Effectiveness of A Short Psychoeducational Intervention on Patients with Schizophrenia in Obafemi Awolowo University Teaching Hospital Ile-Ife, Nigeria

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ABSTRACT

Mindfulness-based intervention (MBI) have demonstrated encouraging therapeutic outcomes in a small number of studies, the majority of which took place in industrialized nations. Its psychoeducation has been found to counteract stigma and assist patients to take added responsibility for their own being and thus live more meaningful lives. Despite these benefits, studies assessing the relative benefit of psycho-education to schizophrenic patients in the tertiary health care system in Nigeria are scarce. This study aims to explore the effectiveness psychoeducation in improving significantly the mental health, social functioning, social acceptability, community living skills, and work skills of patients with schizophrenia in a tertiary care context. The study employed a one-group pretest-posttest design. A group of 23 persons were exposed to a 2-hourly, 8-session Mindfulness-based psychoeducation program at the psychiatric wards of OAUTHC, Ile-Ife. The participants were screened and responded to the Social Support Questionnaire, Insight, and Treatment Attitudes Questionnaire (ITAQ). Data was analyzed using a t-test for repeated measures at p = .05 level of significance. Findings showed that the average age of the participants was 34.70 years (SD = 11.44), with the average duration of illness being 3.7 years (SD = 2.7 years) and 2.3 years (SD = 1.6 years) hospitalization rates. Also, insight, social functioning, social acceptability, community living skills, and work skills significantly improved after exposure to mindfulness and insight psycho-education. Therefore, it is recommended that this strategy might be used to manage and lessen the psychological problems experienced by individuals with schizophrenia.

INTRODUCTION

There is around one percent (1%) of the population that suffers from schizophrenia, making it a common psychiatric illness. The condition is generally long-term and can impact behaviour, thoughts, mood, and functionality. Upward of 26 million people suffer from schizophrenia, according to the WHO (2019). As a result, the huge number of people who suffer from

schizophrenia implies the existence of a public health issue. Its characteristic symptoms include delusions, hallucinations, and bizarre behaviors, as well as apathy, social withdrawal, and lack of pleasure (Cruz et al., 2020). There are also frequent mood swings and difficulties in thinking. Schizophrenia is frequently referred to as a psychotic illness because of the symptoms that show a lack of contact with reality (WHO, 2019). Schizophrenia generally begins in childhood. Schizophrenia results in psychological and social impairments. The general population has a 1% lifetime prevalence of schizophrenia, with men being more likely than women to be affected (Cruz et al., 2020; WHO, 2019). However, the situation differs greatly depending on the country. Given the sheer number of individuals in need and the humanitarian responsibility to alleviate suffering, it is important that scalable mental health interventions be implemented immediately to address this problem. Schizophrenia therapy entails a variety of approaches aimed at reducing the disease's symptoms (Cruz, Almeida & Dolabela, 2020). Individual or group psychotherapy can be used in conjunction with antipsychotic medication as a therapeutic base. Incorporating psychotherapy attempts to enhance social interactions, communication, the stabilisation of affective processes and thinking and aids in the management of the condition. If the patient has serious symptoms that impair judgement, cleanliness, safety, nourishment, etc., the final option is hospitalisation (Cruz et al., 2020). While Drug therapy is the primary choice for mental illnesses to relieve the principal symptoms, many antipsychotics lead to poor life quality and unpleasant side effects. As a result, physicians have resorted to supplementary therapies to help clients with mental disorders (Cruz et al., 2020; Hu et al., 2021). Drug therapy alone is not sufficient in the management of schizophrenia (Cruz et al., 2020; Hu et al., 2021; Kavak, 2018). Thus, In the treatment of schizophrenia, drug therapy alone is insufficient (Cruz et al., 2020; Hu et al., 2021; Kavak, 2018). Thus, in combination to patient medication, psychosocial skills training, cognitive treatments, music therapy, art therapy, and yoga are used (Cruz et al., 2020; Hu et al., 2021; Kavak, 2018). The goal of treating illness is to alleviate the symptoms of the underlying disease while still allowing the population to function freely (Cruz, Almeida & Dolabela, 2020). In conjunction with clinical prescription, psycho - social skill building, behavioral treatments, music therapy, art therapy, and meditation are used (Cruz et al., 2020; Hu et al., 2021; Kavak, 2018). The goal of treating the patients is to alleviate the symptoms of the underlying medical conditions while still allowing the clients function within the society (Cruz, Almeida & Dolabela, 2020). Psychoeducation is an educational strategy that aims to provide families with psychiatrically sick

