ORIGINAL ARTICLE

Impact of virtual brief wellness based psychosocial intervention on mental wellbeing of stable hospitalised COVID-19 patients – A pilot study

Thong Kai Shin, MPM, Seed Hon Fei, DrPsych

Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Selangor, Malaysia

ABSTRACT

Introduction: The Optimal Health Program (OHP) is a collaborative self-management program that promotes clients to be actively involved in their own healthcare and overall wellbeing. Program Kesihatan Optimum (SANUBARI) is a Malay version of the OHP after a translational process and cultural adaptation by psychiatrists, clinical psychologist and family medicine specialists in 2017. The program is of a low intensity, patient-centred program, advocating self-health management to improve health literacy by enhancing self-efficacy, building strengths and values, and initiating change and planning, ultimately enhancing wellbeing of people. The programme can be used as a form of early psychosocial intervention during the current pandemic in maintaining the general mental wellbeing of COVID-19 patients.

Methods: This is an open labelled interventional study of a virtual brief psychosocial intervention, called SANUBARI. The program was conducted among COVID-19 patients hospitalized in the COVID-19 wards of two centres from May 2020 until August 2020. Inclusion criteria include patients aged eighteen years and above, diagnosed with COVID-19, medically stable, speaking and reading Bahasa Melayu or English. All study subjects attended two sessions on OHP via telecommunication method and answered questionnaires (General Self-Efficacy (GSE) Scale, Patient Health Questionnaire and Generalized Anxiety Disorder Questionnaire) via computer-assisted self-interview. Data collection was done before the start of the intervention, at the end of the intervention and a month post-intervention.

Results: A total of 37 patients were recruited and more than half of the subjects were males (62.2%), single (75.5%) and from the Malay ethnicity (78.4%). Seventy-three per cent of subjects had received tertiary education, and most of them were students reflecting a higher unemployment status (73%). Most subjects have no comorbid chronic medical illness (89.2%), and none has a comorbid psychiatric illness. Comparison of the GSE score across 3-time points (pre-intervention, immediate post-intervention and a month post-intervention) showed statistically significant improvement in the mean total GSE score immediate and a month post-intervention as compared to the pre-intervention; from mean total GSE score of 29.78 pre-intervention to 34.73 (mean difference 4.946, 95% Confidence Interval 95%CI: 3.361, 6.531) immediate post-intervention and 33.08 (mean difference 3.297, 95%CI: 1.211, 5.348) a month post-intervention. There was no significant association between the socio-demographic or clinical data, depressive and anxiety symptoms, and changes in GSE scores over three time points.

Conclusion: COVID-19 patients improved their self-efficacy levels after the virtual brief OHP intervention, and it maintained a month post-intervention, protecting them from psychological stress and ultimately enhances wellbeing during this coronavirus pandemic.

INTRODUCTION

The COVID-19 has taken us all globally by storm and it has resulted in changes in our lives and economies, such as unemployment and financial insecurity. Along with the implementation of social distancing and isolation, the pandemic has created tremendous stress. There is the uncertainty of how long it will last and how this pandemic will ultimately play out. It is evident that this current COVID-19 pandemic has led to an increase, in a range of mental health issues such as abnormal stress reactions, depression, anxiety, and even post-traumatic stress disorders.[1]

Many studies have shown that during a pandemic, the prevalence of mental illness remains high. The prevalence of depression among Middle East Respiratory Syndrome (MERS) CoV patients during the outbreak was 40.7%.[2] Studies on were needed during the hospital stay for some of these patients. Past pandemics have found that general stress and adverse psychological effects were increased in infected patients.[3] Depression, anxiety and anger feelings were noted high among patients requiring quarantine and isolation.[4] Psychiatric consultations and prescriptions of medications were needed during the hospital stay for some of these patients.

The first three COVID-19 cases were reported in Malaysia on the 25th of January 2020.[5] All confirmed cases in Malaysia were admitted to the hospital for treatment and subjected to isolation for days to weeks, depending on their medical condition. In times like this, a focus on this mental health of the affected individuals is all the more critical. Some form of early psychosocial intervention should be in place even during hospital quarantine or isolation stage. Mental health interventions should begin not when one starts developing mental disorders but earlier.

