraging and engaging the COVID-19 recovered people to the program.
	✓ Describing meaning, sign, symptoms, and causes of such mental health problems after recovery from COVID-19. ✓ Treatments Issues o Medications o Psychological services ✓ Prognosis	Bringing insight about problems and increasing knowledge about mental health problems.
Session 2	✓ Overview of previous session ✓ Developing skills and providing guidelines on self-care ✓ Developing coping skills through problem solving skills training, relaxation training, pleasant and meaningful activity planning. ✓ Informing services centers for further assistance ✓ Fulfilling queries ✓ End-up the session	To adopt new roles and required skills needed for coping or managing daily life problems linked to their mental health problems.

Procedure

After selecting and getting informed consent from the participants, necessary socio-demographic information was collected and a pre-test was done. Then a total of 30 participants were equally divided into two groups based on their criteria. After that, one group named the experimental group received two psychoeducational sessions (2×1.5 hours) along with necessary documents for their reading and learning but another group named the control group didn't receive any session. After approximately one week of completing the sessions, again post-test was completed in both groups. Only two sessions were conducted to reduce the likelihood of dropout. After collecting required information from the respondents, thanks were given for their cooperation in the study.

Ethical Issue

In the study, the COVID-19 recovered people who faced no potential risks (e.g., physical, psychological, social or even legal) and confidentiality of their information was assured. Before data collection, participants' consent was taken after necessary debriefing (i.e., nature and objectives of the study, right to refusal or withdrawal from participation etc.) and also informed that there was no financial benefit for participation but appreciation and thanks given for their participation in the study. For avoiding ethical violation, after post-test a written material of the psychoeducation program was provided to the participants of the control group and also referred to services centers having serious mental health problems.

3. Results

Focusing on the objectives of our study, the collected data were analyzed using both descriptive (i.e., mean, standard deviation, frequency, percentage) and inferential statistics (i.e., independent sample t-test, one-way ANOVA, and paired sample t-test) with the help of computer software, called Statistical Package for Social Science (SPSS) version 23 which are shown in the following tables consecutively and also used excel for making histogram. Before applying inferential statistics, reliability of difference scores was also identified.

To compare the mean difference of mental health problems among two groups both in pre-test and post-test descriptive statistics and MS excel were used and the findings presented in Table 3 and Figure 2 to 6.

Table 3. Comparative Statistics of Mental Health Problems between Pretest and Posttest within the Experimental Group and Control Group based on the Norm of the GHQ-28

Mental Health Problems		Pre-test			Post-test		
	Group	Low	Medium	High	Low	Medium	High
		f (%)	*f* (%)	*f* (%)	*f* (%)	*f* (%)	*f* (%)
Somatic Symptoms	EG	0 (0.0)	12 (80)	3 (20)	8 (53.3)	7 (46.7)	0 (0.0)
	CG	0 (0.0)	15 (100)	0 (0.0)	0 (0.0)	6 (40.0)	9 (60)
Anxiety & Insomnia	EG	0 (0.0)	4 (26.7)	11 (73.3)	2 (13.3)	8 (53.3)	5 (33.3)
	CG	0 (0.0)	4 (26.7)	11 (73.3)	0 (0.0)	2 (13.3)	13 (86.7)
Social Dysfunction	EG	0 (0.0)	10 (66.7)	5 (33.3)	5 (33.3)	9 (60.0)	1 (6.7)
	CG	1 (6.7)	10 (66.7)	4 (26.7)	0 (0.0)	9 (60.0)	6 (40.0)
Severe Depression	EG	0 (0.0)	4 (26.7)	11 (73.3)	0 (0.0)	0 (0.0)	0 (0.0)
	CG	0 (0.0)	4 (26.7)	11 (73.3)	0 (0.0)	1 (6.7)	14 (93.3)

Note. f = Frequency, *EG* = Experimental Group, *CG* = Control Group.

The results presented in Table 3 indicated that among the COVID-19 recovered people the severity levels of somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression in post-test was lower than pre-test within experimental group but in control group the severity levels of somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression in post-test was approximately same as pre-test that indicates psychoeducation program has effect on reducing mental health problems.

