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Nonpharmacologic Interventions and Adjunct Therapies in the Treatment of Schizophrenia

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Abstract

Schizophrenia is a disease affecting approximately 1% of the population in the United States annually and carries with it significant implications for the health and wellbeing of the individual experiencing its effects as well as the broader community (National Institute of Mental Health [NIMH], 2017). The standard of care in the treatment of schizophrenia is widely accepted to be pharmacotherapy. However, this approach to treatment is limited in its effectiveness due to residual symptoms, side effects, and treatment non-adherence (Patel, Cherian, Gohil, & Atkinson, 2014). It has been found that nonpharmacologic interventions are important and effective adjunctive therapies in the treatment of schizophrenia (Patel et al., 2014). This paper is designed to explore the literature as it relates to specific nonpharmacologic interventions in the treatment of schizophrenia, specifically creative arts therapies. Utilizing online databases of CINAHL, PsycInfo, PubMed, and Cochrane, a comprehensive search of the current research was conducted. By reviewing the literature specific to art therapy, music therapy, and dance/movement therapy, the APPN gains a better understanding of the therapies available to enhance the care and treatment of patients with schizophrenia. This paper explores which therapies are supported by evidence as to their appropriateness and efficacy and helps to identify barriers to their application and suggestions for future research.

Nonpharmacologic Interventions and Adjunct Therapies in the Treatment of Schizophrenia

Schizophrenia is a severe, chronic, and potentially disabling psychiatric disorder that faces numerous barriers in the achievement of effective treatment. This disorder affects approximately 1 in every 100 adults in the United States annually (National Institute on Mental Health [NIMH], 2017). Economic impacts of schizophrenia due to direct costs such as treatment, hospitalizations, programming, and emergency room visits, and indirect costs such as unemployment, disability, and homelessness have been estimated to be up to US$102 billion annually (Chong et al., 2016).

The standard of care in the treatment of schizophrenia is widely accepted to be pharmacotherapy. However, pharmacotherapy is challenged in its effectiveness due to medication side effects, treatment non-adherence, and the persistence of residual symptoms (Patel, Cherian, Gohil, & Atkinson, 2014). These challenges are implicated in increased utilization of emergency rooms, readmissions to inpatient hospital settings, exacerbation of symptoms, and relapse (Lindenmayer et al., 2009).

Nonpharmacologic interventions have been identified as important adjunctive therapies in the treatment of schizophrenia by helping to support medication adherence and impacting symptomatology (Patel et al., 2014). Because schizophrenia is characterized by positive, negative, and cognitive symptoms and carries with it significant societal impact, it is important for the Advanced Practice Psychiatric Nurse (APPN) to look to treatment options beyond the traditional pharmacotherapy with its above noted challenges. By yielding a more holistic approach to care with the incorporation of nonpharmacological treatments, the APPN can hope to better affect treatment outcomes for their patients suffering from schizophrenia.

Purpose

It is not uncommon for nonpharmacologic interventions to be utilized in the treatment of schizophrenia. Interventions that are sometimes labeled as psychosocial treatments (psychotherapy, psychoeducation, vocational rehabilitation) are often included in programming approaches with this population. However, a large body of alternative therapies beyond these more routinely applied approaches exists and merits consideration in the treatment of schizophrenia.

By reviewing the available research, this paper is designed to investigate nonpharmacologic interventions and adjunct therapies in the treatment of schizophrenia and seek to compare and contrast the body of evidence. Although not intended to be exhaustive, the nonpharmacological interventions reviewed will include those in the realm of creative arts, namely music therapy, art therapy, and dance/movement therapy.

The goal of this literature review is to provide the APPN with a better understanding of the therapies available to enhance the care and treatment of patients with schizophrenia. It will identify which therapies are supported by evidence as to their appropriateness and efficacy. This paper will also help identify existing barriers to the application of these therapies in hopes of facilitating future work toward the elimination of the discovered barriers.

Significance

Schizophrenia has significant implications for the health and wellness of the individual living with this disorder as well as the community at large. Individuals with schizophrenia are at greater risk for homelessness (Foster, Gable, & Buckley, 2012), die earlier than the general population (Olfson, Gerhard, & Huang, 2015), and are at a higher risk for suicide (Bornheimer, & Nguyen, 2016). These problems are multifactorial in their etiology, but it is posited that some of the burden of this disorder can be attributed to ineffective treatment (Foster et al., 2012).

In addition to assisting in the enhancement of pharmacotherapy, research suggests that nopharmacologic interventions also help in the management of the negative symptoms of schizophrenia (Geretsegger et al., 2017). Negative symptoms, characterized by loss of motivation, flat affect, reduced speech, apathy, poverty of thought, and lack of interest in socialization, are implicated in the psychosocial challenges faced by individuals with this disorder (NIMH, 2017). It is in the recognition that improved outcomes may be gained by including nonpharmacologic interventions in schizophrenia treatment, that warrants a closer look at alternative options for people living with this life-altering mental illness.

Nurses, at the core of their practice, are used to utilizing holistic approaches to care (Wheeler, 2014). It is in recognition of the whole person that the APPN considers the integration of care that transcends purely biologic functions. It has been noted that the transformative properties of creativity lend to its role in fostering and improving mental and physical health (Le Navenec & Bridges, 2005). With greater comprehension of the breadth of available adjunct therapies, the APPN can utilize, advocate for, and provide holistic care, which is in keeping with the foundations of nursing practice.

Theoretical Framework

Margaret Newman's Theory of Health as Expanding Consciousness provides a framework from which an exploration of holistic care in schizophrenia can be applied. A grand nursing theory, Health as Expanding Consciousness is influenced by Rogers' Theory of Unitary Human Beings (Petlprin, 2016). Newman developed this theory from the idea that for some individuals, the absence of disease or disability, is not a definition of health, (Newman, 1999). In her summarization of this tenet of Newman's theory Pharris (2011) notes, "rather than being the opposite of illness, health includes patterns of disease and is an evolving unitary pattern of the

whole" (p. 194). Schizophrenia, as a chronic illness, embodies this conceptualization of health. It is in the treatment of schizophrenia that an appreciation of the whole person is necessary and the APPN is in a unique position to apply this philosophy, in that nursing encompasses the care of those dealing with debilitation, loss, and uncertainty (Newman, 1999).

Newman believed that humans are whole, unitary beings, and cannot be divided into smaller parts (Newman, 1999). When considering schizophrenia in relationship to Newman's theory, a parallel can be drawn between her idea of the wholeness of humans and the need to address and treat all aspects of symptomatology in schizophrenia (positive, negative, and cognitive). The goal of treatment should be to treat the entire person and enhance all areas of being.

