

EFFECTIVENESS OF MUSIC THERAPY IN THE PSYCHO- SOCIAL MANAGEMENT OF PATIENTS WITH SPINAL CORD INJURY

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ABSTRACT

Music therapy helps in a wide range of pain conditions, primarily by its ability to improve mood, encourage relaxation and increase threshold. Therefore the study examined how effective music therapy is in the psychosocial management of patients with Spinal Cord Injury. The study was carried out among 120 registered members of the Spinal Cord Injury Association of Nigeria Rehabilitation Center located in Amuwo-Odofin in Lagos. The participants were purposively selected. Pre-test/post-test quasi experimental research design was adopted for the study. The participants received music therapy sessions in groups twice in a week for eight consecutive weeks. Goals included reducing pain, increasing mood and spiritual well-being, as well as improving their overall quality of life. Pain, physical well-being, social well-being, emotional well-being, mental well-being and spiritual well-being were assessed at the end of the 8th week. Five hypotheses were tested at 0.05 level of significance, using One Way Analysis of Variance (ANOVA). Findings from the study established that music therapy significantly reduced the pain experienced by spinal cord injury patients. It was also established that music therapy significantly enhanced physical, social, and spiritual well-beings of the spinal cord injury patients. However, music therapy did not significantly enhance the psychological well-being of the spinal cord injury patients; though the result was positive. The study recommended that medical social workers should incorporate music therapy into array of social services rendered to patients and relatives. Also, administrators of hospitals, hospices and rehabilitation homes should establish Music Units for the benefits of patients and relatives.

KEY TERMS: Effectiveness, music therapy, psycho-social management, patients, spinal Cord Injury, Nigeria

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INTRODUCTION

Music is said to be life, it is the harmonious arrangement of sounds from instruments or people to produce a desired effect. Music is as old as the universe as it is evident in every culture and it is passed down from generations to generations. It is like language that can be considered as a human universal that reaches deep into our species' pasts (Nettl, 2000). Recent archaeological findings suggest that playing music has been part of human culture for over 30,000 years (Conard, Malina, & Münzel, 2009). Music accompanies all events and circumstances whether good or bad. It announces joyous situations such as marriages, naming ceremonies, house warming and others; also, it cannot be separated from people's responses to bereavement, war, disappointment and loss (Trotter, 2005, Benjamin, 2006).

Music therapy is generally defined as a systematic process of intervention wherein the therapist helps the client to promote health using musical experiences and the relationships that develop through them as dynamic forces of change (Bruscia 1998). It is a form of

psychotherapeutic method as it addresses intra and inter-psychic processes using music interaction as a means of communication and expression. It resolves the inner conflicts that cannot be verbalized with its soothing power of lyrics and rhythms. Approaches in music therapy can be into two distinct areas; the active/receptive approach (Drieschner 2002). The active approaches entail the usage of musical instruments, free improvisation and reproduction of songs. Receptive technique includes listening to music played by the therapist for the client and listening to recorded music selected by either therapist or client. Some aspects of music therapy include music making, listening to music, writing songs, talking about lyrics. It may also involve imagery.

The therapeutic effectiveness of music therapy cannot be over emphasized in medicine today. It is useful in the hospitals, hospices, homes for the elderly, home for the physically and mentally challenged people, as well as Spinal Cord Injury rehabilitation centres (Mojoyinola, 1999, Sinai Health System, 2013). This therapy is

efficacious in the psychosocial management of SCI victims in coping with pain and dealing with a wide range of psychological, social, and emotional difficulties faced by them.

Spinal cord injury (SCI) refers to as any injury to the spinal cord. It is mostly caused by trauma instead of disease (Taber, Wilbur et. al. 2009). Spinal Cord Injury can also be of a non-traumatic origin, as in the case of cancer, infection, inter-vertebral disc disease, vertebral injury and spinal cord vascular disease (Van, Maayken, Castellote, De Pedro-Cuesta, Jesús; Mahillo-Fernandez, Ignacio 2010). SCI usually begins with a sudden traumatic blow to the spine that fractures or dislocates vertebrae resulting in the loss of motor function and sensation. It is a devastating event that has not only physical effect but also social and psychological effects on the injured person, the spouses, the children, the extended family members and the society at large by increasing its economic burden and making it a major global public health issue presently and in years to come (Singh, Rohilla, Siwach, Dhankar, & Kaur, 2012).

