A Study of Using Muscle Relaxation and Music on Aggressive Behaviors of Schizophrenic Patients, Sakaeo Rajanakarindra Psychiatric Hospital

Phongphan Phawo, Burapha University, Thailand

Asian Conference on Psychology and the Behavioral Sciences 2015
Official Conference Proceedings

Abstract
The purpose of this study was to compare the aggressive behaviors of schizophrenic patients before and after receiving muscle relaxation and music program. The samples of this study were 20 schizophrenic patients from Sakaeo Rajanakarindra Psychiatric hospital, who met the inclusion criteria. Instruments for this study were muscle relaxation and music program for schizophrenic patients, overt aggression questionnaire. They were examined for content validity by three professionals and reliability test for the questionnaire. The reliability of the questionnaire was .85. Statistical techniques for data analysis were percentage, mean, standard deviation and paired t - test. The major findings were as follow: The aggressive behaviors of schizophrenic patients after using muscle relaxation and music program were significantly lower than before receiving it at the significance level of .05.

Keyword: muscle relaxation /music/aggressive behaviors /schizophrenic patients

Introduction

The statistic from the Department of Mental Health, Ministry of Public Health, reported that there were 335,202 admitted schizophrenic patients in 2005 - the majority, 172,648, were suffered from schizophrenia (Department of Health, 2005). Schizophrenia is one of the major psychiatric disorders because it is the most severe mental illness. The extent behavior in schizophrenic patients is aggression (Kotchaphong Sarakan, 1999).The behavior of the schizophrenics is a condition that represents an unusual idea, emotion, and behavior; shows disabilities of controlling his/her emotion; harms him/herself, others, and stuffs; is needed to get a rapid assistance; and must be treated in a hospital. (Chawiwan Sattayatham, 1997).The most common cause of the behavior derived from mental and environmental conditions. Those of mental conditions are those who symptomize the acute phase (Barnett, 2002); becoming aware of hallucination heard by ears which orders the patients to commit suicide,leading them into a paranoid delusion, being afraid of attack, and in a state of confusion (Duangta Kulrattanayan, 1998).However, those of the environment conditions consist of both externaland internal circumstances. The former is noise and the latter is too-strict rules and regulations,too-crowded ward,and air flow (Manot Lotrakun, 1996).

Schizophrenics' aggression, occurring in the wards, whether caused by mentality or environment,can result in these following problems, for instance, a badly-injured patient can be brought to death (Somphop Rueangtrakun, 2002; Cardwell, 1984), or frighten the others, or damage property (Niran Wichienthong, 1998).Plus, the impact on personnel is being maltreated by the patients, which chiefly happens during dealing with the patients and makes them feel anxious, wants to get away from work, even becomes panic and discouraged workers (Thira Lilananthakit, 2541),accordant with the study of the Rose (1992) of which studied the violence towards the staffs in the ER, St. James's Hospital, Ireland. The result shows that after having been as saulted; the staffs get anxious, being afraid of being hurt again. Furthermore, they want to take a vacation or sick leave and quit their job (Lanza, 1992). In addition, the conducts impair the surroundings such as beds, chairs, and food containers, etc. (Tame, 1990). If some of them do not stop the behavior, they may hurt themselves (Chintana Yuniphan, 1984). If unable to cope with the patients, they will get stressed from it (Peter, 2002), resulting in injuring other patients, personnel, and property.

Sakaeo Rajanagarindra Psychiatric Hospital, Department of Mental Health, Watthananakhon District, Sakaeo, characterizes mental health and psychiatry. It is responsible for the care of people with mental health problems and substance abuse in the form of promotion and prevention of mental health problems, treating those who are afflicted with psychosis, and rehabilitating psychotherapy patients. According to the statistic, it determined that, in fiscal year 2548, a total number of admitted schizophrenics were 1,123; schizophrenics as 582 or 51.9 percent. The patients with the violence of damaging property and harming others, were 84 which is equivalent to 14.43 percent. It is seen that there are such many patients with aggression that it can cause harm themselves and others, resulting in the rate of longer admitting and economy loss.