people with the knowledge and training they need to collaborate with therapists as part of a broader therapeutic care plan for their ill relatives. Psychosocial interventions have proven as an efficient therapeutic option that can greatly enhance a person's understanding of the underlying disorders, guaranteeing full involvement in treatment both for patients and caregivers, and make psychiatric treatment appropriate for people with mental health problems and their caretakers (Chien & Thompson, 2014). The basic goals of psychoeducation are as follows: presenting information about new aspects of illness, signs, symptomatology, direction, consequence, and progression; debunking misinformation and general ignorance; assisting individuals with information concerning rules and etiquette when caring for their affected relatives or how to interact socially, conduct, and engage with the client; therapeutic alternatives; adverse effects of medicine and other physiological interventions; supporting individuals in identifying early warning signals of sickness recurrence. Psychoeducation is now considered an important part of comprehensive schizophrenia treatment and should be delivered to all patients (Aho-Mustonen et al., 2011; Chien & Thompson, 2014). The core principle of psycho - educational intervention is that everyone has the right to learn regarding the disease and treatment so that they may participate effectively in their care rather than being a passive recipient. It has also been claimed that a comprehensive psycho - educational program can be used as a buffering mechanism, aiding individuals in building on their present strengths and fostering positivity in developing a better self – identity (Aho-Mustonen et al., 2011). Psychoeducation has been used effectively for schizophrenia since the late 1970s; clients' psychoeducational needs are also receiving more attention. Meta-analyses of previous studies on psychoeducation show that it is effective for schizophrenia when families are engaged, but so little proof of its efficacy for clients has been offered. Many studies on patient psychoeducation have found that educational interventions are effective in individuals' knowledge and cognition, along with their adherence (Aho-Mustonen et al., 2011; Chien & Thompson, 2014). Psychoeducation is one of the most effective evidence-based practises used in conjunction with drug and psychotherapy therapy in Nigeria (Ayeni et al., 2020; Onyemaechi et al., 2018). Due to the obvious model's adaptability, that also includes both illness-specific information and tools for addressing associated conditions, psychoeducation has been widely used in Nigeria to treat a wide range of illnesses and existential dilemmas; however, it has received little attention in Nigerian psychology literature (Agara & Onibi, 2007; Ayeni et al., 2020; Onyemaechi et al., 2018). Psychoeducational programmes were created to increase

conformance to drug therapy by lessening cognitive distortions about drugs and their adverse reactions, increasing tolerance to the unavoidable and undesirable effects, and boosting coping mechanisms and problem-solving skills that help deal with the disorder's daily issues (Agara & Onibi, 2007; Ayeni et al., 2020; Onyemaechi et al., 2018). These psychoeducational programmes were typically used in conjunction with psychotherapies (for example, family psychoeducation, culturally appropriate group psychotherapy, and rational emotive therapy) (Agara & Onibi, 2007; Ayeni et al., 2020; Onyemaechi et al., 2018). The mindfulness psychotherapy intervention programme coupled with psychoeducation has been demonstrated to be far more successful in the treatment of schizophrenia (Langer et al., 2017; Keng, Smoski & Robins, 2011; Lam et al., 2020; Chien et al., 2017). Nevertheless, the effectiveness or clinical trials have not been conducted in Nigeria.

Mindfulness psycho-education groups have been shown to benefit schizophrenia patients by improving their knowledge of and living with the condition, as well as medication adherence and relapse prevention. Mindfulness Psychoeducational programmes have been shown to be more successful in reaching the desired goal of including psychoeducation within a complete treatment programme for schizophrenia patients (Chien et al., 2019). Mindfulness is defined as a state of consciousness that results from paying attention to the current moment without judgement. It gradually draws the attention away from the unpleasant feelings brought on by the gap between anticipation and actuality by concentrating on the current moment rather than worrying about the future or lamenting the past. It is a patient-empowering and insight-enhancing strategy that has been shown to benefit schizophrenia patients (Lam et al., 2020). Mindfulness-based programmes is one of few therapies that focus on increasing an individual's self-awareness and acceptance, as well as changing negative thoughts, emotions, and sentiments regarding a disease and accompanying discomfort (Chien et al., 2019). A mindfulness-based intervention programme has demonstrated beneficial results by increasing concentrated attention on feelings and perceptions, improving acceptance, retention, and letting go of sickness experiences, and improving self-empowerment and emotional control about illness management. It has also been reported to be beneficial for individuals with early-stage schizophrenia who must deal with persistent psychiatric problems and associated depressed mood (Chien et al, 2017; Chien et al., 2019). It has produced complementary and synergistic effects that improve patients' cognitive,

informational, and behavioural readiness to be cognizant of or recognise his\her disorder symptoms, and will then gain knowledge, choose, and implement appropriate techniques to manage their psychotic episodes by paying attention to the symptoms in a distinct and insightful manner (Chien et al., 2017). It has been shown to be more effective since it avoids the psychological obstacles of engagement and long-term compliance associated with community-based psychosocial intervention for individuals with schizophrenia (Chien et al., 2017). These low treatment commitment and adherence rates were credited to schizophrenic patients' low illness acceptance and insight, distress over psychotic symptoms, insufficient self-empowerment for illness management, poor volition and ability to focus, and/or complete disinterest in long-term psychosocial intervention (Chien et al., 2017; Lam et al., 2020). Thus, the introduction of mindfulness psycho-education is expected to bring up to speed the patients to a desired level of knowledge and information, which can be helpful in the management of the illness among patients. In clinical trial conducted in Nigeria, Musa et al. (2021) found that following MBCT, the group demonstrated lower scores on the SDS and BDI-II variables by lowering depressed symptoms and impairments. The study individuals' level of depression and intellectual disability significantly decline. The greatest impact was seen in increased intellectual functioning. The study demonstrated that depressed intellectual disabled persons benefitted immensely from MBCT group intervention before and after a 2-month follow-up (Musa et al., 2021).