Alongside with this medical diagnosis are social diagnoses heralded by the injury which are handled by medical social workers who are specialists in identifying, treating and managing the patients' psychosocial issues that interfere with their medical treatments during and after hospitalization. The psychosocial issues include; depression, stress, anger, rage, bitterness, rejection, loneliness, social isolation, suicidal thoughts, low self esteem, damaged self image, poor social functioning, inadequate social support, loss of relationships and others (UPMC Rehabilitation Institute, 2015; Singh et. al. 2012).

Rehabilitation is concerned with not only physical recovery but also with psychological and social recovery and re-integration (or integration) of the person into the community. Physical rehabilitation has been subjected to systematic study and refinement, resulting in highly developed approaches that have increased longevity by reducing morbidity and mortality of SCI patients but its psychosocial aspects have been relatively neglected. The

psychosocial strategies include administration of various forms of psychotherapy such as diversional therapy, group therapy, family therapy, dance therapy, milieu therapy, transpersonal therapy, occupational therapy, recreational therapy and music therapy. The effectiveness of music therapy in the psychosocial management of SCI patients was examined in this research work.

The effectiveness of group music therapy in the psychosocial management of patients with various illnesses has been confirmed in previous researches. Music had been found efficacious in reducing pain in chronic illnesses (Bradt, Dileo, 2009), patients with mental illness (Mojoyinola, 1999), in post-operative pain (Nilsson, 2003; Hooks, 2014), and pain experienced by spinal cord injury patients (Mark 2000, Chankrachang 2011). However, studies by Kim (2005), Cadigan, Caruso, Haldeman, McNamara, Noyes, Spandafora, and Carroll, (2001), MacDonald, Mitchell, Dillon, Serpell, Davies, and Ashley, (2003) showed that music therapy did not reduce the pain perception of stroke victims and surgery patients. It had been found that positive

physiological responses accompanied music listening in a research (Khalfa, Bella, Roy, Peretz & Lupien, 2003). Health System (2013) discovered music therapy to be beneficial to patients with brain injury, stroke, spinal cord injury, and amputation in regaining functionality. Alvani, Seyed, Mehrshad, Hosseini, Shokoofeh. Alvani (2012) found that music therapy altered the breathing and heart rate of patients.

Furthermore, Kim (2005) found that revealed that music therapy is useful in enhancing the psychological / emotional well-being of stroke victims by increasing their positive emotions. Mitchel, (2007) also discovered that music therapy has the ability to affect emotional consequences. Lee and Nantais (1995) found music therapy to be useful among Spinal Cord Injury patients in the promotion of their social interaction. It is also revealed that music had complementary effects on social functioning during acute rehabilitation of stroke and traumatic brain injured people (Baker, Wigram, & Gold, 2005; Thaut, Gardiner, Holmberg, Horwitz, Kent, Andrews, et al. 2009). Sinai Health System (2013)

indicated that music therapy helped patients meet their social needs.

It is further confirmed that music therapy helps a traumatic spinal cord injured person discover new symbols, forms and patterns to giving life meaning (Amir, 1990). Halstead and Roscoe (2002) found that music enables patients to connect with God themselves, others, nature and religions. Cook and Sillverman (2013) revealed that passive listening to music promotes spiritual well-being by increasing closeness to God.

It is against the background that the effectiveness of music therapy in the psychosocial management of Spinal Cord Injury patients is been examined by this paper with the raising of hypotheses:

- i. Music therapy will not be significantly effective in reducing pain associated with spinal cord injury.
- ii. Music therapy will not be significantly effective in enhancing the physical well-being of Spinal Cord Injury patients.