Therefore, the researcher is concerned in using muscle relaxation with music to reduce aggressive behavior in the schizophrenics, agreeing with the role of the hospital, where takes the innovation into action, based on the reviewed research and theory along with the expertise to provide nursing care to let the patients to be able to control and reduce their behavior, to offer the intensive rehabilitation therapy, or co-exist with their families and communities further.

Research Objective

To compare the aggressive behavior in patients afflicted with schizophrenia before and after using muscle relaxation with music

Hypothesis

The aggressive behavior in patients with schizophrenia reduces after using the muscle relaxation with music.

The Scope of the Study

1. The population was the patients who had been diagnosed to be schizophrenics, according to the International Classification of Diseases, Tenth Edition (ICD-10), and have aggressive behavior.

2. The sampleswere20 inpatient schizophrenics at Psychiatric Ward, Sakaeo Rajanagarindra Psychiatric Hospital. The researchers used the questionnaire of violence. The study showed that the behavior was moderate (range 25-36 points) with no delusion or hallucination, but capability of communicating with others and no organic mental disorders or serious complications.

3. Variables in the study
The independent variable is the program of muscle relaxation with music.
The dependent variable is the aggressive behavior.

Expectedly Received Benefits

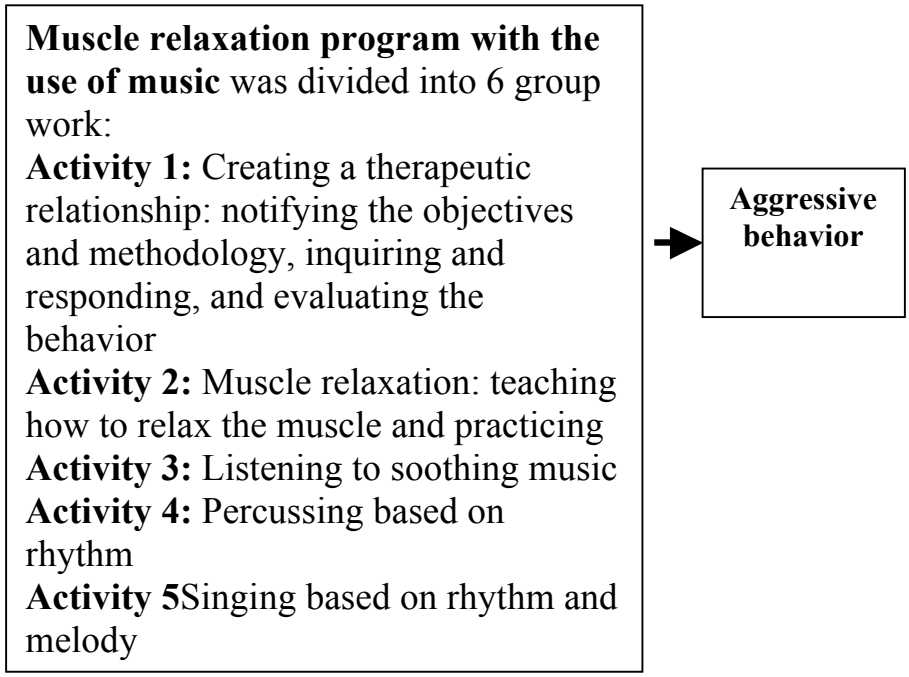
1. To be a method of improving nursing practice in order to help schizophrenics with aggressive behavior.

2. To be a study or research guide to develop knowledge in the field of mental health and psychiatric nursing.

3. To be an approach to improve health care system, nursing service system, and the role of the nurse; using empirical data to be the leader in the field of nursing.

Conceptual framework

To develop the program, the researchers employed a combination of approaches derived from the study of Phatchara Phumphachat (1990), which is the study of music in company with the study of Lance (1982) in the use of muscle relaxation.



Methodology

This study was the One Group Pretest-Posttest Design to study the effect of muscle relaxation with music on the reduction of aggressive behavior in schizophrenics, both before and after use.

The population was the patients who had been diagnosed to be schizophrenics, according to the International Classification of Diseases, Tenth Edition (ICD-10), and admitted at Psychiatric Ward, Sakaeo Rajanagarindra Psychiatric Hospital.

The samples were 20 inpatient schizophrenics at Psychiatric Ward, Sakaeo Rajanagarindra Psychiatric Hospital.