In addition to this theory's paradigm of health, exists its assertions that consciousness relies on the interconnectedness of the energy systems of humans with the energy systems of the universe and environment (Marchione, 1992). By interacting with these energy systems, patterns of wholeness can evolve. It is the recognition of these patterns that defines expanding consciousness (Newman, 1999).

One can conceptualize the role the creative arts play in this idea of interconnectedness between the energy systems of humans and the universe. Mickey Hart, the drummer for the Grateful Dead, shared his experience with music to a senate panel in 1991 "[Rhythm] is there in the cycles of the seasons, in the migrations of the birds and animals, in the fruiting and withering of plants, and in the birth, maturation, and death of ourselves" (American Music Therapy Association, 2017a, para 13). The arts are known to draw inspiration from the environment, act as a means of communication, promote self-expression, and convey meaning, lending toward a greater sense of connectedness with the universe and realization of expanding consciousness.

Newman's theory supports the integration of alternative therapies – and for purposes of this paper, the arts specifically – with the current standard medical care of people with schizophrenia. Its dedication to the concept of the whole person and the interrelation of energy systems allows for individualized, holistic approaches to care. By utilizing this theory as a framework for promoting holistic care, the APPN can cultivate the concept of expanding consciousness. As Newman, herself states, "we are in the wonderful process of expanding consciousness, of things becoming clearer, of moving from 'seeing through a glass darkly' to know as we are known" (1999, p. xxiii).

Definitions

Schizophrenia: a chronic and severe mental disorder that affects how a person thinks, feels, and behaves. Schizophrenia tends to involve abnormalities in five symptoms domains including hallucinations, delusions, disorganized thinking, disorganized or abnormal motor behavior, and negative symptoms.

Positive Symptoms: psychotic behaviors not usually seen in healthy people such as hallucinations, delusions, unusual thoughts, and agitated body movements.

Negative Symptoms: associated with disruptions in emotions and behaviors as evidenced by flattened affect (reduced facial expression or voice tone), reduced feelings of pleasure, difficulty initiating and sustaining activities, and reduced speaking

Cognitive Symptoms: changes to memory or thinking which may encompass poor executive functioning, trouble focusing, and impaired working memory.

Art Therapy: an integrative mental health and human services profession that enriches the lives of individuals, families, and communities through active art-making, creative process, applied psychological theory, and human experience within a psychotherapeutic relationship.

Music Therapy: the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program. Music Therapy is an established health profession in which music is used within a therapeutic relationship to address physical, emotional, cognitive, and social needs of individuals.

Dance Therapy: the psychotherapeutic use of movement to promote emotional, social, cognitive and physical integration of the individual.

Review of the Literature

Art Therapy

A widely cited article regarding the subject of art therapy and schizophrenia, is known as the MATISSE study (Crawford et al., 2012). This large-scale, randomized controlled trial (RCT) consisted of 417 subjects with a diagnosis of schizophrenia randomly assigned to one of three groups with the aim of distinguishing the effects of group art therapy (AT) on the identified patient population. The primary goal for the application of AT as adjunctive treatment in this study was to determine its effect on global functioning and mental health symptoms. These outcomes were measured with the Global Assessment of Functioning (GAF) and Positive and Negative Syndrome Scale for Schizophrenia (PANSS) scales respectively at baseline, after 12 months of intervention, and at a 24-month follow up.

The three groups included an AT group, a standard care group, and an activity group. Participants were recruited from four different outpatient mental health centers in the United Kingdom. The experimental group received weekly, 90-minute group AT sessions facilitated by registered art therapists over the course of 12 months. The standard care group were involved in outpatient mental health care and were allowed the option to be referred to other services as long

as they did not encompass creative arts therapies. The activity group were offered a variety of activities from which to choose based on their own preferences. The purpose of having the third-arm of the study (the activity group) was to control for non-specific effects of group art therapy (Crawford et al., 2012).

The study did not produce significant results indicating benefit of the utilization of art therapy. The central outcomes of this study – to assess global functioning and mental health symptoms – did not differ between the varying arms of the study. Despite the robust design of this study, a considerable limitation is in its finding of poor attendance by participants in both the art therapy group and the activity group. Approximately 40% of participants in both of these groups never attended a single session (Crawford et al, 2012). Consideration of this limitation makes it difficult to assert its generalizability to settings where attendance may be better controlled such as an inpatient setting.

In contrast to the results of the MATISSE study, two smaller scale RCTs have since been published leaving room for the possibility that AT is a beneficial treatment for schizophrenia. The first of these studies (Montag et al., 2014) looked at the effects of AT in addition to standard treatment in an inpatient psychiatric setting with schizophrenic patients experiencing acute symptoms of psychosis. Fifty-eight patients in an inpatient hospital in Germany were randomized to either an AT group or a standard care group. The AT sessions were 90-minutes in length and took place twice weekly for a total of 12 sessions. Twelve-week follow up was completed with both groups. Evaluation tools in this study included the Scale for Assessment of Positive Symptoms (SAPS), the Scale for Assessment of Negative Symptoms (SANS), the GAF, and the Calgary Depression Scale for Schizophrenia (CDSS).

Unlike the MATISSE study, Montag et al (2014) found significant improvement in positive symptoms, negative symptoms, and global functioning in the group randomized to AT. There was no difference in depression scores between the two groups. The study also was able to determine feasibility for conducting similarly designed research in the future with inpatient settings.

A strength of this study was its careful attention to dependent variables. The researchers controlled for gender, verbal IQ, and the baseline score of each dependent variable. Three notable limitations of the study include the small sample size (N=58), a high drop-out rate/ loss to follow up (only 55% of the experimental group and 66% of the control group had results available for data analysis), and the short-term nature of the study.

The second RCT with differing results from the MATISSE study was conducted with prison inmates diagnosed with schizophrenia in mainland China. Qiu, Ye, Huan, Liue, and Lu (2017) randomly assigned 194 study participants to two groups both of which were treated with the standard care of pharmacotherapy throughout the study. Art therapy sessions were delivered once a week for 120 minutes for 48 weeks. The first group participated in all 48 sessions, and the second group received only medications for the first 16 weeks and then participated in the last 32 weeks of art therapy sessions. Similar to other studies, the PANSS scale was used as an evaluation tool. Additional tools included the Beck Depression Inventory (BDI), the State-Trait Anxiety Inventory (STAI), and the State-Trait Anger Expression Inventory (STAXI). Also evaluated in this study was the reports from correctional staff by way of a survey that asked about compliance with rules, diet, medications, and staff, sleep patterns, and socialization with peers.

Qiu et al. (2017) were able to show results that point towards effectiveness of the specific intervention in terms of state anger, state anxiety, depression, and negative symptoms of schizophrenia in as little as six weeks of participation. This study's relatively larger scale and longitudinal design help validate its results. However, because of this study's prison setting, it is difficult to ascertain whether generalization of the results is possible. Additionally, concern over the inability to control for a number of variables in the prison setting is seen as a limitation of the study.