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Corresponding Author: Dr Seed Hon Fei
Email: seed_tabo@yahoo.com

The existing Mental Health and Psychosocial Services (MHPSS) in Malaysia are already providing mental health intervention to aid those affected. Examples of the MHPSS intervention given are psychological first aid, relaxation techniques and art therapy. Optimal Health Program (OHP) can be an excellent addition to the existing efforts of the MHPSS teams. OHP is a structured psychological intervention that can fill in the gap of care. It focuses on the physical, emotional, intellectual, spiritual, social and occupational aspects of health. It draws upon many evidence-based practices that sit within collaborative therapy, positive psychology and wellbeing. It fosters critical thinking and self-regulation, increases capacity for health-seeking behaviour and self-care behaviour. The OHP has been shown to be effective in improving health and social functioning in patients with mental health problems by building their self-efficacy in managing the impact that mental health has on their wellbeing.[6]

Trained health professionals can provide effective OHP. The program consists of five modules, and it can be delivered individually or in groups. It adopts a person-centred approach focussing on health as defined by the clients, also a self-efficacy enhancing self-management program. The critical components of the program include education, coping strategies and skills development. With data showing the usefulness of OHP in helping people to achieve and maintain optimal health, we are now looking into its effectiveness among the COVID-19 patients during the pandemic.

The existing OHP is given face to face over five sessions. However, in this study during the current pandemic situation, we modified the program into a brief intervention, done over two sessions, and we provided it virtually. Data obtained from this research will allow us to evaluate whether this modified intervention is still effective and beneficial in increasing the self-efficacy of COVID-19 patients when dealing with the current pandemic situation. Perhaps from here, we can expand this provision of a psychosocial intervention to help other groups of populations deal with this pandemic and explore the possibility of having a helpful early psychosocial intervention in preventing mental health problems in the future outbreak.

MATERIALS AND METHODS

Study design and subjects

This study is an open labelled interventional study involving a brief psychosocial intervention, SANUBARI, Malay version of OHP that was conducted via telecommunication method among COVID-19 patients hospitalised in wards of the Low-Risk COVID-19 Quarantine and Treatment Centre, Malaysia Agro Exposition Park Serdang (MAEPS), Serdang and Hospital Sungai Buloh from May 2020 until August 2020. The inclusion criteria include patients aged eighteen years and above, diagnosed with COVID-19, speaking and reading Bahasa Melayu or English. The exclusion criteria is medically unstable patients (clinical category 3 to 5).7

The sampling frame is list of all the COVID-19 patients admitted to the wards who were in a stable condition (clinical category 1-2). Sampling method used is convenient sampling. The first 37 eligible patients (study sample size) who responded will be recruited in this study. The research team members received list of COVID-19 patients from the matron in charge of the stable COVID-19 wards (clinical category 1 or 2) after getting verbal consent from them. All these COVID-19 patients admitted were offered the OHP intervention and screened for the study. Patients were contacted through phone by a research team member and provided with information on the intervention and explained about the study. Patients were given sufficient time to consider their participation in the study. After they agreed to participate, they were given a link to the google form by the research team member. The google form was used for consent and data collection. The front page (first part) of the google form is the Patient Information Sheet and Consent page. The second part of the google form is the socio-demographic profile of study subject (Section A). The third part (Section B) is the GSE to assess self-efficacy. The fourth part (Section C) is the Patient Health Questionnaire (PHQ-9) to assess for probable depression and the fifth part (Section D) consists of Generalised Anxiety Disorder questionnaire (GAD-7) to assess for probable anxiety. Study subjects answered questionnaires used in the study via computer-assisted self-interview. Data collection was done before the intervention, at the end of the intervention and a month post-intervention.

Study instruments

The three measurement tools used in this study to measure study outcomes were the GSE, PHQ- 9 and GAD- 7.

The GSE is a 10-item psychometric scale designed to assess optimistic self-beliefs to cope with various challenging demands in life. For example, item 4 in the GSE assesses self-perceived confidence to respond to unexpected events efficiently. A total score is calculated by finding the sum of all items. The total score ranges between 10 and 40, with a higher score indicating more self- efficacy or confidence in your ability to manage an illness or follow through with behaviour change successfully.[8] The PHQ-9 is an instrument for screening, monitoring and measuring the severity of depressive symptoms. It is brief nine self-report tools consisting of nine questions based on the nine DSM-IV criteria for major depression. The tool rates the frequency of the symptoms into the scoring severity index, each of which is scored 0 to 3, providing a 0 to 27 severity score. PHQ scores of 5, 10, 15 and 20 represent mild, moderate, moderately severe and severe depression.[9] The GAD-7 is a practical self-report tool to measure anxiety symptoms. There are seven items, each of which is scored 0 to 3, providing a 0 to 21 severity score. Scores of 5, 10, and are taken as the cut-off points for mild, moderate and severe anxiety, respectively.[10]

SANUBARI

As explained earlier, a brief version of the program was used in this study. Instead of the regular weekly sessions over five weeks, patients in this study had the sessions twice, covering all five modules. The two OHP sessions lasted an hour each and were arranged a day apart. This shortened duration of the intervention during the current pandemic catered for study subjects and program facilitator who were unable to commit to the regular weekly sessions. The outline of the two OHP sessions is shown in Table I.

