International Journal of
Health Sciences
(IJHS)

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CARI Journals

International Journal of Health Sciences

ISSN: 2710-2564 (Online)

Vol. 7, Issue No.8, pp.64 - 76, 2024

www.carijournals

Effects of Cognitive Behaviour Therapy (CBT) and Dance Movement Therapy (DMT) on Anhedonic Behaviour, among Schizophrenic Patients

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Accepted: 30th Oct, 2024, Received in Revised Form: 14th Nov, 2024, Published: 22nd Nov, 2024

Abstract

Purpose: This study aimed at assessing the therapeutic potency of cognitive behaviour therapy and dance movement therapy on anhedonic behaviour, among schizophrenic patients.

Methodology: Thirty (30) in-patients were randomly selected from the in-patients that met the inclusion criteria for this study at Neuropsychiatric Hospital Nawfia. This study utilized a pretest posttest between subject design; while 18-item Temporal Experience of Pleasure Scale (TEPS) was used for data collection; and ANOVA statistic was adapted for data analysis at .01, and .05 levels of significance.

Findings: From the purpose and objectives of this study, three hypotheses were proposed and tested. The result revealed that hypotheses 1 and 2 were accepted; indicating that significant differences were found between CBT, and Control, as well as between DMT and Control groups. Hence, the first and second hypothesis of the study were accepted. However, the third hypothesis of the study was rejected. Indicating that no significant difference was found between CBT and DMT.

Unique Contributions to Theory, Policy and Practice: Theoretically, the finding in this present study validated the theoretical framework of this study. Hence, can be used for further elaboration of social cognitive theory. The researchers recommended dance movement therapy as one of the psychotherapeutic paradigm for the improvement of pleasure seeking behaviour among schizophrenic patients; since the research findings showed that it can contribute meaningfully towards the improvement of anhedonia associated with schizophrenia. The study has also shown that DMT is as effective as CBT in the reduction of anhedonia associated with schizophrenia so, DMT should be used in situations where CBT cannot be administered or as an alternative.

Keywords: *Cognitive Behaviour Therapy, Dance Movement Therapy, Anhedonia, Schizophrenic Patients*

INTRODUCTION

Mental health practitioners treating schizophrenic disorder, usually focuses on prescribing medications (antipsychotics). This medication reduces or stops positive symptoms of schizophrenia; such as: hallucination, delusion, and other observed disorganized forms of behaviour; but not the negative psychological impact of the experienced psychotic episode on the individual's sense of self. Such unpleasant experience could lead to decreased positive emotion towards self, and could account for the anhedonic behaviour among schizophrenic patients. This issue of anhedonia associated with schizophrenia have been observed to be among the negative symptoms of schizophrenic disorder, and is characterized by highly reduced pleasure-seeking behaviour, withdrawn to self, and flat affect. According to Pomili & Lester (2007), over 15% of those suffering from schizophrenia attempt suicide. Which could be the resultant of extreme anhedonic state, or its concomitant depressive symptoms.

However, research according to Heisel (2008) has proven that psychotherapy plays an important role in the treatment of people with schizophrenia; based on the fact that schizophrenia, like other mental illnesses is not solely a biological or genetic disorder. This notification led to increased research for psychotherapeutic modalities that would not only be effective but also be cost effective for the treatment of psychological deficit (anhedonia) among those suffering from schizophrenia. Hence, necessitating this clinical study, aimed at investigating the effect of Cognitive behaviour therapy and Dance movement therapy on pleasure seeking behaviour (anhedonic behaviour), among schizophrenic patients.

Schizophrenia is a complex disorder, and is among the most widely prevalent mental health conditions. It is characterized by a range of cognitive, behavioural, and emotional dysfunctions. Indeed, Schizophrenia and its various types are regarded as the most severe, and most difficult mental health condition to cure. Schizophrenic patients are 2 to 3 times, at risk of dying compared to the general populace. This is as a result of their likelihood of developing infectious and cardiovascular related comorbid condition (WHO, 2022). Approximately, over 1% of the world's population suffers from Schizophrenia, and it is a worldwide illness that cuts across all cultural and socio-economic groups (Ren & Xia 2013). Schizophrenia as a disorder exerts a lot of pressure on the sufferers, with enormous financial and emotional implications. In addition, sufferers have an increased risk of physical illnesses as well as tendency for suicidality (Rystedt & Bartels, 2008).