Ruiz, Aceituno, and Rada (2017) conducted a literature review that not only included quantitative studies, but also qualitative studies and case studies to try and answer the question of whether AT leads to clinical improvements in individuals with schizophrenia. Twenty articles over a ten-year period were deemed appropriate to the research question, and parameters, including the therapy provided, met the qualification standards to be considered art therapy. Ultimately, it was determined that evidence is not sufficient to claim AT's role in improving the symptoms of schizophrenia. However, this study as well as a narrative review of the literature (Attard & Larkin, 2016) were able to show that AT provided clients with enhanced self-awareness and self-esteem as well as improved emotional expression, and connection with themselves, reality, and social networks. That being said, there lacks a large body of qualitative evidence to support these subjective assertions (Attard & Larkin, 2016).

Music Therapy

Nonpharmacologic therapies have been implicated in the improvement of negative symptoms of schizophrenia and this assertion holds true for music therapy (MT; Geretsegger et al, 2017). Mohammadi, Minahs, Haidari, and Pahah (2012) with their quasi-experimental study, were able to show significant data regarding the effects of MT on negative symptoms of

schizophrenia. Ninety-six patients with schizophrenia were recruited from a central Tehran hospital and were randomly assigned to three groups: Group 1 participated in active MT, Group 2 participated in passive MT (listening to music), Group 3 had no music intervention.

Composite scores of the SANS showed a mean total score of 36.1 for the active MT group and 38.0 for the passive MT group as compared to the control group with a score of 45.4 which the ANCOVA showed a significant main effect (Mohammadi et al, 2012). Anhedonia-asociality was a subscale of the SANS that demonstrated significant effect as well. There was no significant difference noted between groups noted in the scores for positive symptoms using the SAPS. The study only provided the MT interventions for a total of four weeks, leading to a limitation of the study design. Additionally, no follow up was done to establish lasting effects of the interventions.

In hopes of updating analysis of the existing literature, Trent et al., conducted a meta-analysis (2016) reviewing the literature specific to group music therapy and schizophrenia. Comparisons between the effects of MT interventions and standard care with schizophrenic patients were investigated. The authors found that in addition to previously held conclusions of the effectiveness of music therapy on negative symptoms and mood symptoms, MT also had significant effect on positive symptoms. Also determined by the authors was the lack of significance MT sessions number, length, or frequency had on the results of its impact on the studied variables.

A total of twelve articles were reviewed in the study following a PubMed search. The authors extracted a total of 402 patients with schizophrenia who received adjunctive MT interventions and equal number of patients with schizophrenia who did not participate in MT from the 12 studies. Limiting the comparability of the studies were the varying rating scales used

and the authors opted to prioritize those results utilizing the PANSS scale citing better specification to schizophrenia. Sub-group analysis was performed to evaluate potential differences between RCTs and non-RCTs as well as possible confounding factors related to MT strategies. This study provides support to the multifaceted effects (including negative symptoms, positive symptoms, and mood symptoms) of MT in schizophrenia with its findings.

A second meta-analysis, updated from one completed in 2011, included a review of a total of 18 studies, with a composite of 1215 participants, and varying MT treatment amounts ranging from seven to 240 sessions (Geretsegger et al., 2017). All studies included in this Cochrane Review were RCTs that compared MT interventions to no treatment intervention, or placebo therapy.

MT first came to be known as a profession in the 1940's in North and South America (Geretsegger et al., 2017) It is now a profession practiced across a number of countries world-wide, but its approaches have some degree of variability. The authors cite the need for evidence of MT's effectiveness as it becomes a more established profession as rationale for conducting their literature review.

Ultimately, the RCTs included for review demonstrated that at a minimum, over the short to medium term, MT seems to have positive effects with regard to depressive, anxiety, and general negative symptoms as well as improvement in quality of life. However, unlike Trent et al.'s (2016) determination that the number of MT sessions does not present a significant effect on results, this review came to a different conclusion. This literature review suggests that a minimum of 20 MT sessions are needed to show clinical efficacy.

Interestingly, the authors comment on the use of scales such as the PANSS, SANS, SAPS, and BPRS as measures of clinical outcomes, although helpful for establishing data points,

do not necessarily fully detail the experience of individuals with schizophrenia. They note that "the most important real-world outcomes (such as being able to work, living independently, not being readmitted to hospital, maintaining positive relationships with significant others) are not based on scales" (Geretsegger et al., 2017, p. 26). Argument is made for a better understanding of who the stakeholders are for future research and consideration for studies that help determine relevant outcomes to those stakeholders

A 2013 RCT that was included in the above mentioned meta-analyses, looked at the effect of MT on psychiatric symptoms and depression in patients with schizophrenia (Lu et al.). Participants (N=80) were from an Eastern Taiwan nursing home and had a mean age of 52 years. The experimental group participated in a one hour group MT session twice weekly for a total of five weeks. The control group received usual care at the nursing home which encompassed meals, nursing care, ADL assistance, and social activities.

Baseline and posttest scores indicated significant improvement in PANSS scores (both positive and negative) and CDSS depression scores with the intervention group. However, at the three-month follow up, no significant change was identified leading to the proposition that the effects do not sustain for that duration of time. Additionally, the study was not able to afford to conduct follow up at six and twelve-month intervals, limiting prospective hypotheses.

Notable in this study is that it was the first to look specifically at a nursing home population with regard to music therapy and schizophrenia. The advantage of the nursing home environment for purposes of this study is that it produced a much smaller drop-out rate (8%) than comparable studies. A limitation of this study in addition to the lack of longitudinal follow up was that participants knew their group assignments as it was not a double-blind study.

A quasi-experimental study conducted in a Korean forensic psychiatric hospital utilized a culturally specific MT approach, the Nanta-program, to assess its effects on inmates diagnosed with schizophrenia (Jeon, Gang, & Oh, 2016). The Nanta-program utilizes the practice of drumming rhythms including traditional, Korean Samulnori rhythms and Western rhythms with a goal of providing an outlet for excess energy, promoting emotional expression, and improve socialization and concentration. It was felt by the authors of this study that a music therapy program such as the Nanta-program, if successful in targeting the stated goals, would prove to be an effective tool in helping schizophrenia patients in forensic care improve their quality of life and promote normal social functioning in preparation for reentry to the community.

The Brief Psychiatric Rating Scale (BPRS) used to assess symptom reduction in the experimental group (N=18) as compared to the control group (N=20) showed that all rated areas (affect, negative symptoms, positive symptoms, resistance, and activation) had improved scores from baseline after the MT intervention was instituted for 12, 90-minute weekly sessions. The activation sub-portion findings of the BPRS was of specific interest to the authors as the improvement seen in this symptom realm had not been found in previous studies. The authors shared that "the active engagement in beating drums during each session, also helped subjects develop the ability to perceive, express and transform strong and potentially destructive emotions into acceptable and constructive expressions" (Jeon, Gong, & Oh, 2016, p. 97).