Theoretically, mindfulness practise is profoundly ingrained in oriental meditative practices (Kabat-Zinn, 1994). Mindfulness has risen in importance in the Developed world over the last few years as a scientific and rehabilitative practise in self-awareness (Kabat-Zinn, 1994; Khanna & Greeson, 2013). Mostly because to the research of Kabat-Zinn, who pioneered mindfulness into clinical psychology and psychotherapy separate from Buddhist religious ties. Various definitions of mindfulness were presented in recent times, generally reflecting a tendency to either separate or align current mindfulness-based treatments (MBIs) from its Buddhism and religious foundations (Kabat-Zinn, 1994; Khanna & Greeson, 2013; Shonin & Van Gordon, 2016; Yılmaz & Kavak, 2018). According to Kabat-Zinn, mindfulness is the act of "adhering in a specific way: on purpose, in the present moment, and non-judgmentally" (1994). Mindfulness was specified as both awareness and focused attention to present-moment sensations and thoughts with a nonjudgmental attitude (Shonin & Van Gordon, 2016; Yılmaz & Kavak, 2018). It allows for the investigation of subjective experience with tranquility and without reactivity. A schizophrenic

patient who has undergone MBI is willing to embrace aberrant ideas and thoughts without judgement (Shonin & Van Gordon, 2016; Yılmaz & Kavak, 2018). Despite these benefits amassing from the introduction of Mindfulness based cognitive psycho-education intervention, studies assessing the relative benefit of this cognitive based psychotherapy in relation to schizophrenic patients in the tertiary health care system in Nigeria is scarce. Chien et al. (2019) has identified that optimistic findings on MBPP call for more multi-center randomised controlled studies to investigate the therapeutic effects of employing MBPP as an intervention in a broader range of schizophrenia patients. It is also critical to investigate the comparative efficacy of different psychosocial therapies, as well as their long-term impact on schizophrenia. To the knowledge of the investigators, no current or past literature has addressed the efficacy of Mindfulness based therapies in the Management of schizophrenia patients in clinical settings in Nigeria. Thus, the focus of the present study is to investigate the feasibility, effectiveness, and patient experiences of group psychoeducation for psychiatric patients with schizophrenia in a tertiary care.

Objectives:

1. Investigate the level of mindfulness and insight before and after exposure to mindfulness psycho-social program among schizophrenic patients who are inpatients in the psychiatric wards of OAUTHC, Ile-Ife.
2. Examined if mindfulness psycho-educational program significantly enhanced the: mental health, social functioning, social acceptability, community living skills, and work skills among schizophrenia patients who are inpatients in the psychiatric wards of OAUTHC, Ile-Ife.

Research Questions

1: Would the level of mindfulness and insight before and after exposure to mindfulness psycho-social program among schizophrenia patients change?

2: Whether psycho-educational intervention based on mindfulness and insight will significantly enhance the mental health, social functioning, social acceptability, community living skills, and work skills of schizophrenia patients?

METHOD

Setting: The study took place at the Psychiatric ward of OAUTHC, Ile-Ife. The choice is based on the availability of a comfortable and therapeutic environment, cooperation of the medical staff and guarantee of no intrusion in the study procedure. Ethical approval was granted by LAUTECH Teaching Hospital ethical board with approval no LTH/REC/2012/11/21/12.

Participants: Respondents in the study were selected from the population of hospitalized patients diagnosed with schizophrenia related disorder who met the inclusion criteria.

Inclusion – criteria- The participants:

(a) Must have been screened and being rehabilitated for schizophrenia with no comorbidities.
(b) Indicates their willingness to participate in psycho-education intervention
(c) Sign participant (consent) form after reading through

Exclusion Criteria: Participants did not have

(a) Additional serious psychiatric diagnosis i.e. diagnosis of mental illness apart from schizophrenia.
(b) Untreated eye defect and acoustic disability
(c) Poor physical health due to terminal or debilitating disease with considerable reduction of dexterity

Instrument

Demographic data with 10 items tapping the personal data of the participants such as age, sex, marital status e.t.c. Also, frequency and duration of readmissions to psychiatric hospital over the previous 6 or 12 months. Thompson, Buckley, and Meltzer's (1994) 18-item brief psychiatric rating scale (BPRS) has been extensively used in clinical evaluation and academia to quantify the intensity of psychotic features. The items were evaluated using a seven-point Likert scale (0, not assessed; 1, not present; 6, extremely severe). The BPRS demonstrated acceptable content validity, interobserver reliability (ICC = 0.89), and composite reliability (Cronbach's a = 0.85). (Thompson, Buckley & Meltzer, 1994). The 43-item specific levels of functioning scale (SLOF)