In other for a clinician to diagnose Schizophrenia, according to DSM-5 (2013), there must be a clear presence of two or more of the following symptoms for a significant portion of time during a 1-month period or longer (delusions, hallucination, disorganized speech, grossly disorganized or catatonic behaviour, and negative symptoms).

Furthermore, for a significant portion of time since the onset of the disturbance, one or more major areas of the individual's functioning (work, school, interpersonal relations, or self-care) is impaired, with some signs of disturbance, which must persist for a continuous period of,

at least 6 months. However, schizoaffective disorder and depressive or bipolar disorder with psychotic features must be ruled out. There should not be occurrence of major depressive or manic episodes with the active phase symptoms, or if mood episodes have occurred during the active phase symptoms, they have been present for a minority of the total duration of the active and residual periods of the illness. There is also, need to ensure that the disturbance is not attributable to the physiological effects of a substance (e.g. drug of abuse, medication) or another medical condition. In situations where the individual has history of autism spectrum disorder or a communication disorder of childhood onset, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations, in addition to the other required symptoms of schizophrenia are present for at least 1 month (or less if successfully treated).

Cognitive Behaviour Therapy (CBT) is a psychological therapeutic paradigm that aims not only to change the way people think, but also, to alter the way they act. It is one of the mostly researched and best psychotherapeutic paradigms (NCBI, 2022). Which seeks to make people aware of their irrational negative thinking, to replace it with new ways of thinking, and to practice the more positive approach in everyday settings. All cognitive behavioural approaches share the same basic characteristics and assumptions of traditional behaviour therapies. The CBT approaches are quite diverse, but they have the following attributes in common: a collaborative relationship between client and therapist, the premise that psychological distress is largely a function of disturbances in cognitive process, a focus on changing conditions to produce desired changes in affect and behaviour, and a generally time-limited and educational treatment, focusing on specific and structured target problems (Arnkoff & Glass, 1992; Weishaar, 1993).

To a large extent, cognitive behaviour therapy is based on the assumption that a reorganization of one's self-statements will result in a corresponding reorganization of one's behaviour. The cognitive behavioural approaches include a variety of behavioural strategies as a part of their integrative repertoire (Corey, 2009). The general principle of cognitive behaviour therapy deals largely with the here and now. It is a time-limited therapy which involves psycho-educational engagement, and collaboration between the therapist and the client (Zhang et al., 2015). The technique of CBT according to Zhang et al. (2015) includes: identification of negative automatic thought, identification of maladaptive belief and rate its strength, restructure maladaptive belief, formulate alternative positive belief, rate impact of maladaptive belief on emotion, as well as rating the impact of the new belief on emotion.

Another therapy that is gaining recognition in the field of psychology that this study investigated among Schizophrenic patients, is Dance Movement Therapy. Dance Movement Therapy (DMT) is a creative therapy that uses movement to improve the mental and physical wellbeing of an individual (American Dance Movement Association (ADMT) 2013). It is a psychotherapeutic approach that uses movement (the body and non-verbal language) to fulfil the emotional, cognitive, physical, social, and spiritual integration of the individual (ADMT, 2017 & EADMT, 2018). It is incorporated by the Mental Health Practitioners as a treatment option and

has been shown to produce positive results with developmental, medical, social, physical and psychological impairments (Dunphy et al., 2019).

The basic assumption of Dance Movement Therapy (DMT) is that the body and mind are inseparable. It rests on certain theoretical principles, such as:

a. That the body and mind interact, so that a change in movement will affect total functioning.
b. That movement reflects personality.
c. That the therapeutic relationship is mediated at least to some extent, non-verbally. For example, through the Therapist mirroring (reflecting) the Client's movement.
d. That movement contains a symbolic function; hence it can be evidence of unconscious process.
e. That movement improvisation (e.g. being called upon to give a dance or sing a song) allows the client to experiment with new ways of being.
f. That DMT allows for the recapitulation of early object relationships by the large non-verbal mediation inherent in it.