Significant effect was also seen with regard to improved perception of interpersonal relationships that was measured using the Relationship Change Scale (RCS). One potential explanation for the significant effect appreciated with the RCS scores is due to the score of the control group decreasing while the experimental group's increased. This widening of effect scores is limited as there was no control in place to address possible environmental effects of

interpersonal relationships in the correctional setting. There was no significant effect found between the experimental group and control group with regard to quality of life.

Beneficial to the study is the homogeneity of the study groups. A limitation in addition to its small sample size, is the very specific population to which it was applied. Other incarcerated forensic patients, such as a female population with similar diagnoses, may benefit from drumming as well. The authors reference success of the Nanta-program in adolescents and children. In combination with their own findings, suggests appropriateness of using this MT approach with other populations and in other settings.

Utilizing different assessment scales and evaluation tools, Kwon, Gang, and Oh (2013) studied the effects of MT on cognitive function, brain waves, and behavior in individuals with chronic schizophrenia. This quasi-experimental study recruited 55 participants from an inpatient psychiatric facility. The experimental group members participated in 13, twice- weekly MT sessions facilitated by professional music therapists. A pre-test post-test design was used to measure brain waves with electroencephalogram (EEG), behavior with the Nurses' Observation Scale for Inpatient Evaluation (NOSIE), and cognition with the Mini Mental Status Evaluation (MMSE).

The study's results did not reveal significant changes in beta-waves with EEG post-testing, however significant alpha-wave changes in frontal, prefrontal, temporal, and parietal sites in the experimental group as compared to the control group. The authors assert that the increase in alpha-waves represented physical and emotional relief experienced with the stimulation of music. With regard to cognitive function, increases were found in language and construction, and attention and calculation subcategories of the MMSE in the experimental

group. And finally, the NOSIE results indicated significant improvements in patients' behaviors following the group MT.

Due to the authors wanting to control for cross-contamination of the participants, group assignments were based on unit location rather than randomization. This presents one limitation to the study. Additionally, participants in the study volunteered for the study, which may represent a baseline of motivation amongst the participants not generalized to the greater hospital population.

A particularly novel argument found in the literature with regard to MT and psychosis comes from Solli and Rolvsjord (2015). Although not exclusive to a diagnosis of schizophrenia, with its focus on psychotic illnesses, the study is felt to be representative of the subjective experiences of individuals with schizophrenia. The researchers sought to determine qualitative appreciation of MT interventions from study participants.

As is typical of qualitative studies, a small sample size represented the study's findings. Nine psychiatric inpatients with a diagnosis of a psychotic illness participated in 30-60 minute weekly MT sessions as well as 45-minute weekly group sessions. Seen as a positive study design, the role of the music therapist and interviewer was held by the same practitioner (Solli & Rolvsiord, 2015). Emerging themes that revealed themselves from the study included freedom (from illness, stigma, and treatment), contact (with oneself, emotions, other people), well-being (enjoyment and satisfaction, motivation, mastery), and symptom relief (from disturbing thoughts and voices, visual hallucinations, and psychotic states).

This study varies from the other music therapy articles reviewed in its determination that music as treatment should be reconceptualized by providers. Participants' responses to the MT intervention revealed feelings of escapism from their illness which they found beneficial. Solli

and Rolvsjord observed that "it seemed that for many of the participants, music therapy aligned with a precious area in their life that they experienced as outside the realm of illness and treatment" (2015, p. 67). It is with this identified belief that the authors argue for a shift in focus from illness reduction, to that of advocacy of positive mental health and wellness.

Dance/Movement Therapy

A 2013 inquest into the application of dance therapy with a schizophrenia population was published by the Cochrane Review (Ren & Xia, 2013) and determined that the evidence was not sufficient to support or refute the use of dance therapy with this population. A total of 1026 articles were screened for inclusion in the meta-analysis. The literature reviewed resulted in only one study, a RCT, that met the standards for inclusion. Quasi-experimental studies were not considered for review.

The notable result of the study included in this meta-analysis was that of a greater than 20% reduction in the PANSS negative symptoms score for the control group. The authors recognized that this percentage of change could have variable perceived benefits depending on the individual experiences the symptom reduction, but nonetheless acknowledged interest in the finding. Follow up data was limited in the one included study because 40% of the participants were lost to follow up after four months. Because of the limited quality evidence, no conclusion was made regarding the efficacy of dance therapy as an adjunct therapy in the treatment of schizophrenia.

Since the time of the Cochrane Review's publication, a number of studies have been published addressing the effect of dance/movement therapy on varying outcomes in a schizophrenic population. One such study conducted by Lee, Jang, Lee, and Hwang (2015) investigated dance/movement therapy's (DMT) effect on affect and psychotic symptoms in

patients with schizophrenia. Anger, depression, anxiety, and positive and negative symptoms were the symptoms and affective components considered for the purposes of this study.

With a relatively small number of participants recruited for the study (N= 38), the results are somewhat limited, but remain positive with regard to potential for future research. The authors found that after 12 weeks of weekly, 60-minute DMT sessions, the experimental group (N=18), who also received standard medical care, showed significant improvement in negative symptoms (PANSS scores) and depressive symptoms (BDI) as compared to the control group receiving just standard medical care. There were no significant differences found in affective properties of anxiety or anger with STAI and STAXI scores respectively or with the positive symptoms of schizophrenia. Participants in the study were recruited from a South Korea hospital helping to control for drop-out of group members.

Priebe et al. (2016), in their RCT, randomized 256 outpatients with schizophrenia to two groups. The experimental group participated in twice weekly 90-minute sessions of Body Psychotherapy (BPT) for 10 weeks, facilitated by a registered dance therapist, and the control group participated in an equally time involved Pilates group. The PANSS scale was the primary means for evaluating the effectiveness of the intervention on the negatives symptoms of schizophrenia, with secondary measures of psychopathology, social contact, cost-effectiveness, and quality of life applied as well.

Results after intervention and after a six-month follow up did not show any significant benefit to the intervention of BPT over Pilates with regard to the negative symptoms of schizophrenia or cost-effectiveness. Significant differences were noted with CAINS scores which measured expression and SAS scores which measures extrapyramidal symptoms.

However, it was felt that these results were not substantial enough to represent a clinically meaningful benefit.

One evident limitation of this study that carries potential weight to its results is the lack of a control arm receiving standard care in addition to the Pilates control group or in replacement of the Pilates group. Because of the study's design with the two randomized arms, it is difficult to ascertain whether movement/exercise in general proved a benefit to the studied population. Another possibility is that the structure of a group setting with regular sessions was a source of benefit to the participants.