established by Bowie et al., (2007) was uti,ised in assessing clients' psychosocial functioning and includes 3 components for individuals with schizophrenia: self-maintenance (12 items), social functioning (14 items), and community living skills (17 items). In individuals with schizophrenia, the variant adopted in this research demonstrated good content validity, test-retest reliability (Pearson's r=0.79), and internal consistency (Cronbach's a =0.90-0.96 for subscales) (Bowie et al., 2007). Sarason et al(1987) .'s Social Support Questionnaire – 6 items (SSQ-6) was used to assess individual patient's satisfaction with the social support offered in his or her local social context. The items are scored on a six-point Likert scale, with a higher overall score (range 0-6) signifying greater satisfaction with available social support. The scale has acceptable content validity and internal consistency (Cronbach's a=0.89-093). (Sarason et al., 1987).McEvoy et al. (1989) created the 11-item Insight and Treatment Attitudes Questionnaire (ITAQ) to assess patients' knowledge of and insight into disease, as well as their need for therapy in schizophrenia. Its items are scored using a three-point Likert scale (0, no insight; 1, partial insight; and 2, good insight). The higher the score, the better the patient's understanding of illness-related issues and desire to undergo therapy. Internal consistency (Cronbach's a=0.82), interrater reliability (ICC=0.82), and correlation (Pearson's r=0.56 and 0.60, P=0.0001) for symptom intensity and psychopathology were all excellent in this edition.

Procedure

Participants are schizophrenia patients admitted to the psychiatric ward for treatment were screened to participate in the study. Patients who scored one standard deviation above the mean on the screening tools (BPRS and ITAQ) and were interested in participating in the study were recruited after due consultations A second screening was carried out before the commencement of the study. This was regarded as the baseline data. Based on the screening results only 23 willing participants met the inclusion criteria. They were guided through the informed consent process.

The researcher then scheduled appointments for the participants where psycho-educational sessions were implemented.

Baseline Screening

A clinical assessment to ascertain the diagnosis of schizophrenia was carried out by the psychiatrist. Following the screening, socio-demographic and baseline data were collected from all consenting participants in this study. The participants participated in a mindfulness-based psychoeducation program alongside the conventional treatment for schizophrenia for four weeks.

The Mindfulness training designed by Lam et al. (2021) for schizophrenia patients was adapted in the study. The program's goal was to increase individuals' acceptance and control of their very own ideas and feelings within their social background. To do this, the program included a few tactics that addressed contemporary African cultural precepts. The first phase focused on participants' comprehension, interconnectedness, group solidarity, and problem-solving abilities. In the second and third phases, patients were taught to respond to difficulties and impulses in an open, accepting manner, as well as to develop a "decentered" attitude toward their thoughts and feelings (recognizing that the founded beliefs and practices are only one of numerous possible meanings). The resolution of strong sense of self (for example, keeping up appearances and self-image rebuilding) was strengthened. Before administering the posttest questionnaire, the individuals were subjected to a total of eight sessions.

Psycho-educational Intervention Modules

All participants in the experimental group of this study were involved in Psycho-educational intervention. Mindfulness-based Psychoeducation is a twice weekly 2-hour program. The therapist receiving adequate in becoming more mindful of and relating to their ideas, perceptions, and experiences, such as delusions and hallucinations, in a way that is different from identifying with them as realistic displays of fact. The program was made up of various parts. Orientation and engagement, empowerment and concentrated awareness of experienced physical sensations and ideas, as well as guided awareness exercises and homework activities, are all part of this. Individual respondents were asked to apply deliberate and focused awareness of body sensations, thoughts and feelings, and mindful strolling on a routine (daily) basis in the initial stages, and to

choose a self-empowering and constructive perspective for dealing with negative or uncomfortable feelings and emotions in the later phases. The sessions were carried out in the following phases:

Screening and engagement (Session I, Week I):

1. An assessment was conducted to determine the patient's suitability for participation in psychoeducational therapy.

2. A second assessment was used as the baseline data was collected from the participants.

Phase 1, Session 2 (Week 1I):

1. The researcher established rapport with the participants.
2. Discussed the benefits of treatment adherence on participants' health condition.
3. Understanding, interdependence, mutual support, and problem-solving among group members

Phase 2, Session 2 (Week 1II):

Education about schizophrenia care, intentional exploration and resolution of symptoms and problem-solving practices

Phase 3, Session 3 (Week 1V):

Relapse prevention techniques, communal support services, and long-term objectives are all practiced behaviorally.

*Post-Test***:** It was carried out two weeks after the experiment had been concluded. Participants were assessed on the various independent and dependent measures.

Design and Statistics

The study employed a one-group pretest-posttest design with multiple pretest. The research was implemented owing to the limited number of volunteers and the hospital's commitment not to leave any patients without assistance. This study design has the benefit of being straightforward to perform, and the findings may typically be estimated using basic analyses (i.e., most often a dependent t-test) (Allen, 2017). Participants were screened or assessed before exposure to the therapy. The questionnaires were administered at T1a(Assessment) and T1b

(Baseline) and T2 (Posttest). This study's data was analysed using both descriptive and inferential statistical approaches. Frequency counts, percentages, mean and standard deviation. The paired-samples t-test was used in this investigation with a statistical significance of $p< 0.05$.