Instruments

The instruments consisted of 2 sets as follows:

1. The instrument conducted in the experiment:
The program of using muscle relaxation with music towards aggressive behavior in patients with schizophrenia developed by Groatein and Foa's concept (1980), for relaxing the muscle, combined with Phatchara Phumphachat's (1990), which related to the use of music therapy on reducing aggressive behavior, into the activities. The objective was to study the use of the program towards the reduction the behavior in schizophrenics at Psychiatric Ward, Sakaeo Rajanagarindra Psychiatric Hospital.
The brief content is as follows:

Activity 1 Creating a therapeutic relationship: Icebreaking, the assessment of aggressive behavior, clarifying and answering questions individually about the purpose and methodology, and setting the rules and the role of the group.

Activity 2 Muscle relaxation: the nurses teaching and demonstrating the activity: relaxing the muscles by letting the patient practice contracting and relaxing the body muscle one by one with 30 minutes each and finally drill together to help reduce anxiety level and stress, improve the personality, consciousness, confidence and self-acceptance. The muscles were divided into 4 groups. The first was hand, forearm, and deltoid muscles. The second was head, face, neck and shoulders with an emphasis on the forehead, cheeks, nose, eyes, jaw, tongue, lips and throat. The third was chest, abdomen and lower back. The last was hip, thigh, calf and foot. Being relaxed can help think more logically and make a better decision than being tense. This will enable better relationship with others.

Activity 3 Listening to soothing music: as the members sat in a circle and in a relaxed posture, the leader played the song, letting them give feedbacks - benefit and suggestion –to generate concentration, memory, and distracting from what the patient attached to;to reduce emotional and psychological stress; to build the relationship among the group; and to motivate themselves.

Activity 4 Percussing based on rhythm: having them seated abreast in the same direction, the leader spread the percussions to all of them, beat the rhythm, and let the members percuss along. Afterward, the leader played the song and let the members do the same. This is to allow the patients to express their emotion, their senses through external obstacles - the provided instrument, thus enjoying and being happy with their abilities as well as reducing tension and aggression.

Activity 5 Singing aloud rhythmically: after having the patients seated abreast in the same direction, the leader managed each member to sing karaoke from their own selected songs. The leader assigned the remaining to play the role of the audiences, and gave an opportunity to freely participate with the singer. Both the leader and the members wrapped-up. This is to offer the opportunity to voice their own pace creatively to drain their heart strains by using singing rhythmically to reduce the pressure driving to the behavior in the patients.

Activity 6 Performing movement with music: turning on the music, the leader let each of them, as a representative, lead each round of the show while the others follow each of the agents. When finished, in order to opportune the patients to move in a different manner, which is catalyzed by the rhythm and melody, to gain more amount of oxygen, the patients learned how to corporate the body with the mind, leading to suitable mood adjustment and better temper control.

The process of selecting the music for the program

1. studied the general component of music and the component specialized for schizophrenics.

2. selected the song which would be used in all of the 6 activities.

The researchers selected soothing music, which composes of these following characteristics (Phimphon Lilawatthanakun, 2003):

1) Rhythm:it is characterized by a slow, stable tempo which makes sense of calm, and helps to relax (Chomnapha Kittisap, 1993, Saowani Sangkhasopon, 1994).

2) Pitch: the pitch at a slow rate will cause tranquil emotion (Chomnapha Kittisap, 1993). The music should have low volume or soft bass (Saowani Sangkha Sophon, 1994), so that it makes listeners feel relaxed and calm.

3) Volume Intensity: the volume of the sound will cause mild peace (Saowani Sangkhasophon, 1994). Listening to the soothing music should be in the range of 40-60 dB, not exceed 90 decibels, because of its discomfort (Chaln, 1998, quoted in Phimphon Lilawathanakun, 1993). Receiving the sound near the ears with a very loud voice could harm the eardrum and lead to deaf (Shealy, 1996, Phimphon Lilawatthana, 2546), so that the selected song will be produced at 40-60 decibels.