In contrast to the limitations related to the previous study design, Martin, Koch, Hirjak, & Fuchs (2016) in their RCT, utilized a similar intervention of BPT combined with Dance and Movement Therapy (DMT) and Treatment as Usual (TAU) with individuals diagnosed with schizophrenia. The control group with this study consisted of TAU in order to specifically evaluate the effects of the intervention. The authors of this study argue that schizophrenia can be conceptualized as a "form of disembodiment of self" (Koch et al., 2016, para 1) and that embodiment therapies such as BPT and DMT can be used to help address symptomatology.

Sixty-eight participants from three outpatient medical centers in Heidelberg, Germany were randomly assigned to the two study groups. Those in the experimental group participated in 20 total sessions of BPT/DMT (twice weekly sessions for 10 weeks). Strict inclusion and exclusion criteria was maintained for designation of appropriate study participants.

Similar to other arts therapy studies reviewed for this paper thus far, this study resulted in a large drop-out rate (30.9%) creating a limitation to the available data. In order to account for the missing data, Multiple Imputation (MI) was performed in an attempt to mitigate loss of power and precision of the data. Controlling for bias and confounding variables, this study shows

statistical rigor. The results show that the BPT/DMT group had significantly reduced negative symptoms of schizophrenia following the intervention. Additionally, the negative symptom sub-type of attention deficits was also significantly reduced in the experimental group at post-test.

Like the Priebe et al. (2016) study, the authors concluded that the effects of the intervention could not necessarily be differentiated from possible effects of exercise in general. It was the authors recommendation that future studies include 3-arm RCTs comprising of DMT, exercise, and TAU groups (Martin et al., 2016). This proposed design would control for the possible limiting effect of general exercise as an unrecognized variable.

Methods

An online literature search was conducted using the University of North Dakota Harley E. French Library of the Health Sciences focusing specifically on CINAHL, PsycInfo, PubMed, and Cochrane databases to identify literature related to the use of arts therapies in the treatment of schizophrenia. For each of the researched therapies, the search terms *schizophrenia* and the respective arts therapies (*art therapy*, *music therapy*, and *dance*/*movement therapy*) were used in all four databases in order to initiate the literature search process. Articles were limited to those published within the past five years, available in the English language, and peer reviewed.

Within the context of the noted search parameters, a search of the terms "*schizophrenia*" AND "*art therapy*" resulted in 158 articles total (Cochrane = 0, CINAHL = 12, PsycInfo = 97, PubMed = 49) that were ultimately narrowed down to a total of four articles which were considered relevant to the focus of the literature review. When searching the terms "*schizophrenia"* AND "*music therapy*" a total of 99 articles were produced (Cochrane = 1, CINAHL = 11, PsycInfo = 59, PubMed = 28) that after further reviewed for inclusion were narrowed down to seven articles. Finally, the search of the terms "*schizophrenia*" with "*dance/*

movement therapy" initially revealed 26 articles (Cochrane = 1, CINAHL = 4, PsycInfo = 9, PubMed = 12) that upon further evaluation were limited to a total of four articles deemed suitable for review.

Rationale for the rejection of articles for review was multifaceted. Some articles were duplicates within the different databases. Others were not considered for review either because they were generalized to multiple nonpharmacologic or adjunct therapies or because they were not specific to the diagnosis of schizophrenia but instead combined two or more mental health diagnoses. Priority was given to articles where the arts intervention was facilitated by a licensed professional in the specific field of study. Additionally, case studies were not included in the reviewed literature as they were not felt to provide substantial data to support the research inquest.

In hopes of increasing knowledge and facilitating discussion as it relates to holistic care in mental health, specifically the arts therapies and schizophrenia, a Power Point presentation (see appendix) will be presented to staff and fellow PMHNP students at the University of North Dakota School of Nursing. Additionally, a version of the presentation will be made available to staff at the HOPE (Healing and Opportunities with Psychotic Experiences) Program at Hennepin County Medical Center (HCMC). The HOPE Program is available to individuals experiencing first episode psychosis and is its goal is to provide comprehensive interventions that aid in recovery (HCMC, 2017). By making this review of the literature pertaining to arts therapies as adjunct treatment in schizophrenia available to a larger audience of practitioners, specifically APPNs, patients with this disorder have the opportunity for enriched treatment and healing experiences.

Results

After examining the available research deemed timely and relatable to the inquiry into the efficacy of arts therapies in the treatment of schizophrenia, the comprehensive online search ultimately resulted in 15 articles that were felt relevant for review. The fifteen articles included in this literature review are comprised of six RCTs, one literature review, three meta-analyses, three quasi-experimental studies, and one qualitative study. These articles represent a body of evidence felt to effectively explore the proposed topic of this paper.

Ten of the fifteen studies reviewed found that the respective arts therapy intervention impacted negative symptoms of schizophrenia in a positive way. One of the other most common improvements noted with regard to arts therapies and symptoms of schizophrenia is that of depression. Only five of the studies investigated the effect of arts therapies on depression in schizophrenia, but of the five, four showed significant positive outcomes. Showing less robust results than those of negative symptoms and depression, are those of the positive symptoms of schizophrenia. Of the nine studies that measured this outcome, four produced data that indicated effectiveness of the arts therapy intervention. Other themes that emerged from the studies, include improvement in anxiety, anger, global functioning, perceived interpersonal relationships, and feelings of freedom, connectedness, well-being, and symptoms relief. The outcomes were not measured in any consistent fashion among the fifteen articles reviewed and therefore do not have strength through replication. The findings, however, are felt to be important to note within the context of the larger spectrum of schizophrenia symptoms and outcome effects.

By investigating varying approaches to research, the studies included in this literature search provide a comprehensive view of the available data. The inclusion of both quantitative and qualitative results was intentionally pursued in keeping with the holistic nature of the theoretical framework guiding the intent of this literature review. The discipline of psychiatry is

often regarded as both an art and a science (Chur-Hanson, & Parker, 2005) and thus it was felt prudent to include both objective data as well as narrative accounts of the effect of the identified arts therapies on the experiences and symptoms of those living with schizophrenia.

Discussion

It is recognized that poor functional outcomes and psychosocial disability are associated with the negative symptoms of schizophrenia and antipsychotic medications are limited in their effectiveness in addressing these symptoms (Schmitt, & Falkai, 2015). More than any other variable examined in the different studies reviewed, it is that of the negative symptoms of schizophrenia that most often showed significant response to arts therapies. This is perhaps the most compelling data from the current literature. Because of these results, the APPN should give consideration to arts therapies as interventions when treating patients with schizophrenia. Interventions that address the negative symptoms of schizophrenia offer the possibility to improve psychosocial outcomes which in turn will serve to impact the greater community with which patients interact.