Results

Table1: Socio-demographic characteristics of Patients (n = 23)

Variables	Response category	Frequency	Percent	$\bar{x}$	S.D
Age	15-25 Years	7	30.4	34.70	11.44
	26-35 Years	5	21.7		
	36-45 years	6	26.1		
	46-55 Years	5	21.7		
Duration of illness	1-5 Years	17	73.9	3.57	2.71
	6-10 Years	6	26.1		
Number of hospitalizations	1 - 2 times	14	60.9	2.26	1.54
	3 - 4 times	6	26.1		
	5 - 6 times	3	13.0		
sex	Male	12	52.2		
	Female	11	47.8		
Marital status	Single	10	43.5		
	Married	13	56.5		
Religious affiliation	Christianity	21	91.3		
	Islam	2	8.7		
Occupation	Civil servant	3	13.0		
	Unemployment	2	8.7		
	Student	7	30.4		
	Teacher	2	8.7		
	Trading	5	21.7		
	Business	2	8.7		
	Self-employment	2	8.7		
	H.N.D	6	26.1		
	B.Sc/B.ED	5	21.7		
Educational attainment	Undergraduate	7	30.4		
	SSCE	1	4.3		
	OND	3	13.0		
	NCE	1	4.3		
	Total	23	100.0		

Table 1 shows that the average age was 34.70 years (S.D = 11.44); 7 (30.4%) and their ages ranged from 15–25 years; 5 (21.7%) were within the ages of 26–35 years, 6 (26.1%) were at the ages of 36–45 years, and 5 (21.7%) were between 46–55 years of age. The average duration of illness was 3.57 years (S.D = 2.71) years. A larger percentage of the participants (17, 73.9%) reported illness duration between 1–5 years, while 6 (26.1%) reported a range of 6–10 years. For

the average rate of hospitalization rates, the mean number of times on admission was 2.26 times (S.D = 1.54). More than half (14, 60.9%) reported 1-2 hospitalizations, 26.1% reported 3-4 hospitalizations, and 13.0% reported 5-6 hospitalizations. More than half were (52.2%) were males, and 47.8% were females. Most of the patients enrolled (56.5%) were married while the singles amongst them were 43.5%. The participants were mostly (91.3%) Christians and 8.7% were Muslims. In terms of occupational and job status of the participants; some the respondents were civil servants (3.0%), teachers (8.7%), traders (21.7%), employee in private business organisation (8.7%) and self-employed (8.7%).In addition, 8.7% were unemployed and 30.4% were students. The educational qualification of the respondents include Higher National Diploma (HND) (26.1%), Bachelors of Science or Bachelors of Education degrees (B.SC or /B.ED) (21.7%), Senior Secondary School Certificate (SSCE) (4.3%), Ordinary National Diploma (OND) (13.0%) and National Certificate in Education (NCE) (4.3%) while 30.4% were undergraduates.

Research question 1: Would the level of mindfulness and insight before and after exposure to mindfulness psycho-social program among schizophrenia patients change? This research question was determined using t-test for repeated measures. The result is displayed in Table 2:

Table 2: t-test for repeated measures showing the effect of intervention on insight

	Mean	SD	Mean diff.	t	df	Sig.	95% Cl	
Pretest	11.56	1.20						
			5.78	29.15	22	.000	-6.19	-5.37
Posttest	17.35	1.40						

The results show that the patients' insight and mindfulness was significantly improved after exposure to MBI program. Level of insight at pretest (*M*= 11.56, *SD* = 1.20) improved at posttest (*M*= 17.35, *SD* = 1.40) (mean diff = 5.78), and this was significant (t (22) = 29.15, p = 0.00). Insight and mindfulness among schizophrenia patients significantly improve after 4 weeks exposure to mindfulness psychoeducational program.