Dancing is not merely an exercise to be accomplished, but rather a statement of one's feeling, energy, and desire to externalize something within. When one creates a dance, it is based on a concept, which could be realistic or abstract, but needs to be communicated to others. This understanding led to the use of Dance Movement Therapy not only in group but in sessions for the individual in his or her search toward self-integration (Chaiklin, 2009).

Theoretical Framework

This study is theoretically anchored on social cognitive theory by Bandura (1986) which is based on the idea that people learn by observing others; with the environment, behaviour, and cognition acting as primary factors that influences learning in a reciprocal triadic relationship. Thus, each behaviour witnessed by a person, can change the person's way of thinking (cognition), as well as behaviour. This concepts could be explained using schematization of triadic reciprocal causation. The schema shows how the reproduction of an observed behaviour is influenced by the interaction of the following three determinants: (a), Personal: whether the individual has high or low self-efficacy toward the behaviour. Here, it is required that the learner will believe in his or her personal abilities to correctly complete the behaviour. (b) Behavioural: the responses an individual receives after they perform a behaviour (reinforcement, or feedback). (c), Environmental: aspects of the environment or setting that influence the individual's ability for a successful completion of the expected behaviour. Here, there is need for a conducive environment that is supportive of the learned behaviour; which in turn, enhance the patient's sense of self.

Social cognitive theory considers the unique way in which individuals acquire, and maintain behaviour. It also considers the social environment in which individuals perform the learned behaviour, as well as how the feedback they receive influences the reoccurrence of such behaviour. Feedback influences reinforcements, expectations, and expectancies; all of which

determines whether a person will engage in a specific behaviour, and the reasons why they engage in such behaviour. The goal of social cognitive theory is to explain how people regulate their behaviour through control and reinforcement, and to achieve goal-oriented behaviour that can be maintained over time.

This theory is related to this study variables in many ways. Studies have shown that one of the impaired areas observed among people with schizophrenia is pleasure seeking behaviour (anhedonia), which hampers the cognitive processing of initially socially satisfying life events as pleasurable. From the social learning perspective, reversing anhedonic behaviour using DMT requires patients to imitate the therapist's dance steps which is done through observation. The dance is structured in a way that it increases socialization, thereby, reducing negative symptoms commonly associated with schizophrenic disorder. The bodily activities also cause neural changes in the brain of such patients, as well as the enhancement of overall wellbeing by increasing positive sense of self-, and sense of satisfaction, or pleasurable emotions.

Furthermore, changing anhedonic behaviour using CBT from cognitive social learning perspective entails changing the negative thoughts, and maladaptive beliefs that clouds the patient's mental schemata. Such maladaptive mental schema according to Onuoha et al. (2021), once activated, lead to illogical thought, and cognitive bias; and could result to negative sense of self, as well as social withdrawal; characterized by andedonic behaviour. Teaching such patient more functional, and adaptive behaviours that are pro-social, as well as modelling such behaviour, and encouraging the patient to try them out through therapeutic assignments will bring about leaning of new adaptive behaviour that could further encourage pleasure seeking behaviour.

Statement of the Problem

It has been the desire of a broader society to create a society where no one is neglected, and where everybody is given adequate attention; and Schizophrenic patients are one of such people the society tries to give a sense of belonging. Efforts has been made to help their state through the use of antipsychotic drugs. However, as much as it brought in some relief, it has not succeeded in most cases to restore full functionality; because, most individuals treated for schizophrenia experience decreased desire for activities that were initially pleasurable to them; even after months of medication. Hence the search for psychological modalities that could complement antipsychotic medication in bringing satisfying treatment outcome among schizophrenic patients, leading to a more functional, and improved psychological wellbeing among schizophrenic patients. Thus, the need for this study, aimed at examining the effect of CBT and DMT on anhedonia among schizophrenic patients.