An overreaching goal in treating patients with schizophrenia is to individualize the care given to these individuals. When providing personalized, holistic care, it is recommended that the APPN look to the integration of additional therapies. As was demonstrated in this literature review, arts therapies have been shown to improve multiple facets of a patient's experience with schizophrenia, rendering them a potentially useful intervention in treatment. By considering these therapies for treatment, the APPN shows a willingness to consider care that meets the specific needs of each patient encountered.

In their study, Lu et al. (2013) discussed concern for the lack of licensed music therapists in Taiwan. This observation raises the question of conceivable barriers to access of these arts

therapies in the United States. Dance/ movement therapy, music therapy, and art therapy all of varying levels of education and licensure requirements in the U.S. Additionally, reimbursement for services is not standardized or often available at all which could dissuade interested students from entering into these professional fields.

Dance/movement therapy is credentialed after completion of an American Dance Therapy Association (ADTA) accredited graduate program. Credentialing is then granted at two levels, a Registered-Dance/Movement Therapist and the Board-Certified Dance/Movement Therapist, with the latter requiring greater experience requirements (ADTA, 2017). Music therapists are eligible to practice after completion of an approved college music therapy program in addition to a six-month internship (AMTA, 2017b). Board certification in art therapy requires the completion of an approved art therapy graduate program (American Art Therapy Association [AATA], 2017a.)

All three professional associations affiliated with these three therapies note the challenges with regard to reimbursement for services. For example, Medicare covers fees for music therapy services rendered only in the context of a Partial Hospital Program, six states allow music therapy services to be billed through Medicaid special wavers, and only approximately 20% of music therapists have had success in receiving coverage from third-party reimbursement (AMTA, 2017c). Similar barriers exist with art and dance therapy. Most often, these arts therapies are utilized with a mental health population in the context of psychiatric hospitals, nursing homes, or formal mental health outpatient programs (AATA, 2017b) (ADTA, 2017b) (AMTA, 2017c). It is in recognition of the benefits of arts therapies in the treatment of schizophrenia that encourages the APPN to advocate for their inclusion in settings and programs such as these mentioned.

After review of the literature the evidence presented is, in many regards, positive and points towards benefits of including arts therapies in addition to standard care for patients with schizophrenia. However, due to the identified limitations of high drop-out rates, missing data, small participant numbers, and inconsistent approaches to the applied interventions, it is challenging to draw clear conclusions. As a result of the limitations, the studies presented highlight the need for more research to ascertain the efficacy of arts therapies as adjunctive treatment for schizophrenia.

The recommendation for more research drawn from this literature review includes a number of factors for consideration. Much of the compelling study outcomes came from small studies or those of a quasi-experimental design. Randomized controlled research methodology with large numbers of participants is recommended. In order to replicate the results of the studies and better understand the most effective approach, standardization of objective measures, measurement tools, and arts therapy intervention methods is needed. Additionally, of the arts therapies reviewed for this paper, music therapy provided the most comprehensive body of evidence. Research efforts should continue within all arts therapy disciplines to examine their effect on the symptoms of schizophrenia. Because arts therapies are most accessible to patients with schizophrenia in the context of formal programming, research which supports their inclusion in mental health programs is needed. And finally, future research should also include additional narrative studies in hopes of gaining better appreciation of the gestalt of creative arts therapies.

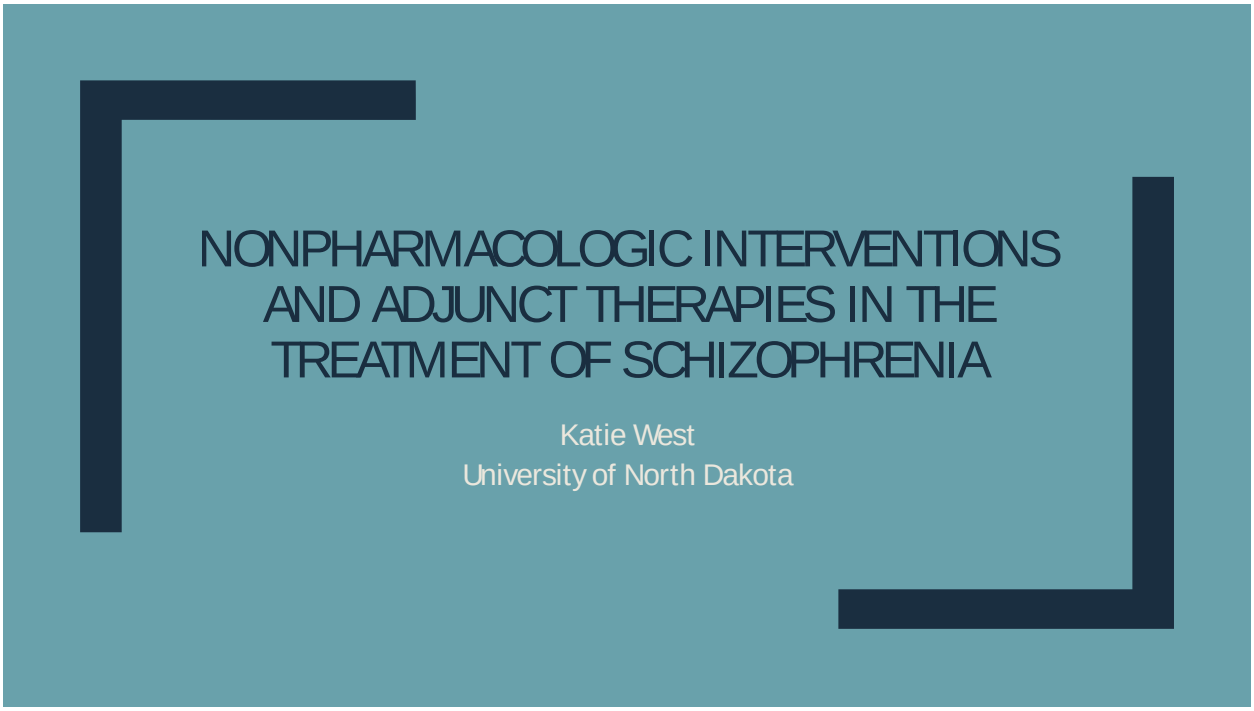
Conclusion

Schizophrenia is sometimes conceptualized as a fragmentation of self (Harder & Rosenbaum, 2015). Positive, negative, and cognitive symptoms impact all aspects of the life of

an individual with this disease. It is the proposed that the utilization of the arts in the treatment of schizophrenia can help rebuild fragmentation and achieve patterns of wholeness (Newman, 1999).