- iii. Music therapy will not be significantly effective in enhancing the psychological well-being of Spinal Cord Injury patients.
- iv. Music therapy will not be significantly effective in enhancing the social well-being of Spinal Cord Injury patients.
- v. Music therapy will not be significantly effective in enhancing the spiritual well-being of Spinal Cord Injury patients.

METHODOLOGY

A quasi (pre-test-post-test) experimental quantitative research design was adopted for this study. The population consisted of 200 registered members of Spinal Cord Injury Association of Nigeria (SCIAN), Amuwo-Odofin, Lagos whose membership cuts across the country. Purposeful non-probability sampling technique was used to select 120 Spinal Cord Injury patients in the Rehabilitation Centre as sample for the study.

Two structured questionnaires were used as instruments for data collection. The first instrument was tagged

“Music Therapy Assessment Questionnaire (MTAQ) and was divided into three sections. Section A, contains socio-demographic items like sex, age, marital status, while Section B contains 13 items personally developed to measure the involvement of patients in music therapy sessions. The items were structured to reflect 4-point rating scale. Section C contains 3 items adopted from McGill Pain Questionnaire (Melzack, 1975) to measure the quality of pain experienced by patients.

The second instrument used for the study was a questionnaire tagged “Well-being Assessment Questionnaire” (WBAQ). This was divided into five sections, namely Section A, B, C, D, E. Section A contained 12 items measuring physical well-being of the patients after listening to different music. The items were adopted from “World Health Organization, (Five) Well-Being Index” and “Functional Assessment of Chronic Illness Therapy (non-illness version) Physical Well-Being Scale (WHO, 2006, FACIT, 2010)”. Section B contained 6 items measuring social well-being of the patients after listening to different genres of music. The

items were adopted from “FACIT Social Well-Being Scale (FACIT, 2010)”.

Section C contained 6 items measuring emotional well-being of the patients after listening to different genres of music. The items were adopted from “FACIT Emotional Well-Being Scale (FACIT, 2010)”. Section D contained 14 items measuring mental well-being of the patients after listening to different music. The items were adopted from the “Warwick-Edinburgh Mental Well-being Scale (WEMWBS, 2006)”. Section E contained 12 items measuring spiritual well-being of the patients after listening to different music. The items were adopted from “Spiritual Index of Well-Being (SIWB, 2005)”.

Using a pilot study from Cheshire Home of Handicap, Oluyole Area, Ibadan, the reliability co-efficient of each instrument obtained was Music Therapy Assessment Questionnaire ($r = 0.79$) and Well-being Assessment Questionnaire ($r = 0.73$).

For the purpose of ethical consideration, approval to carry out the research was sought and obtained from the Chairman of the Centre. Also the consent of the respondents participating in the study was sought and got by the researchers.

Pre-test was conducted for the 120 participants by administering the questionnaires, there-after, they were exposed to music therapy sessions twice a week for eight consecutive weeks. After the sixteenth music therapy session, the post test was conducted for these participants using the same questionnaires. The music sessions occurred in a group between the hours of ten and twelve noon. The common goals included increasing positive mood, improved spirituality, strengthened coping skills and the overall enhancement of life. The research instruments were personally administered to the respondents by the researchers and with the help of the research assistants, before and after the music therapy sessions. (The respondents were assured that the pieces of information retrieved from them via the questionnaires

would be treated as confidential, as these pieces of information would be solely used for research purpose.)

The research hypotheses were tested at 0.05 level of significance, using One Way Analysis of Variance (ANOVA).

RESULTS

Hypothesis 1: Music therapy will not be significantly effective in reducing pain associated with spinal cord injury.

Table I: *Analysis of Variance (ANOVA) showing the effectiveness of Music therapy in reducing Pain experienced by Spinal Cord Injury patients*

Variance	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.899	4	2.899	18.768	.004
Within Groups	93.893	115	82.760		
Total Variance	96.792	119			

Table I shows that music therapy was significantly effective in reducing the pain experienced by Spinal

Cord Injury patients ($F(4, 115) = 18.768, P < 0.05$). Therefore the null hypothesis is rejected. The above result indicated that music therapy reduced the pain experienced by this group.