4) Melody: it means taking a different tone to the same sort concordant, regarding to the length of each sound. Melody is an extension of musical ideas similar to the words of a sentence or a phrase itself. Musicians convey their feeling and emotion through melody. Good melodious creation is often caused by a composer's an internal motive (Phichai Pratchayanuson, 1991 cited in Phimphon Liwatthanakun, 1993). As a result, it promotes thinking creatively; expressing feelings deep inside; creating the relationship amidstthe patients; or helping reducing anxiety in those who are anxious (Chomnapha Kittisap, 1993).

5) Tempo: it refers to the rate of beats of a specific song, usually measured by a number of times per minute on average. In one stroke, the speed is between 50-120 mm (mm = metronome measurement).The feature of the rhythm of soothing music has a slow tempo in the range of 60 beats per minute approximately (Hicks, 1992, quoted in print Phimphon Lilawatthanakun, 1993) or 70-80 times per minute (as in value ofheart beat), causing a feeling of peace, relaxation, lack of tension (Johnston and Rohaly - Davis, 1996 quoted in Phimphon Lilawatthanakun, 2546), so that the nature of the selected music will contain the slow pace in the range of 70-80 beats per minute.

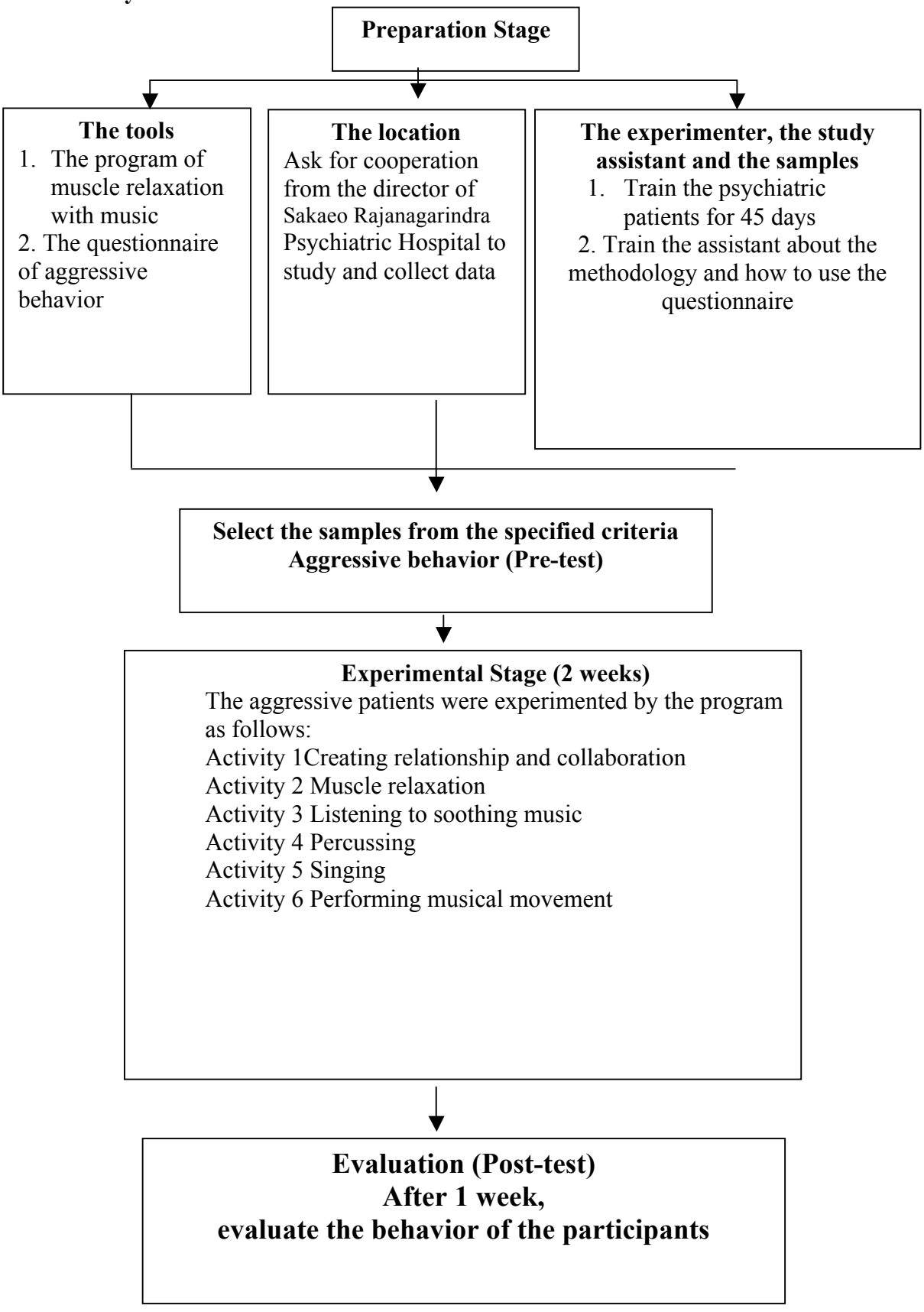
6) Sonority: a component that tells whether the complete sound inside each sound of each phrase is resonant at the appropriate level (Chomnapha Kittisap, 1993).