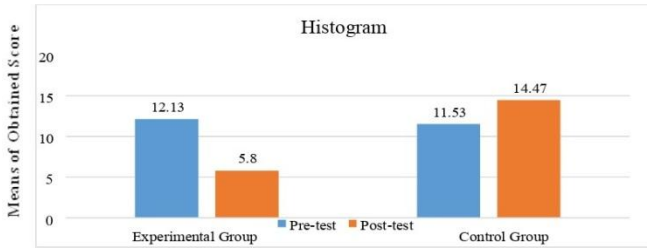

Figure 2. Comparison between pre-test and post-test of the experimental and control group in terms of somatic symptoms assessed by GHQ-28 scale.

The graphically presented results in Figure 2 showed that the level of somatic symptoms of COVID-19 recovered people has reduced from pre-test (*M* = 12.13) to post-test (*M* = 5.8) in the experimental group but in control group has increased from pre-test (*M* = 11.53) to post-test (*M* = 14.47).

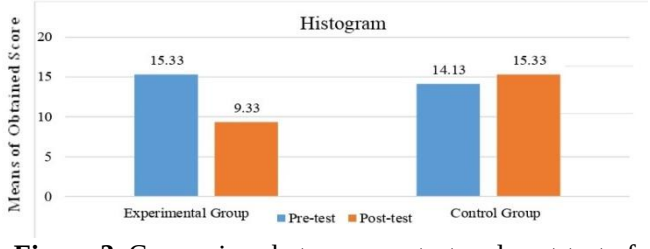

Figure 3. Comparison between pre-test and post-test of the experimental and control group in terms of anxiety and insomnia assessed by GHQ-28 scale.

The graphically presented results in Figure 3 showed that the level of anxiety and insomnia of COVID-19 recovered people has reduced from pre-test (*M* = 15.33) to post-test (*M* = 9.33) in the experimental group but in control group somehow has increased from in pre-test (*M* = 14.13) to post-test (*M* = 15.33)

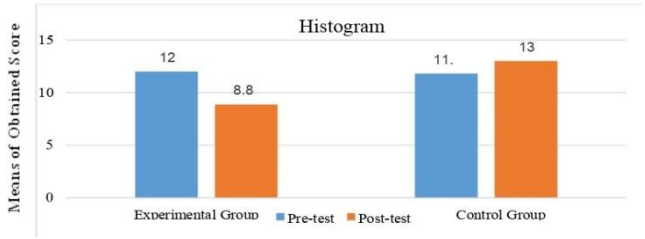

Figure 4. Comparison between pre-test and post-test of the experimental and control group in terms of social dysfunction assessed by GHQ-28 scale.

The graphically presented results in Figure 4 indicated that the level of social dysfunction of COVID-19 recovered people has reduced from pre-test (*M* = 12) to post-test (*M* = 8.87) in the experimental group but in control group has increased form in pre-test (M = 11.8 to per-test (M =13).

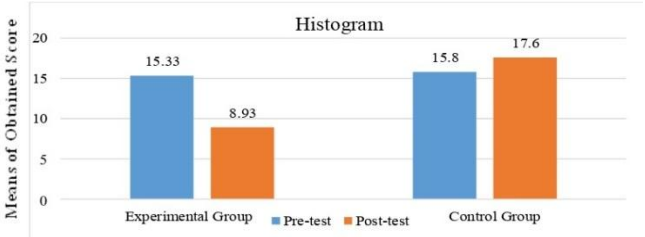

Figure 5. Comparison between pre-test and post-test of the experimental and control group in terms of severe depression assessed by GHQ-28 scale.

The graphically presented results in Figure 5 showed that the level of severe depression of COVID-19 recovered people has reduced from pre-test (*M* = 15.33) to post-test

(M = 8.93) in the experimental group but in control group somehow has increased from in pre-test (M = 15.8) to post- test (M = 17.6).

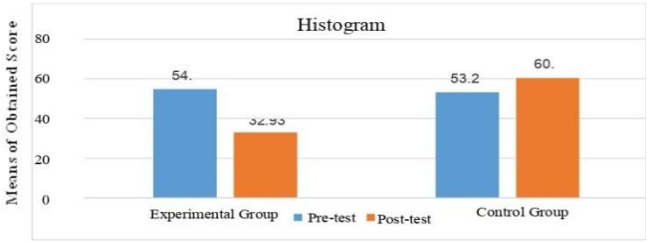

Figure 6. Comparison between pre-test and post-test of the experimental and control group in terms of mental health problems assessed by GHQ-28 scale.