The purpose of this paper has been to investigate the effectiveness of creative arts therapies in the treatment of schizophrenia. This examination allows for a better understanding and appreciation for the role of these therapies as adjunct treatments by the APPN. By reviewing the available literature, the nonpharmacologic interventions of art, music, and dance/movement therapies have demonstrated the ability to have significant impact on the symptoms of schizophrenia as well as the individual's perception of their lived experience. The evidence presented in this paper, as well as the discussion of barriers and research, should compel the APPN to aid in the removal of barriers to access, advocate for future research, and continue to stay abreast of new, emerging research in art therapies in the treatment of schizophrenia. By doing so, the APPN is in a position to provide holistic care, that is supported by evidence, for their patients who are living with schizophrenia.

Appendix


NONPHARMACOLOGIC INTERVENTIONS AND ADJUNCT THERAPIES IN THE TREATMENT OF SCHIZOPHRENIA
Katie West
University of North Dakota


INTRODUCTION
Background, impact, and current treatments for schizophrenia

Schizophrenia

- A severe, chronic, and potentially disabling psychiatric disorder
- Characterized by positive, negative, and cognitive symptoms
- Affects approximately 1 in every 100 adults in the U.S. annually (NIMH, 2017)
- Economic impacts estimated to be up to $102 billion annually (Chong et al., 2016)
  - *Direct Costs*
    - Treatment, hospitalizations, programming, and emergency room visits
  - *Indirect Costs*
    - Unemployment, disability, and homelessness

Current Treatments: Pharmacologic

- Standard of care widely considered to be pharmacotherapy
- Challenges of pharmacotherapy include: (Patel, Cherian, Gohil, & Atkinson, 2014)
  - *Medication side effects*
  - *Treatment non-adherence*
  - *Persistence of residual symptoms*
- Implication of these challenges (Lindenmayer et al., 2009)
  - *Increased use of emergency rooms*
  - *Increased inpatient hospital readmissions*
  - *Exacerbation of symptoms*
  - *Relapse*

Current Treatments: Nonpharmacologic

- Nonpharmacologic treatments have been found to assist in the enhancement of pharmacotherapy (Patel et al., 2014)
  - *Helping to support medication adherence*
  - *Impacting symptomatology*
- Psychosocial treatments: Regularly used in treatment
  - *Psychotherapy*
  - *Psychoeducation*
  - *Vocational rehabilitation*

Many other nonpharmacologic treatments exist that warrant further examination

PURPOSE

Purpose

- Investigate nonpharmacologic interventions in the realm of the creative arts
  - *Art Therapy*
  - *Music Therapy*
  - *Dance Therapy*
- Provide the APPN with a better understanding of the therapies available to enhance care and treatment of patients with schizophrenia
- Identify which therapies are supported by the evidence
- Recognize existing barriers to the application of the therapies
- Identify future work and research in the realm of creative arts therapies and schizophrenia

SIGNIFICANCE

Significance

- Significant implications for health and wellness exist for people with schizophrenia
  - *Greater risk for homelessness* (Foster, Gable, & Buckley, 2012)
  - *Die earlier than the general population* (Olfson, Gerhard, & Huang, 2015)
  - *Are at a higher risk for suicide* (Bornheimer, & Nguyen, 2016)
- Nonpharmacologic interventions help in the management of negative symptoms (Geretsegger et al., 2017)
- Improved outcomes from nonpharmacologic interventions warrants further study
- Holistic care integrates care which transcends purely biologic functions
- Transformative properties of creativity lend to its role in fostering and improving mental and physical health (LeNavenec & Bridges, 2005)
- With greater comprehension of the breadth of available adjunct therapies, the APPN can utilize, advocate for, and provide holistic care, which is in keeping with the foundations of nursing practice.

THEORETICAL FRAMEWORK

Margaret Newman's Theory of Health as Expanding Consciousness

Health as Expanding Consciousness

- The absence of disease or disability is not a definition of health for all people
  - *Schizophrenia is a chronic illness – the absence of disease may not be an obtainable goal*
- Humans are whole, unitary beings, and cannot be divided into smaller parts
  - *Treatment of schizophrenia should encompass the whole person and all symptomatology*
- Consciousness relies on the interconnectedness of energy systems
  - *The arts are known to draw inspiration from the environment, act as a means of communication, promote self-expression, and convey meaning*

(Newman, 1999)

DEFINITIONS

Definitions

- **Schizophrenia:** a chronic and sever mental disorder that affects how a person thinks, feels, and behaves. Schizophrenia tends to involve abnormalities in five symptoms domains including hallucinations, delusions, disorganized thinking, disorganized or abnormal motor behavior, and negative symptoms
- **Positive Symptoms:** psychotic behaviors not usually seen in healthy people such as hallucinations, delusions, unusual thoughts, and agitated body movements
- **Negative Symptoms:** associated with disruptions in emotions and behaviors as evidenced by flattened affect (reduced facial expression or voice tone), reduced feelings of pleasure, difficulty initiating and sustaining activities, and reduced speaking
- **Cognitive Symptoms:** changes to memory or thinking which may encompass poor executive functioning, trouble focusing, and impaired working memory

Definitions

- **Art Therapy:** Art Therapy is an integrative mental health and human services profession that enriches the lives of individuals, families, and communities through active art-making, creative process, applied psychological theory, and human experience within a psychotherapeutic relationship.
- **Music Therapy:** Music Therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program. Music Therapy is an established health profession in which music is used within a therapeutic relationship to address physical, emotional, cognitive, and social needs of individuals.
- **Dance/ Movement Therapy:** the psychotherapeutic use of movement to promote emotional, social, cognitive and physical integration of the individual.

METHODS

Online literature search: UND Harley E. French Library of the Health Sciences

- Databases: CINAHL, PsycInfo, PubMed, Cochrane
- Search terms: *Schizophrenia* AND the respective *arts therapy*
- Limitations: Published in the past 5 years, English, peer reviewed

Rationale for Selection/ Rejection of Articles from Initial Search

- Duplicate articles from different databases were dismissed
- Articles were not chosen when the intervention was generalized to multiple nonpharmacologic treatments
- Studies were rejected if they were not specific to the diagnosis of schizophrenia
- Studies were rejected if data was deemed poor
- Priority given to studies where a licensed professional in the field of study was facilitating the intervention

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Search Results

- Six randomized-controlled trials (RCTs)
- One literature review
- Three meta-analyses
- Three quasi-experimental studies
- One qualitative study

LITERATURE REVIEW

Art Therapy

- Crawford et al. (2012) (MATISSE Study)
  - *Large-scale RCT (N=417)*
  - *Three arms: AT, Activity group, TAU*
  - *GAF, PANSS*
  - *12 mos. of intervention, 24 mo. f/u*

  No significant results indicating benefit of the utilization of art therapy
- Qiu, Ye, Huan, Lieu, & Lu (2017)
  - *RCT (N=194)*
  - *Prison inmates in mainland China*
  - *Two groups: AT + TAU, TAU*
  - *48 week study*
  - *PANSS, BDI, STAI, STAXI, staff survey*