Table I: The Program Kesihatan Optimum (SANUBARI)

Session	Module	Session Outline
1.	Module 1: Optimal health	- Introduction to collaborative therapy in OHP - TOOL: Optimal health wheel - Reflection and exploration of one's satisfaction level within each health domains - Identify possible area for change
	Module 2: - I-CAN-DO Model	- TOOL: I-CAN-DO-MODEL - Identify one's strengths and vulnerabilities - Identify one's source of stress and how the stress may impact overall wellbeing - Identify and building one's own strategies to cope with stressors
2	Module 3: Factors on wellbeing	- TOOL: Eco-mapping - Identify collaborative partners and their roles in maintaining one's health
	Module 4: Collaborative partners; Visioning and goal setting	- TOOL: Timeline activity - Identify past events and its impact on health - Problem solving and setting SMARTER goals - Problem solving and setting SMARTER goals
	Module 5: Maintain well-being	- Stages of health: Optimal health(1), Suboptimal health(2) and Episode of illness(3) - TOOL: Health plans 1,2,3 - Building skills and strategies at different stages of health

Table II: Distribution of study subjects according to sociodemographic and clinical characteristics (n=37)

Characteristic	
Mean age (SD)	26.35 (8.567)
Gender, n (%)	
Male	23 (62.2)
Female	14 (37.8)
Ethnicity, n (%)	
Malay	29 (78.4)
Chinese	3 (8.1)
Indian	2 (5.4)
Others	3 (8.1)
Marital status, n (%)	
Single	28 (75.5)
Married	9 (24.3)
Educational level, n (%)	
Secondary	10 (27)
Tertiary	27 (73)
Employment status, n (%)	
Employed	10 (27)
Unemployed	27 (73)
Household income group, n (%)14	
B40 < RM4850	25 (67.6)
M40 RM4850 - 10959	10 (27.0)
T20 > RM10959	2 (5.4)
Comorbid chronic medical illness, n (%)	
Yes	4 (10.8)
No	33 (89.2)

n=frequency, %=percentage, SD=standard deviation

Table III: Comparison of mean GSE scores across 3-time points (pre-intervention, immediate post-intervention and one-month post-intervention)

GSE score	Mean (SD)	Mean difference (95% CI)	P value
Pre-intervention	29.78 (3.845	4.946 (3.361, 6.531)	<0.001
Immediate post-intervention	34.73 (2.883)		
Pre-intervention	29.78 (3.845)	3.297 (1.211, 5.348)	0.003
1 month post-intervention	33.08 (4.418)		
Immediate post-intervention	34.73 (2.883)	-1.649 (-3.396, 0.098)	0.064
1 month post-intervention	33.08 (4.418)		

GSE= General Self-efficacy, SD=Standard deviation, CI=Confidence Interval

All study subjects attended two OHP sessions via telecommunication method (video calls), facilitated by a psychiatrist trained as OHP facilitator. The sessions were done with the study subjects located in a designated room inside the quarantine ward to maintain privacy and confidentiality. Study subjects were provided with the OHP workbook and the necessary stationaries during the sessions.

Sample size calculation Formula

$$= \frac{\sigma^2 \left[Z_{1-\frac{\alpha}{2}} + Z_{1-\beta} \right]^2}{(\mu_1 - \mu_2)^2}$$

where n
- Z = level of confidence,
- σ = standard deviation,
- α = alpha,
- β = beta,

1. $\mu 1$ = mean in Time 1, and
2. $\mu 2$ = mean in Time 2.

= 0.532 [1.96 + 0.85]2 (2.9-3.2)
= 29 samples

Sample size estimation was calculated using two means formulae.[11] Prior data indicate that the mean GSF score prior to intervention was 2.9 (standard deviation = 0.53) and the mean of post-intervention expected from the expert opinion is 3.2 (standard deviation = 0.53).[12] Thus, a minimum sample size of 29 samples to reject the null hypothesis with probability (power) 0.8. The Type I error probability associated with this test of this null hypothesis is 0.05. The paired t-test statistic will be used to evaluate this null hypothesis. With an additional 20% dropout rate, the sample size is 37 samples.