This finding is in line with the findings of Bradt and Dileo (2009) that music listening can relieve pain in chronic illnesses. The above finding is also consistent with the finding of Nilsson (2003) and Hooks (2014) that listening to music in post-operative period may reduce post-operative pain. This finding is consistent with the finding of Mark (2000) and Chankrachang (2011) that music therapy was effective in reducing pain experienced by 23 Spinal Cord Injury patients.

Hypothesis 2: Music therapy will not be significantly effective in enhancing the physical well-being of patients with Spinal Cord Injury.

Table II: *Analysis of Variance (ANOVA) showing the effectiveness of Music Therapy in enhancing the Physical Well-Being of patients with Spinal Cord Injury*

Variance	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	7.778	3	7.778	8.402	.021
Within Groups	96.001	116	82.760		
Total Variance	103.779	119			

Table II shows that music therapy was significantly effective in enhancing the physical well-being of the Spinal Cord Injury patients ($F(3, 116) = 8.402, P < 0.05$). Thus, the null hypothesis is rejected. This finding agrees with the findings of Khalfa, et. al. (2003) that positive physiological responses accompanies music listening. The finding gives support to the finding of Health System (2013) that music therapy was beneficial for patients living with brain injury, stroke, spinal cord injury, amputation for regaining functionality. The finding is consistent with the finding of Alvani, Mershad, Hosseini (2012) that music therapy altered the breathing and heart rate of patients.

Hypothesis 3: Music therapy will not be significantly effective in enhancing the psychological well-being of patients with Spinal Cord Injury.

Table III: *Analysis of Variance (ANOVA) showing the effectiveness of Music Therapy in enhancing the Psychological Well-Being of patients with Spinal Cord Injury*

Variance	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	46.814	3	46.814	12.398	.069
Within Groups	96.001	116	82.760		
Total Variance	142.815	119			

Table III shows that music therapy was not significantly effective in enhancing the psychological well-being of the spinal cord injury patients ($F(3, 116) = 12.398, P > 0.05$). Thus the null hypothesis is accepted. Though the above result was not significant it demonstrated positive effects. That is music therapy is effective in enhancing psychological well-being

The finding is consistent with the findings of Kim (2005), Munte (2007) that music therapy helps stroke victims to recover fast by increasing patient's positive emotions. The finding agrees with the finding of Mitchel, et.al. (2007) that music therapy has the ability of affecting emotional consequences.

Hypothesis 4: Music therapy will not be significantly effective in enhancing the social well-being of patients with Spinal Cord Injury.

Table IV: *Analysis of Variance (ANOVA) showing the effectiveness of Music Therapy in enhancing the Social Well-Being of patients with Spinal Cord Injury*

Variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.129	3	9.129	5.815	.007
Within Groups	96.001	116	82.760		
Total Variance	105.130	119			

Table IV reveals that music therapy was significantly effective in enhancing the social well-being of the Spinal

Cord Injury patients ($F(3, 116) = 5.815, P < 0.05$). Thus the null hypothesis is rejected.

This result is consistent with the findings of Baker et al. (2005) and Thaut, et al., (2009) that music had complementary effects on social functioning during acute rehabilitation of stroke and traumatic brain injured people. The finding supports the findings of Sinai Health system, (2013) that music therapy helped patients to meet their social needs. This finding also agrees with the finding of Lee and Nantais (1995) that music therapy was very useful among Spinal Cord Injury patients in the promotion of their social interaction.

Hypothesis 5: Music therapy will not be significantly effective in enhancing spiritual well-being of patients with Spinal Cord Injury.