7) Expression of music: music and lyrics can express many feelings and emotions - love, sadness, happiness, or humor, etc. (Sukri Charoensuk, 1989). Music is the language of emotion, and it expression is considered its heart, which allows audiences understand and impress acutely and its atmosphere (Bang-on Khrietchaiyaphum, 1990), so that the music chosen to engage in the program is natural to let the aggressive schizophrenics express their feelings and emotions by using the slow rhythm to induce a sense of calm and relaxation.

3. The experts carefully considered the selected songs before taking into action.

Summary of the Process of the Study

Data Analysis



Part 1 Overview of the patients

Table 1 The number and the percentage of the samples who were programmed, classified by gender, age, marital status, and education level.

Personal Information	**The number (people) (N = 20)**	**Percentage**
Gender		
Male	10	50
Female	10	50
Age		
15-25 years old	6	30
26-35years old	7	35
36-45years old	5	25
46-59 years old	2	10
Marital Status		
Single	9	45
Married	7	35
Widowed	1	5
Divorced	3	15
Educational Level		
Below Primary School	2	10
Primary School	8	40
Secondary School	6	30
Diploma	4	20
Bachelor Degree	0	0

As mentioned in Table 4, all 20 participants in the study were 50 percent as the male, and the rest as the female. Most aged between 26-35 years old or 35 percent and 15-25 years old or 30 percent. 45 percent were single and 40 percent graduated the secondary school level respectively.

Table 2 The number and the percentage of the samples who were programmed, classified by occupation and the genre of their favorite music

Personal Information	**Number (people) (N = 20)**	**Percentage**
Occupation		
Unemployed	1	5
Hired	10	50
Merchant	4	20
Agriculturist	5	25
Civil servant	0	0
Genre of their favorite music		
String	4	20
Country	15	75
Thai classical music	1	5

As seen in the table above, the samples were hired which was equivalent to 50 percent and agriculturists which was equivalent to 25 percent. The majority preferred listening to country music as75 percent, followed by String as great as20 percent.

Part 2: The comparison of the mean of aggressive behavior in the patients before and after using the program of muscle relaxation with the use of music towards reducing aggressive behavior of schizophrenics

Table 3 The comparison of the difference in the mean of aggressive behavior in the patients in all aspects and individually both before and after the study

Aggressive behavior	Pre-Test (n=20)		Post-Test (n=20)		t
	X ―	SD.	X ―	SD.	
Oral violence	8.45	0.94	4.75	0.96	14.09*
Physical violence towards damaging things	6.55	0.94	3.25	0.91	13.65*
Physical violence towards others	7.10	1.11	3.45	0.88	14.98*
Physical violence towards him/herself	6.75	1.11	3.1	0.96	16.52*
Total	28.85	3.18	14.55	2.78	23.05*

*$p < .05$

As indicated in Table 6, the result revealed that the mean of the aggressive behavior of the schizophrenics from the pre-test and post-test had a different level of statistical significance at.05. Considered individually, the mean of verbal violence, physical violence towards others, physical violence towards damaging things, and physical aggression towards him /herself showed the different level of significance at .05.

Conclusion

The mean of the aggressive behavior in patients with schizophrenia lowered after receiving the program of muscle relaxation with music at the statistical significance level of .05. It can be concluded that the schizophrenics, who have been received the program of muscle relaxation with music, had reduced aggressive behavior, complying with the hypothesis.