Statistical analysis and ethical consideration

The data analysis was done using the SPSS (statistical package for social studies) statistical software. Descriptive data were presented in mean (SD) and frequency (%) unless otherwise stated. For comparison between 2-time points, paired t-test was used for the numerical outcome, and McNemars' test was used for the categorical outcome. Multivariate analysis using general linear models (GLM) repeated measures was performed to look for the association between studied variables (socio-demographic or clinical data) with the change in GSF scores over time from baseline to account for confounding factors. A value of $p<0.05$ with a confidence interval of 95% is considered statistically significant.

The study was conducted in compliance with the ethical principles outlined in the Declaration of Helsinki and Malaysian Good Clinical Practice Guidelines. Ethical approval was obtained from Malaysian Research Ethics Committee (MREC), and all relevant ethical boards before starting any study-related activities. Cases with significant psychological issue are referred to the psychiatric clinic for further management.

RESULTS

Of the 37 patients, male patients consisted of 62.2%. Most of the patients were single (75.5%), from the Malay ethnicity (78.4%) and received tertiary education (73%). Seventy-three per cent of the patients were unemployed during the study period. Most of the subject have no comorbid chronic medical illness (89.2%), and none has a comorbid psychiatric illness.

The mean GSE score pre-intervention was 29.78, whereas immediate post-intervention was 34.73 and a month post-intervention was 33.08. The comparison of the GSE score across 3-time points (pre-intervention, immediate post-intervention and a month post- intervention) done revealed statistically significant improvement as shown in Table III.

Multivariate analysis performed to look for the association between the socio-demographic or clinical data, depressive (PHQ-9) and anxiety (GAD-7) symptoms, and changes in GSE scores over three-time points did not reveal significant association.

DISCUSSION

This is the first study that has looked into the effect of a more structured psychosocial intervention, SANUBARI, Malay version of OHP, on COVID-19 patients during COVID-19 pandemic. It examines the effect of a brief version of OHP intervention in the self-efficacy of study subjects to deal with the current pandemic situation and also on depressive and anxiety symptoms of the study subjects.

Self-efficacy, the belief in our abilities in dealing with various situations, has a significant role in our lives. Perceived efficacy can affect behaviour in several ways. Individuals who steer clear of enriching activities and environments fail to develop their potentialities and shield their negative self-conceptions from corrective change.[13] Individuals with higher self-efficacy tend to view challenging conditions as only another task to be mastered. They tend to have a more heightened sense of commitment to their activities, and when they are faced with obstacles, they recover more quickly. In short, strong self-efficacy helps to protect oneself from psychological stress in times such as during this coronavirus pandemic.

The established preliminary findings in this study may create a path in planning future advanced research that may benefit the patients during a similar disease outbreak. This study had shown improvement in self-efficacy among those COVID-19 patients who participated in the intervention immediately and a month post-intervention. As the COVID-19 patients in the study were those from clinical category 1 or 2 (asymptomatic or have only mild symptoms with no pneumonic changes),[7] these changes in the GSE scores were likely not related to the patients COVID-19 disease condition. This finding could be due to patients having more insights on optimal health, their strengths and vulnerabilities, learned better coping strategies to deal with difficulties and stressful situations that increase their confidence in themselves.

This brief OHP intervention provided in teleconsultation has a potential use as an intervention for hospitalized COVID-19

patients. OHP can fill in the gap of care here to address patients with psychological distress. More staff can be trained to deliver OHP to cope with the increasing number of patients during this pandemic.

The slight decline in mean total GSE score (not statistically significant) a month post-intervention compared to immediate post-intervention can be explained by the fact that knowledge acquired may be liable to forgotten over time if there's no continuous practice or applicability in daily life. With this finding, it will be helpful to provide a booster OHP session, which may be a month after intervention, for patients to maintain a positive outcome. In the booster session, patients can reflect on the application of knowledge and skills learnt or practised. Also, to review health plans and discuss possible barriers or strategies to improve wellbeing.

Some of the limitations in the current study are that the sampling was limited to two centres where patients may be characteristically different from other parts of Malaysia. There are also other confounders in examining self-efficacy not looked into due to the constraint of various resources. The confounders that were likely to affect the measurement included perceived social support, premorbid personality, coping skills, and life events.

CONCLUSION

Optimal health is a holistic approach to health. The coronavirus pandemic has affected all aspects of our health. In times like this, an early focus on mental wellbeing is critical, and actions to achieve and maintain optimal health should begin. COVID-19 patients in this study improved on their levels of self-efficacy after the brief virtual version of OHP intervention and the improved level of self-efficacy is maintained a month after the intervention, protecting themselves from psychological stress and ultimately enhances wellbeing during this coronavirus pandemic.

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