Table V: *Analysis of Variance (ANOVA) showing the effectiveness of music therapy in enhancing the spiritual well-being of patients with Spinal Cord Injury*

Variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	263.426	3	263.426	38.017	.020
Within Groups	96.001	116	82.760		
Total Variance	359.427	119			

Table V shows that music therapy was significantly effective in enhancing the spiritual well-being of patient's with spinal cord injury ($F(3, 116) = 38.017, P < 0.05$). Therefore, the null hypothesis is rejected.

The finding supports the finding of Amir (1990) that several sessions of music therapy helped in discovering new symbols, forms and patterns to giving life meaning. Also this finding gives supports to the finding of Halstead and Roscoe (2002) that music enables patients to connect with God, themselves, others, nature or religions. The finding is in line with the finding of Cock and Silverman (2013) that passive listening promotes spiritual wellbeing by increasing closeness to God.

DISCUSSION OF FINDINGS

The result obtained from testing the first hypothesis indicated that music therapy helped to reduce the pain experienced by the patients with Spinal Cord Injury. This implies listening to various genres of music help diverting the mind of patients from their pains. The result obtained from testing the second hypothesis revealed that music therapy had significantly effect on the physical well-being of patients with Spinal Cord Injury. It implies that SCI patients rapidly experienced improvement in their physical conditions when introduced to music therapy. The result obtained from the third hypothesis indicated that music therapy had no significant effect on psychological well-being of the SCI patients. This implies that the music therapy did not bring about much or great psychological well-being to the patients, but to some extents, music therapy enhances it

The result obtained from testing the fourth hypothesis revealed that music therapy was significantly effective in enhancing the social well-being of SCI patients. This implies that music therapy improves the social interactions and group cohesion of patients thereby

reducing boredom and social isolation. The result obtained from the testing of the fifth hypothesis indicated that music therapy was significantly effective in enhancing the spiritual well-being of the SCI patients by moving them closer to the Supernatural being and give them new definitions of life. These findings underscore the need to adopt this non-invasive complementary therapy in our health facilities, hospices and rehabilitation units to improve the quality of life of patients especially those facing life limiting situations.

This study demonstrated that music therapy was effective in the psycho-social management of patients with spinal cord injury. It reduced their pain, and enhanced their well-being. Therefore, it can be summarily concluded that when Spinal Cord Injury patients are offered music therapy as in adjunct treatment with medical treatment; their qualities of life would be enhanced, they will experience diminished negative symptoms (pain, anxiety, depression e.t.c.), increased ability to converse with others, reduced social isolation and increased interest in external world.

IMPLICATIONS OF THE STUDY

Findings from this research have proven the efficacy of music therapy in enhancing the quality of life of Spinal Cord Injury patients. This however has good implication for the Government and management of Hospices or rehabilitation units to adopt this complementary therapy to ease clients' stress and affirm their lives by making policies to incorporate this effective therapy into their service deliveries. This implies that the Spinal Cord Injured ones would find inner strength in music, enhanced spirituality, cope better with the life-long condition and meet their psychosocial needs when listening to music. Their family members would also find solace in music when pressed by the burden of care for their loved ones.

RECOMMENDATIONS

Based on the findings, it is therefore recommended that music therapy be incorporated in the services provided by the hospitals, hospices, and rehabilitation units, to

complement the treatment and care given to patients and clients. Music unit should be created in the medical facilities and rehabilitation units in which staffs, clients and family members could visit when stressed. Individually, patients should make provision for music listening while on ward it would facilitate quick recovery from illness when combined with the other regime of care. When discharged home, it would further promote well-being and increased social interaction with the family members.

It is suggested that clinicians including medical social workers should continue to conduct research in this area, educate others on the benefits of using different techniques of music therapy in the rehabilitation of patients and share research findings as well as clinical techniques with other music therapy professionals. Based on the nature of the research and the limitations observed, it is suggested that this research be replicated on the same population with a larger size and a longer duration using individual music session technique so as

to address specific emotional issues of each client with the chosen preferred music.

In conclusion, the efficacy of music therapy cannot be undermined in the psycho-social management of patients with Spinal Cord injury as it enhances their overall quality of lives.

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