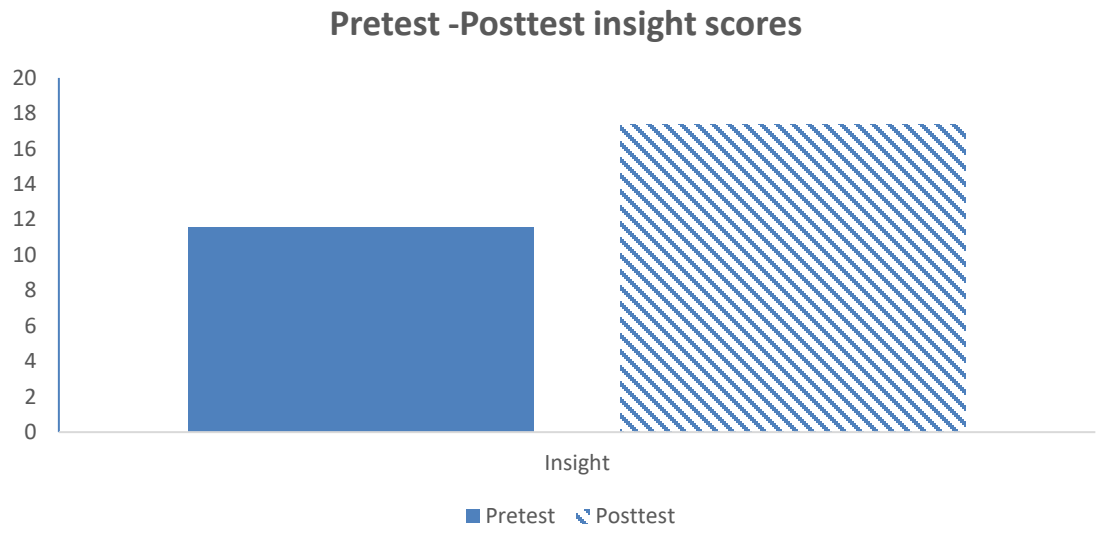

Fig 1: showing the pretest and posttest scores in Insight and mindfulness among schizophrenia patients after 4 weeks exposure to mindfulness psychoeducational program.

Research question 2: Whether psycho-educational intervention based on mindfulness and insight will significantly enhance the mental health, social functioning, social acceptability, community living skills, and work skills of schizophrenia patients?

Table 2: t-test for repeated measures showing the effect of intervention on mental health and social skills

	Pretest	Posttest	Mean Difference	t	*df*	sig
Mental health	15.26±3.86	16.70±0.97	-1.43	-1.86	22	0.08
Social functioning	25.74±5.43	34.13±2.07	-8.39	-6.77	22	0.00
Social acceptability	22.43±5.37	29.91±0.42	-7.48	-6.87	22	0.00
Community living skills	51.17±3.31	54.22±1.35	-3.04	-3.92	22	0.00
Work skills	30.43±3.00	35.00±0.00	-4.57	-7.30	22	0.00

The results show that the patients' mental health status at pretest (*M*= 15.26, *SD* = 3.86) improved at posttest (mean diff = -1.43), but this was not significant (t (22) = -1.86, p = 0.08). Results also demonstrated that social functioning, social acceptability, community living skills, and work skills significantly improved after exposure to mindfulness and insight psycho-education. The patients' social functioning at pretest *(M= 25.47, SD = 5.43)* improved at posttest *(M= 34.13, SD*

= 2.07) (mean diff = -8.39), which was significant at t(22*) = -6.77, p = 0.00.* Also, social acceptability at pretest (*M*= 22.43, *SD* = 5.37) improved at posttest (*M*= 29.91, *SD* = 0.42) for the patients (*mean diff* = -7.48) and this was significant at *t (22) = -6.87, p = 0.00.* Furthermore, community living skills at pretest (= 51.17, *SD* = 3.31) improved at posttest (*M*= 54.22, *SD* = 1.35) for the patients (*mean diff* =-3.04) and this was significant (*t (22) =-3.927, p = 0.00).* Finally, the patients' work skills at pretest *(M= 30.43, SD = 3.00)* improved at posttest *(M= 35.00, SD = 0.00) (mean diff = -4.57),* which was significant at *t(22) = -7.30, p = 0.00.* The results demonstrated that mindfulness psycho-education significantly enhanced the mental health, social functioning, social acceptability, community living skills, and work skills of schizophrenia patients.

DISCUSSION

This study yielded encouraging results, adding to the body of information about the effects of mindfulness psychoeducation on symptoms of schizophrenia. The study's results indicated that mindfulness and insight improved with exposure to the Mindfulness Based Psychological Programme. Psycho-education enhanced the mental health, social functioning, social acceptability, community living skills, and work skills of schizophrenia patients, which is consistent with the conclusions of The findings are in agreement with Chien et al. (2019) who demonstrated that MBPP is possible and acceptable to schizophrenia Individuals in various settings benefit from it in terms of cognitive reappraisal, rumination, reduced depressive symptoms, and hallucinatory intensity. The findings are in line with According to Lam and Chien (2016), mindfulness meditation lowers the negative emotions, pain, and many chronic conditions. In schizophrenia patients, mindfulness training improves psychological health, increases pleasant emotions, and decreases negative symptoms. Mindfulness-based cognitive therapy shows promise as a preventative care therapy in patients battling with depressive disorders, specifically those with more acute residual symptoms, according to Kuyken and colleagues (2016). Recommendations are provided for future studies to resolve lingering issues and increase the field's rigor. The findings also agree with findings from Musa et al. (2021) which demonstrated the efficacy of Mindfulness program on depressive symptoms and intellectual disorder among disabled patients. Hodann-Caudevilla et al., (2020) review indicated that MBIs are efficacious in the management of people with schizophrenia spectrum disorders being used as an adjuvant to

Treatment as usual (TAU) and that they it may become one of the preferred psychosocial approaches to treating people with psychosis in the near future.