Discussion

The findings showed that the aggressive behavior of schizophrenics who received the muscle relaxation with music towards aggressive behavior reduced after the pre-test with the statistical significance level of .05. Considering the aggressive behavior of the schizophrenics regarding each criterion, the mean of oral aggression; physical aggression towards others; physical aggression towards stuffs; and physical aggression towards him/herself was different at the significance level of .05. Considering individual items, the patients mostly pretended to perform shadow-boxing, caught their clothes, scratched their skin, hit themselves, pulled their hair (unhurt or slightly injured), shouted at others with less-strict words - such as Fool! -, made a loud noise, shouted angrily, and pounced his/her head or things respectively. Similarly, the mean of aggressive behavior of the post-test, regarding each criterion, revealed the same result.

According to the current situation of nursing care, the patient is admitted a hospital only in the short term. When the psychological symptoms subside, they will be discharged. And from the nurses' working habits which aim only to finish each routine, it brings about less relationship with the patients, and lack of relaxing tension which leads to aggressive behavior. However, if the program is used in conjunction with the nursing care each day, the patients will practice building relationship skills, learn how to relax, and to be assertive in a positive way. As a result, the interaction with others is crucial to schizophrenics because the chronic schizophrenics lack it, losing self-confidence, getting stressed, and eventually causing aggression. This is consistent with the study of Wilson & Kneisl (1996), which found that the psychiatric patients face the problem of dealing with everyday life to be balanced on account of being alone and interacting with others – especially their intimate - practicing relaxation skills, reducing the incentives that cause the behavior by using music to help keep the patients calm and concentrate more, thus getting relaxed.

This is also compatible with the study of Cook (1981), which found that listening to music helps keep calm and reduces anxiety. In cancer patients while being received radiation treatment, Moss (1988) found that sedative or soothing music affected the anxiety level of the patients who were undergone bone joint operation with anesthesia. Synder (1992) noted that music could directly affect the sympathetic nervous system, influencing the brain that is responsible for the emotional experience, including the limbic system, reacting physically and mentally along the music. Phatchara Phumphachat (1990) researched the use of music in reducing early-childhood students' aggressive behavior and compared the findings of the activities accompanied with the music with the normally creative activities towards the reduction of the students' aggressive behavior. It was found that their behavior decreased significantly. In contrast, their creative activities increased.

Therefore, we conclude that aiding the schizophrenic patients with aggressive behavior by using the program of muscle relaxation with the use of music towards the reduction of their aggressive behavior resulted in reducing the behavior effectively. The nurses not only provide nursing care on a daily basis, but also must be aware of the patients' mental status during being treated in an unfamiliar place or person, which can lead to tension and pressure on many things. What makes it better is a matter of relativity and relaxation. The patients' comments about their needs or recognition of their values and capabilities enabled the nurses to response their needs suitably, ending in the safety of both patients and their property for treatment.

Implication

1. To make an effective use, users must possess the basic knowledge of psychiatric and mental health nursing, and the ability of muscle relaxation and music therapy, as well as the basis of group remedy.

2. Prior to the implication, personnel are required to be trained the skills of muscle relaxation and music therapy for psychiatrics; should review the problems and needs of the patients and an appropriate genre.

Reference

Bandura, A. 1986. Social foundation of thought and action : A social cognitive theory. New Jersey : Prentice - hall.

Barnett, R. 2002. Improving the management of acute aggression in state residential and Inpatient Psychiatric Facilities. Child Adolesent Psychiatric. 4(8) : 897 - 905.

Brown, G. L., Goodwin, F. K., Ballenger, J. C., *et al* .1979. Aggression in humans: correlates with cerebrospinal fluid amine metabolites. *Psychiatry Research*, 1, 131-139.

Cook, T.H. 1998. The effectiveness of inpatient case management fact or fictian. Journal of Nursing Administration**.** 28(4) : 36 - 45.

De Sousa A.2005.The role of music therapy in psychiatry.India.

Frese,J.1993.Coping with schizophrenia.Internet Mental Health.Innoventions&Research,2.

Hamer,BA.1993.Music therapy : harmony for change.Journal of Psychosocial Nursing Mental Health Service,31.