However, previous scholars such as Kumari et al. (2011), Hofmann et al. (2012), and Krakvik et al. (2013) examined the effect of CBT on the improvement of psychotic conditions, and found CBT to be an effective psychotherapy for reducing psychotic conditions. Nonetheless, Rohricht and Priebe (2006), Lee et al. (2015), and Martin et al. (2016) investigated the therapeutic

potency of Body-oriented psychological therapy (BPT) and Dance movement therapy (DMT) for the reduction of psychotic conditions, and found BPT and DMT effective. However, none to the best of the researchers' knowledge examined CBT and DMT on anhedocic behaviour among schizophrenic patients in this part of the world. Hence the need for this study which aimed at filling such gap, and adding novel literature, and empirical evidence on the effect of CBT and DMT on anhedonic behaviour, among schizophrenic patients.

Hypotheses

The following hypotheses were postulated to guide this study:

1. There would be a significant difference between Schizophrenic patients treated with Cognitive Behaviour Therapy and control group on anhedonic behaviour.
2. There would be a significant difference between Schizophrenic patients treated with Dance Movement Therapy and control group on anhedonic behaviour.
3. There would be a significant difference between Schizophrenic patients treated with Dance Movement Therapy, and those treated with Cognitive Behaviour Therapy on anhedonic behaviour.

METHOD

Research design

This study utilized a pre-test, post-test, between subject design, and analysis of variance (ANOVA) statistics was the statistical tools for analysing the data using Statistical Package for Social Sciences (SPSS) version 25.

Participants

Thirty in-patients in Neuro-psychiatric hospital Nawfia that are being treated for schizophrenia, participated in this study. They consisted of 12 female, and 18 male. Their age raged from 26 to 51 years, with a mean age of 39 and standard deviation of 7.7. They were all Igbo, and Christians.

Instrument for data collection

The 18-item Temporal Experience of Pleasure Scale (TEPS) was used for data collection. TEPS is an 18 items self-repot scale developed by Gard et al. (2006), that measures anhedonic behaviour using two dimensions of pleasure (consummatory, and anticipatory) sub-scales. It was rated on a 6-point likert scale (1= very false for me to 6= very true for me); with items sample such as item number 4, I love the sound of rain on the windows when I'm lying in my warm bed, and item number 7, I don't look forward to things like eating out at the restaurant. Among all the items, item number 7 is reversed scored. The authors of this scale reported the inter-item correlation of the total scale as *r*.18. While the inter-item correlation for consummatory, and anticipatory sub-scales were reported as *r*.23 and .24, respectively. The test-retest reliability of the total scale,

consummatory, and anticipatory scales were reported as r.81 (p<.001), .80 (p<.001), and .75 (p<.001), respectively. They further reported the Cronbach's alpha coefficient of .79 for the total scale, and .74 and .71 for consummatory, and anticipatory sub-scales, respectively.

Validation and Reliability of the Instrument

Validity and reliability of psychological scale is ascertained from the psychometric properties of the scale as reported by the developer. In respect to TEPS, the validity and reliability of the scale was reported below the instrument sub section as .81 (p<.001), .80 (p<.001), and .75 (p<.001) for the total experience of pleasure, consummatory, and anticipatory subscale respectively. Furthermore, Cronbach's alpha coefficient of .79 was reported by Gard et al. (2006) for the total scale, and .74 and .71 for consummatory, and anticipatory sub-scales, respectively. Indicating that the scale is valid and reliable. Thus, can be used in this present study

Ethical Approval

This study was approved by PG board of Nnamdi Azikiwe University, Awka, and ethical committee of Neuropsychiatric Hospital Nawfia, Anambra State, Nigeria.

Ethical Consideration

1. The researchers ensured that participants were not exposed to any form of harmful stimuli.
2. No form of deception were used in influencing the participants' response.
3. Anonymity was ensured; as such, participants' personal information were excluded in the study.
4. The outcome of this study was made available for the benefit of the study participants; as well as through publication of the research findings.