The graphically presented results in Figure 6 showed that the level of global mental health problem of COVID-19 recovered people has reduced from pre-test (M = 54.8) to post-test (M = 32.93) in the experimental group but in control group has increased from in pre-test (M = 53.26) to post-test (M = 60.4) among COVID-19 recovered people that indicates psychoeducation program has effect on reducing mental health problems. A paired sample t-test was computed to identify whether the mean difference in experimental groups was significant or not. The findings have shown in Table 3.

Table 4. Comparative Outcome of Paired-sample t-test Values of Mental Health Problems within Four Sub-scale Assessed by GHQ-28 Scale in terms of the Pre-test and Post-test in the Experimental Group.

Total GHQ-28 with	Pre-test		Post-test		
Four Subscale	*M*	*SD*	*M*	*SD*	*t*-value
Mental Health Problems	54.80	7.4	32.93	32.93	10.20**
Somatic Symptoms	12.13	2.13	5.80	3.21	8.26**
Anxiety & Insomnia	15.33	3.06	9.33	4.15	6.21**
Social Dysfunction	12.00	3.32	8.87	3.96	3.04*
Severe Depression	15.33	4.17	8.93	4.42	4.36**

Note. *p <.05, **p <.01.

The results presented in Table 4 indicated that among the COVID-19 recovered people who received psychoeducational session had significant reduction in global mental health problems between pre-test (M = 54.80) and post-test (M = 32.93, p<.01) along with its four components like somatic symptoms between pre-test (M = 12.13) and post-test (M = 5.80, p < .01), for anxiety and insomnia between pre-test (M=15.33) and post-test (M = 9.33, p < .01), for social dysfunction between pre-test (M = 12.00) and post-test (M = 8.87, p < .05), and for severe depression between pre-test (M = 15.33) and post-test (M = 8.93, p < .01) that was happened due to enhancing clarity of knowledge and skills among COVID-19 recovered people.

To compare the effectiveness of two groups, one-way ANCOVA was computed that findings have shown in Table 5.

Table 5. Analysis of Covariance (ANCOVA) Model Representing Experimental and Control Groups on Post-test Score while Covariate Pre-Test Score of Mental Health Problems.

Source	Type III Sum of Squares	df	Mean Square	*F*	*p*	Partial Eta Squared
Pre-test (covariate)	1759.929	1	1759.929	39.122	.000	.592
Group	6196.663	1	6196.663	137.749	.000	.836
Error	1214.604	27	44.985			

Results displayed in Table 5 indicated that a significant difference existed in post-test score [F (1, 27) = 237.75, p < .001] between two groups while adjusting for pre-test score of mental health problems which indicating psychoeducation program decreases mental health problems in the experimental group as compared to the control group. In other words, 83.6% of the variance of total remaining scores is due to the impact of the psychoeducation program.

4. Discussion

The major aim of the study was to evaluate the effectiveness of skills-based psychoeducation programs among the COVID-19 recovered people with mental health problems. Considering ethical issues, data were collected into two phases from 30 selected participants after completing the psychoeducation sessions. The obtained data were analyzed by applying both descriptive and inferential statistics using SPSS version 23. Besides, excel is also used for making histograms. All analyzed results have been presented within various tables and figures.

The first objective was to develop a skills-based psycho-education program for COVID-19 recovered people with mental health problems. Various steps were followed to develop the program for COVID-19 recovered people including comments were taken from COVID-19 recovered people with mental health problems after recovery, materials and information were gathered from various sources such as books, researches, existing writings, the first draft was written up and checked by practicing psychologist and by the faculty members Psychology Department, Jagannath University, after rechecking and re-writing of the second draft was checked to evaluate its appropriateness through pilot study and made its final version used in the present study (Ara & Chowdhury, 2014). So, it can be said that this material was valid for applying in the study to reduce the mental

health problems among COVID-19 recovered people in the context of Bangladesh.