Conclusion

The study's findings revealed that psycho-education coupled with Mindfulness-based psychotherapy improved the mental health, social functioning, social acceptability, community living abilities, and work skills of schizophrenia patients. Reflecting on the experiences of the participants, there is proof that in-patients with schizophrenia react to psychoeducation built in mindfulness theoretical frameworks. Notably, there was no indication of deterioration or decompensation of psychiatric problems after MBIs. Overall, participants reported positive emotional and metacognitive effects, as well as an increase in patients' psychosocial well-being. As a result, this strategy might be used to treat and prevent relapse, increase medication adherence, and provide insight to schizophrenia patients, resulting in improved mental health, social functioning, social acceptability, community living skills, and employment abilities.

Limitations and suggestions

Some constraints should be considered. Because individuals with schizophrenia often experience a high level of suspicion and paranoia as signs and symptoms. Furthermore, while preliminary proof shows for the appropriateness and viability of Mindfulness Behavioral interventions. In addition, because of the nature of this study, applicability was evaluated in a confined environment. Future research should try to evaluate the possible application, practicality, and acceptability in mindfulness in diverse hospital settings to test for broader applicability. Furthermore, future study will require control conditions in order to clearly differentiate outcomes. However, it is clear that the scientific proof currently available is limited; therefore, future investigations should improve and meet methodological quality standards by increasing sample sizes in order to increase the prospective validity of results so as to be able to obtain reasonable conclusions on the efficacy of MBIs. Thus far, these results are promising. A disadvantage of this research is that shorter period of therapy and thus future studies should the length of period of the therapy.

REFERENCES

Agara, A. J., & Onibi, O. E. (2007). Effects of group psychoeducation (GPE) on compliance with scheduled clinic appointments in a neuro-psychiatric hospital in southwest Nigeria: a randomised control trial (RCT). *Annals of the Academy of Medicine, Singapore*, *36*(4), 272–275.

Aho-Mustonen, K., Tiihonen, J., Repo-Tiihonen, E., Ryynänen, O. P., Miettinen, R., & Räty, H. (2011). Group psychoeducation for long-term offender patients with schizophrenia: an exploratory randomised controlled trial. *Criminal behaviour and mental health*, *21*(3), 163–176. https://doi.org/10.1002/cbm.788

Aho-Mustonen, Kati, Miettinen, Raili, Koivisto, Hanna, Timonen, Tero, & Räty, Hannu. (2008). Group psychoeducation for forensic and dangerous non-forensic long-term patients with schizophrenia: A pilot study. *The European Journal of Psychiatry*, *22*(2), 84-92.

Allen, M. (2017). *The sage encyclopedia of communication research methods* (Vols. 1-4). Thousand Oaks, CA: SAGE Publications, Inc doi: 10.4135/9781483381411

Ayeni, B.A; Ayeni, A.R., Abiodun, O.O, & Ahmed, A. E. (2020) Therapeutic Efficacy of Family Psycho-Education in Reducing Syndrome Severity among Schizophrenic Patients in Neuro-Psychiatric Specialist Hospital, Ondo State. *International Journal of Research and Scientific Innovation* (IJRSI), 7 (10), 39-44.

Bowie, C. R., Twamley, E. W., Anderson, H., Halpern, B., Patterson, T. L., & Harvey, P. D. (2007). Self-assessment of functional status in schizophrenia. *Journal of psychiatric research*, *41*(12), 1012–1018. https://doi.org/10.1016/j.jpsychires.2006.08.003

Chien, W. T., & Thompson, D. R. (2014). Effects of a mindfulness-based psychoeducation programme for Chinese patients with schizophrenia: 2-year follow-up. *British Journal of Psychiatry, 205(01), 52–59.* doi:10.1192/bjp.bp.113.13463

Chien, W. T., Bressington, D., Yip, A., & Karatzias, T. (2017). An international multi-site, randomized controlled trial of a mindfulness-based psychoeducation group programme for people with schizophrenia. *Psychological medicine*, *47*(12), 2081–2096. https://doi.org/10.1017/S0033291717000526

Chien, W. T., Cheng, H. Y., McMaster, T. W., Yip, A., & Wong, J. (2019). Effectiveness of a mindfulness-based psychoeducation group programme for early-stage schizophrenia: An 18-month randomised controlled trial. *Schizophrenia research*, *212*, 140–149. https://doi.org/10.1016/j.schres.2019.07.053

Cruz, L.O., Almeida, M.K.C. & Dolabela, M.F. (2020) Contributions of complementary therapies and other strategies to the treatment of schizophrenia: an integrative review. *Research, Society and Development*, 9, (11), e76791110376, DOI: http://dx.doi.org/10.33448/rsd-v9i11.10376.

Fleury, M.J., Grenier, G., Bamvita, J.M., Perreault, M., & Caron, J. (2012) Determinants associated with the utilization of primary and specialized mental health services. *Psychiatry Quarterly*, 83: 41-51.

Hodann-Caudevilla, R. M., Díaz-Silveira, C., Burgos-Julián, F. A., & Santed, M. A. (2020). Mindfulness-Based Interventions for People with Schizophrenia: A Systematic Review and Meta-Analysis. *International journal of environmental research and public health*, *17*(13), 4690. https://doi.org/10.3390/ijerph17134690

Hu J, Zhang J, Hu L, Yu H and Xu J (2021) Art Therapy: A Complementary Treatment for Mental Disorders. *Frontier Psychology,* 12:686005. doi: 10.3389/fpsyg.2021.686005

Kavak, F. (2018). Determination of Adherence to Treatment of Schizophrenia Patients in Turkey. *Annals of Clinical and Laboratory Research, 06(02).* doi:10.21767/2386-5180.100234.