Inclusion Criteria

Patients that met the inclusion criteria as at the time of selection were eligible for this study.

1. In-patients that are being treated for Schizophrenia,
2. In-patients that are in touch with reality (with no active positive symptoms)
3. In-patients that agreed to be part of the study and signed informed consent
4. In-patients that were significantly high on anhedonia (those who scored 36 and below on the 18-item Temporal Experience of Pleasure Scale during pre-test, and were selected.
5. In-patients who can understand English language.

PROCEDURE

The researchers obtained an introduction letter from the Head of Department of Psychology, Nnamdi Azikiwe University, Awka; introducing the researchers to the Chief Psychiatrist of Neuropsychiatric Hospital Nawfia, requesting for the approval to use the hospital facility, and to work with the in-patients for the duration of the research. The research proposal was submitted to the Ethical Committee of the Hospital, and approval was granted. Then, the

researchers proceeded with the research. From the in-patients that were being treated for schizophrenia, thirty six patients that met the inclusion criteria were selected. After which, the nature and duration of the study was discussed with them, and four among them opted out, remaining thirty two inpatients. Of the thirty two in-patients, simple random sampling method was utilized in selecting thirty inpatients that participated in this study. Furthermore, simple random sampling method was also used in placing the thirty participants into three different group which were labelled group A, B, and C; and they were 10 participants' in each group. Each of the participants were given a code number, as means of identification, for the purpose of anonymity.

Before the commencement of the research, the consent to be part of the study was signed by the thirty participants, and they were informed that they were free to opt out anytime they felt uncomfortable. Group A were treated with ten sessions of CBT, which was administered by a licenced Clinical Psychologist, trained in CBT. Each sessions lasted for one hour, two sessions in the first week, then once a week, for a duration of eight weeks. Group B were treated with DMT, which was administered by a licensed Clinical Psychologist, trained in DMT. Each session lasted for one hour, and was also administered two times in the first week, then once a week, and for the duration of eight weeks, and they were encouraged to practice at their spare time. While group C served as the control group, and were not administered any treatment conditioning during the period of the research; but continued with their medications.

At the end of the eight weeks sessions, the 18-item Temporal Experience of Pleasure Scale (TEPS) was administered to the three (group A, B, and C); with their code written on the questionnaire. The data collected after the treatment conditioning, served as the post-treatment data. After which, their pre-test and post-test data were identified using their individual codes, and were coded in the Statistical Package for Social Sciences (SPSS) version 25 for analysis.

RESULTS

Table 1: Summary table of the descriptive statistics for number of participants, mean, and standard deviation.

Groups	N	Mean	SD
DMT	10	3.1	1.7
CBT	10	3.9	1.9
Control	10	11.3	4.6
Total	30	6.4	4.9

The Table 1 above indicated that the mean score of the control group is higher than the mean score of those in CBT and DMT groups. This suggests that the treatment administered to the treatment groups reduced anhedonic behaviour of the in-patients in these groups.

Table 2: Summary table of between subjects effect

	Sum of Squares	DF	Mean Squares	F	Sig.
Between Group	463.4	2	231.7	22.0	.000

From the above Table 2, the One Way Analysis of Variance (ANOVA) result indicated strong evidence that showed significant difference between the three groups (CBT, DMT and Control) at $F(2)=22.0$, $P<.01$. Thus, hypothesis number one and two were accepted

Table 3: Pairwise Comparisons (Post Hoc) of cognitive behaviour therapy (CBT) and dance movement therapy (DMT)

(I) Groups	(J) Groups	Mean Diff (I-J)	Sig.
DMT	CBT	-.80	.859
	Control	- 8.2	.000
CBT	DMT	.80	.859
	Control	-7.4	.000
Control	DMT	8.2	.000
	CBT	7.4	.000

*The mean difference is significant at the 0.05 level

The Post Hoc carried out in Table 3 above, further indicated that patients in the treatment groups showed significant reduction on anhedonia, than those in the control group. From table 3 above, it was further observed that no significant difference existed between the patients treated with CBT, and those treated with DMT, on anhedonic behaviour at ($M= -.08$, $p >.05$). Hence hypothesis number three was rejected