The second objective was to assess the level of mental health problems within four dimensions (i.e., somatic symptoms, anxiety and insomnia, social dysfunction and severe depression) among the COVID-19 recovered people with mental health problems. The severity level of somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression among COVID-19 recovered people was presented in Table 3. The findings indicate that in baseline assessment mostly COVID-19 recovered people belonged to medium and high levels indicating that although people who were physically recovered from COVID-19 but after recovering mostly are suffering from various mental health problems. Among them, anxiety-insomnia and depression were severe, indicating significant mental health problems. Besides, these people also suffered from social dysfunction and somatic symptoms. In China, within 194 cities, 53.8% people had a severe or moderate psychological impact, 31.3% people had some forms of depression, 36.4% people had some forms of anxiety, and 32.4% had some forms of stress (Liu et al., 2020). Through a systematic review, Rogers et al. (2020) explored that most of the patients admitted due to MERS-CoV and SARS-CoV cases 27.9% experienced some degree of confusion, 32.6% depressive mood, 35.7% anxiety, 34.1% impaired memory, and 41.9% insomnia.

The third objective was to explore whether there is any effect of a skills-based psychoeducation programme in reducing the mental health problems (i.e., somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression) among the COVID-19 recovered people in Bangladesh. To satisfy this objective, the required results were presented in Table 3 and 4 and Figure 2 to 6. The results revealed in these tables and figures shown that the severity levels of global mental health problems along with its four components (i.e., somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression) among COVID-19 recovered people was lower in post-test as compared to pre-test in experimental group who received two skills-based psychoeducation sessions. In pre-test mostly belonged to medium and high levels but after receiving psychoeducation sessions in post-test mostly belonged to low or medium levels. In the control group (i.e., who didn't receive any skills-based psychoeducation sessions) the mental health problems didn't reduce in post-test as compared to pretest; in contrast it was increased in posttest as compared to among COVID-19 recovered people in Bangladesh. Besides, the results revealed in Table 4 also indicated that who received psychoeducation session had significant reduction in global mental health problems within its four components (i.e., somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression) between pre-test and post-test among the COVID-19 recovered people in Bangladesh. Although, having no available studies on COVID-19 recovered people but had some evidence on other participants that psychoeducation improves the outcomes of psychological illness and many other physical problems. The findings of the present study was partially supported by the study of (Dreier & Lewis, 1991) where they found that due to applying support and psychoeducation in groups that significantly improved bodily pain and fatigue among parents of hospitalized mentally ill children. Navidian et al. (2012) also explored that caregivers who participated in group psycho-educational programs had significantly decreased burden while scores in control groups didn't change significantly. Evidence also explored that psychoeducation for patients with depressive mood disorders promote patient functioning and the well-being of caregivers (Brady et al., 2016).

The study had some limitations like a small number of the participants were selected due to less referral of persons with mental health problems and it was confined only in Dhaka city. Besides, only two psychoeducation sessions were conducted within a short follow-up period. To overcome these limitations further study is needed to confirm the long-term effects of skills-based psychoeducation programmes within the larger areas in Bangladesh.

5. Conclusion and Recommendations

Although people receiving treatment are physically recovered from COVID-19 but suffering from various mental health problems. Anxiety-insomnia and depression are more severe as compared to social dysfunction and somatic symptoms among them. This person's mental health problem is caused by lack of knowledge and skills. So, to enhance their lack of knowledge and skills by providing skills-based psychoeducation sessions their mental health problems significantly reduced. That's why for maintaining wellbeing even after recovering from COVID-19, psychological issues have to be monitored properly.

Apart from the above discussion, following recommendations may be considered. The effect of skills-based psychoeducation certainly warrants further empirical study of this intervention model, preferably with COVID-19 recovered people from different socio economic and cultural backgrounds and in-patient groups with mental disorder or even physical health problems. Further in-depth longitudinal study using mixed methods, consisting of both controlled trial with longer period of

follow-up (e.g., more than six months) and qualitative research approaches, is recommended to explore the long-term effects of the group program not only on improving COVID-19 recovered people health condition but also another patient's rehabilitation. The psychoeducational material can incorporate specific information related to drugs in the future studies in a Bangladeshi setting. Besides, it highlights that the more the intervention gap then less will be the beneficial effect among affected people. It also implies that an activity like psychoeducation has to be implemented regularly over a periodic time and has to be continuous to engage them to produce the beneficial effect and retain the effect among COVID-19 recovered people. In developed countries, many mental hospitals or clinics now offer psychoeducation programs for COVID-19 recovered people that have to apply in our country but caution must be taken about the misinformation of this program.

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