  Significant improvement in state anger, state anxiety, depression, and (-) symptoms

Art Therapy

- Montag et al. (2014)
  - *RCT (N=58)*
  - *Two arms: AT + TAU, TAU*
  - *SAPS, SANS, GAF, CDSS*

  Significant improvement in (+) & (-) symptoms, and global functioning
- Ruiz, Aceituno, & Rada (2017)
  - *Literature review*
  - *Quantitative & Qualitative Studies*
  - *20 articles over 10-year period*

  Not sufficient evidence to claim AT's role in improving symptoms of schizophrenia. However, results show that AT provided clients with enhanced self-awareness and self-esteem as well as improved emotional expression, and connection with themselves, reality, and social network

Music Therapy

- Mohammadi, Minahs, Haidari, & Pahah (2012)
  - *Quasi-Experimental Study (N=96)*
  - *Three arms: Active MT, Passive MT, No MT intervention*
  - *4-week intervention, no f/u*
  - *SAPS, SANS*

  MT showed significant effect with (-) symptoms. Anhedonia-asociality SANS subscale also showed significant effects.
- Trent et al. (2016)
  - *Meta-analysis*
  - *12 articles, 402 participants*

  MT has significant effect on (+) & (-) symptoms. MT session number, length, and frequency felt to have no impact on results

Music Therapy

- Geretsegger et al. (2017)
  - *Meta-analysis*
  - *18 studies, 1215 participants, 240 sessions*
  - *Two armed studies: MT & placebo* or *MT & no treatment intervention*

  MT seems to have positive effects with regard to depressive, anxiety, and general negative symptoms as well as improvement in quality of life. Results suggest a minimum of 20 MT sessions are needed to show clinical efficacy.

Music Therapy

- Jeon, Gang, & Oh (2016)
  - *Quasi-experimental study (N=38)*
  - *Korean forensic psychiatric hospital*
  - *MT intervention using Nanta-program*
  - *BPRS*

Affect, (-) & (+) symptoms, resistance, and activation all showed improved scores. "The active engagement in beating drums during each session, also helped subjects develop the ability to perceive, express and transform strong and potentially destructive emotions into acceptable and constructive expressions" (Jeon, Gong, & Oh, 2016, p. 97).

Music Therapy

- Kwon, Gang, & Oh (2013)
  - *Quasi-experimental study (N=55)*
  - *Two groups: MT, TAU*
  - *EEG, NOSIE, MMSE*

Significant alpha-wave changes in frontal, prefrontal, temporal, and parietal sites in were noted, representing physical and emotional relief experienced with the stimulation of music. Increases were found in language and construction, and attention and calculation. Significant improvements were noted in patients' behaviors following the group MT.

Music Therapy

- Lu et al. (2013)
  - *RCT (N=80)*
  - *Eastern Taiwan nursing home*
  - *Two groups: MT, TAU*
  - *PANSS, CDSS*

  Significant improvement in (+) & (-) symptoms as well as depression scores. At three- month follow up, no significant change was identified.
- Solli & Rolvsjord (2015)
  - *Qualitative study (N=9)*
  - *30-60 minute weekly individual MT session and 45-minute group MT sessions*

  Emerging themes: freedom (from illness, stigma, and treatment), contact (with oneself, emotions, other people), well-being (enjoyment and satisfaction, motivation, mastery, and symptom relief (from disturbing thoughts and voices, visual hallucinations, and psychotic states).

Dance/ Movement Therapy

- Ren & Xia (2013)
  - *Meta-analysis*
  - *1026 articles screened, 1 met inclusion criteria*

  The evidence was not sufficient to support or refute the use of dance therapy in the treatment of schizophrenia.
- Koch, Hirjak, & Fuchs (2016)
  - *RCT (N=68)*
  - *Two arms: DMT + TAU, TAU*

  The results show that the DMT group had significantly reduced negative symptoms of schizophrenia following the intervention. Additionally, the negative symptom sub-type of attention deficits was also significantly reduced in the experimental group at post-test.

Dance/ Movement Therapy

- Priebe et al. (2016)
  - *RCT (N=256)*
  - *Two arms: DMT, Pilates*
  - *PANSS, secondary measures of psychopathology, social contact, cost-effectiveness, and quality of life*

  Results after intervention and after a six-month follow up did not show any significant benefit to the intervention of DMT over Pilates with regard to the negative symptoms of schizophrenia or cost-effectiveness.
- Lee, Jang, Lee & Hwang (2015)
  - *Quasi-experimental study (N=38)*
  - *Two groups: DMT + TAU, TAU*
  - *PANSS, BDI, STAI, STAXI*

  The experimental group showed significant improvement in (-) symptoms and depressive symptoms as compared to the control group receiving just standard medical care

OUTCOMES/ DISCUSSION

Limitations, Barriers, Recommendations, & Future Research

Outcomes

- 10 of 15 articles showed significant improvement in **negative symptoms** of schizophrenia
- 4 of 5 studies which measured effect of creative arts therapy intervention on **depression** showed significant improvement
- 9 studies investigated arts therapy interventions on **positive symptoms** with 4 resulting in positive outcomes
- Other emerging themes
  - Improvement in **anxiety, anger, global functioning,** and **perceived interpersonal relationships**
  - Feelings of **freedom, connectedness, well-being,** and **symptoms relief**

Study Limitations

- Small sample sizes
- High drop-out rates
- Missing data
- Inconsistent approaches to applied interventions

Barriers

- High drop-out rates in non-controlled settings - comparable to real-life challenges with adherence to treatment.
- Lack of available practitioners
  - *Variable educational requirements for licensure and certification*
- Limited options for reimbursement for services
  - *Most often creative arts therapies are utilized with a mental health population in the context of psychiatric hospitals, nursing homes, or formal mental health outpatient programs*

Future Research

- In order to replicate the results of the studies and better understand the most effective approach, standardization of objective measures, measurement tools, and arts therapy intervention methods is needed.
- It is recommended that future researchers apply RCT methodology with larger numbers of participants.
- Of the arts therapies reviewed, music therapy provided the most comprehensive body of evidence.
  - *It is recommended that research efforts continue within all arts therapy disciplines to examine their effect on the symptoms of schizophrenia*
- Future research should include additional narrative studies in hopes of gaining better appreciation of the gestalt of arts therapies

Recommendations

- APPN should advocate for the inclusion of arts therapies in mental health programming
- APPN should aid in the removal of barriers to access, advocate for future research, and continue to stay abreast of new, emerging research in these fields of study
- When providing personalized, holistic care, it is recommended that the APPN look to the integration of additional therapies
  - *By considering these creative arts therapies for treatment, the APPN shows a willingness to consider care that meets the specific needs of each patient encountered.*

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