Keng, S. L., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: a review of empirical studies. *Clinical psychology review*, *31*(6), 1041–1056. https://doi.org/10.1016/j.cpr.2011.04.006

Kuyken, W., Warren, F. C., Taylor, R. S., Whalley, B., Crane, C., Bondolfi, G., Hayes, R., Huijbers, M., Ma, H., Schweizer, S., Segal, Z., Speckens, A., Teasdale, J. D., Van Heeringen, K., Williams, M., Byford, S., Byng, R., & Dalgleish, T. (2016). Efficacy of Mindfulness-Based Cognitive Therapy in Prevention of Depressive Relapse: An Individual Patient Data Meta-analysis From Randomized Trials. *JAMA psychiatry*, *73*(6), 565–574. https://doi.org/10.1001/jamapsychiatry.2016.0076

Lam, A. & Chien, W.T. (2016) The effectiveness of mindfulness-based intervention for people with schizophrenia*: A* systematic review. *Neuropsychiatry*, 6(5),208-222.

Lam, A. H.O., Leung, S.F. & Chien, W.T. (2021) Mindfulness-based psychoeducation for schizophrenia spectrum disorders: a qualitative analysis of participants' experiences, *Contemporary Nurse*, DOI: 10.1080/10376178.2021.1994864

Lam, A. H. Y., Leung, S. F., Lin, J. J., & Chien, W. T. (2020). The Effectiveness of a Mindfulness-Based Psychoeducation Programme for Emotional Regulation in Individuals with Schizophrenia Spectrum Disorders: A Pilot Randomised Controlled Trial. *Neuropsychiatric Disease and Treatment, 16, 729–747.* doi:10.2147/ndt.s231877 .

Langer, Á. I., Schmidt, C., Mayol, R., Díaz, M., Lecaros, J., Krogh, E., … Gaspar, P. A. (2017). The effect of a mindfulness-based intervention in cognitive functions and psychological well-being applied as an early intervention in schizophrenia and high-risk mental state in a Chilean sample: study protocol for a randomized controlled trial. *Trials, 18(1).* doi:10.1186/s13063-017-1967-7

Lukens, E. P., & McFarlane, W. R. (2006). Psychoeducation as Evidence-Based Practice: Considerations for Practice, Research, and Policy. In A. R. Roberts & K. R. Yeager (Eds.), *Foundations of evidence-based social work practice*. Oxford University Press. pp. 291–313

McEvoy, J. P., Apperson, L. J., Appelbaum, P. S., Ortlip, P., Brecosky, J., Hammill, K., Geller, J. L., & Roth, L. (1989). Insight in schizophrenia. Its relationship to acute psychopathology. *The Journal of nervous and mental disease*, *177*(1), 43–47. https://doi.org/10.1097/00005053-198901000-00007.

Musa, Z. A., Soh, K. L., Mukhtar, F., Soh, K. Y., Oladele, T. O., & Soh, K. G. (2021). Effectiveness of mindfulness-based cognitive therapy among depressed individuals with disabilities in Nigeria: A randomized controlled trial. *Psychiatry Research, 296, 113680.* doi:10.1016/j.psychres.2020.113

Mwansisya, T., Wang, Z., Yang, B., Li, L. & Wang, P. (2013) Comparison of Psychosocial Determinants in Inpatients with First-Episode and Chronic Schizophrenia in China. *Archives of Psychiatric Nursing*, 27(1): 32-41.

Norman R, Malla A, McLean T., Voruganti L, Cortese L, McIntosh E. (2000)The relationship of symptoms and level of functioning in schizophrenia to general wellbeing and the Quality of Life Scale. *Acta Psychiatrica candinavica*, 102(4), 303-309.

Onyemaechi, C., Obi-Nwosu, H., Anazonwu, C. Nwafor, C., & Umenweke, O. (2018) Effects of rational emotive behaviour therapy and psychoeducation on schizophrenic patients. *Practicum Psychologia*, 8, 48-61. http://journals.aphriapub.com/index.php.pp

Sarason, I. G., Sarason, B. R., Shearin, E. N., Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships*, 4, 497-510.

Thompson, P. A., Buckley, P. F., & Meltzer, H. Y. (1994). The brief psychiatric rating scale: effect of scaling system on clinical response assessment. *Journal of clinical psychopharmacology*, *14*(5), 344–346.

Turkington, D., & Morrison, A. P. (2012). Cognitive therapy for negative symptoms of schizophrenia. *Archives of general psychiatry*, *69*(2), 119–120. https://doi.org/10.1001/archgenpsychiatry.2011.141

World Health Organisation (WHO) (2019, October 4). Schizophrenia. https://www.who.int/news-room/fact-sheets/detail/schizophrenia.