DISCUSSION

The current study examined the effects of Cognitive Behaviour Therapy and Dance Movement Therapy on anhedonic behaviour, among schizophrenic patients. Three hypotheses

guided the study, and were tested using ANOVA statistics. The first hypothesis was upheld. It is therefore worthy of note that Cognitive Behaviour Therapy reduced anhedonic behaviour among schizophrenic patients. This finding is in accordance with Kumari et al. (2011) who reported that Cognitive Behaviour Therapy for psychosis may mediate symptom reduction by influencing the way patients' processes distressing thought in a less distressing way.

The finding in this present study also validated that of Hofmann et al. (2012), which affirmed appreciable efficacy of CBT for treating schizophrenia, and other psychotic disorders. Particularly, for positive symptoms, and secondary outcomes. In support of the first hypothesis of this present study, the study by Krakvik et al. (2013) affirmed that Cognitive Behaviour Therapy for psychosis delivered by non-experts to psychotic patients in routine clinical settings can produce improvements in positive psychotic symptoms, and also, that some of these improvements can be maintained at one year follow-up. This finding also upheld that patients improves when they identify, and challenge their dysfunctional believe, and replace them with more effective ways of dealing with their problems.

The second hypothesis of this present study was also confirmed; which indicated that Dance Movement Therapy improved psychological wellbeing of schizophrenic patients, by reducing their anhedonic behaviour. The joy of having fun in a group setting could have played a prognostic role in maintaining positive emotions among the in-patients, treated with DMT. The outcome of the second hypothesis of this present study is in line with that of Rohricht and Priebe (2006). They found that body-oriented therapies is effective in the reduction of negative symptoms in chronic schizophrenia. Also, the result of the second hypothesis in this present study is as well in line with that of Lee et al. (2015). They investigated the effect of Dance Movement Therapy on affect and psychotic symptoms in schizophrenia patients, and found a significant decrease of negative psychotic symptoms compared to the control group. Furthermore, the study by Martin et al. (2016) demonstrates that Dance Movement Therapy is a helpful treatment for patients suffering from schizophrenia.

The third hypothesis of this present study was rejected; which indicated that no significant difference existed between the in-patients treated with CBT, and those treated with DMT. This means that Dance Movement Therapy is as good as Cognitive Behaviour Therapy for the treatment of anhedonic behaviour associated with schizophrenia.

CONCLUSION

This study compared the effects of cognitive behaviour therapy and dance movement therapy on anhedonia among schizophrenic patients, and concluded that dance movement therapy as one of the psychotherapeutic paradigm for the improvement of pleasure seeking behaviour among schizophrenic patients; since the research findings showed that it can contribute meaningfully towards the improvement of anhedonia associated with schizophrenia. It was also confirmed that DMT is as effective as CBT in the reduction of anhedonia associated with schizophrenia. So, DMT should be used in situations where CBT cannot be administered or as an

alternative to CBT in treating anhedonic behaviour among schizophrenic patients. Furthermore, it was also observed that short term CBT (as low as 10 sessions) is effective in the reduction of negative symptom (anhedonic behaviour) of schizophrenic patients. Hence, in cases where patients finds it difficult to commit to a long time therapy, brief CBT can be a good alternative.

RECOMMENDATIONS

Based on the findings of the study, the researchers recommended that mental health team should incorporate dance movement therapy as one of the psychotherapeutic treatments that can improve mental health of schizophrenic patents in the area of pleasure seeking behaviour; since the research findings showed that it can contribute meaningfully towards the reduction of anhedonia associated with schizophrenia. It was also recommended that, since DMT is as effective as CBT in reducing anhedonic behaviour associated with schizophrenia, DMT should be used in situations where CBT cannot be administered. Furthermore, since brief CBT was proven to be effective in reducing anhedonia among schizophrenic patients, the researchers recommended that it should be used more often especially among schizophrenic patients bearing in mind the unique nature of this class of patients in other to curb drop out from therapy.

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