Jones, G., Zammit, S., Norton, N., *et al* .2001. Aggressive behaviour in patients with schizophrenia is associated with catechol-*O*-methyltransferase genotype. *British Journal of Psychiatry*, 179, 351-355.

Kevin, H.,Andrew, D., & Susan, J. 2002. Anger management and ViolencePrevention : Improving Effectiveness. Trends and Issue in Crime and Criminal Justic. 227 : 1 - 6.

Lindberg,A.1998.Music therapy and mental health illness. http.//www.members.com. aol. com/kathysl/def.html.

Lance.1982. Effects of active versus passive group music therapy on tention headach.Journal of Music therapy.

Monahan, J., Steadman, H. J., Appelbaum, P. S., *et al* .2000. Developing a clinically useful actuarial tool for assessing violence risk. British Journal of Psychiatry, 176, 312-319.

Montello,L. & Coons,EE.1999.Effects of active versus passive group music therapy on preadolescent with emotional,learning,and behavioral disorder.Journal of Music therapy,35,49-67.

Navaco, R. 1976. The function and regulation of arousal of anger. American Journal of psychiatric. 133(10) : 1124 - 1127.

Pavlicevic, M.; Trevarthen, C. & Duncan,J. 1994. Improvisational music therapy and the rehabilitation of person suffering from chronic schizophrenia. Journal of Music therapy, 31, 88-104.

Rickelman, B.L. 1997. Aggressive and violent behavior. In Johnso, B.S. : Adaptation and growth psychiatric metnal health nursing. Philadelphia : Lippincott.

Rickson DJ, Watkins WG. 2003. Music therapy to promote prosocial behaviors in aggressive adolescent boy--a pilot study.Halswell Residential College,Christ Church, New Zealand.

Rose, M. 1997. A survey of violence toward nursing staff in one Large lrish and emergency department. Journal of Emergency Nursing**.** 23(3) : 214 - 219.

Sanders, J., Milne, S., Browne, P., *et al* .2000. Assessment of aggression in psychiatry admissions: semistructured interview and case note survey. BMJ, 320, 1112.

Schanda, H. & Taylor, P. 2001. In-patient violence: frequency, risk factors, preventive strategies(in German). Fortschritte Neurologie Psychiatrie, 69, 443-452.

Silverman MJ. 2006. Psychiatric patient'rerception of Music therapy and other psychoeducational programming. Florida State University, USA.

Soyka, M. & Ufer, S. 2002. Aggression in schizophrenia: prevalence, psychopathological and sociodemographic correlates (in German). Fortschritte Neurologie Psychiatrie, in press.

Steadman, H. J., Mulvey, E. P., Monahan, J., et al . 1998. Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods.Archives of General Psychiatry, 55, 1-9.

Steadman, H. J., Silver, E., Monahan, J., *et al* .2000. A classification tree approach to the development of actuarial violent risk assessment tools. Law and Human Behavior, 24, 83-100.

Swanson, J. W., Swartz, M. S., Borum, R., et al . 2000. Involuntary out-patient commitment and reduction of violent behaviour in persons with severe mental illness. British Journal of Psychiatry, 176, 324-331.

Tang, W.; Yao, X Zeng, Z. 1994. Rehabilitation effect of music therapy for residualschizophrenia:A -month randomized controlled trial in shanghai. British Journal of Psychiatry, 165, 38-44.

Wallace, C., Mullen, P., Burgess, P., et al . 1998. Serious criminal offending and mental disorder.Care linkage study. British Journal of Psychiatry, 172, 477484.

You ZY, Wang JZ. 2002. Meta-analysis of assisted music therapy for chronic schizophrenia. Shandong University. China.

Yudofski, S. C., Silver, J. M., Jackson, W., et al . 1986. The Overt Aggression Scale for the objective rating of verbal and physical aggression. American Journal of Psychiatry, 143, 35-39.

Yudofsky, S., Silver, J.M., & Jackson, W. 1986. The overt aggression scale for the objective rating of verbal and physical aggression. American Journal of Psychiatry. 143(1) : 35 – 39.

Zillmann, D. 1979. Hostility and aggression. New York: John Wiley & Sons.

Contact email: p_phawo48@hotmail.com