IMMEDIATE EFFECTIVENESS OF THE THAI CLASSICAL MUSIC LISTENING TO REDUCE STRESS IN THE ELDERLY.

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ABSTRACT

This research was aimed to study on the immediate effectiveness of listening Thai classical music to reduce stress in the elderly people by the quasi-experimental research method. The sample group of this study was the elderly people at Wat Khok Ket Health Promoting Hospital, Plai Phong Phang Sub-District, Amphawa District, Samut Songkhram Province. The Suanprung Stress Test-20 (SPST-20) was used to select 30 elderly people and divide into 2 groups (15 for the experimental group and 15 for the control group) by using the simple random sampling method. The experimental group was treated by listening Thai classical music and laying down for 10 minutes, and the control group was treated by the normal treatment; giving consult on healthcare, stress management and using the Heart Rate Variability (HRV) to assess before and after the experiment in both groups for comparing the experimental group and control group. The statistics for data analysis were percentage (%), mean *($\bar{x}$)*, standard deviation (S.D.), paired samples t-test and independent t-test.

The findings revealed that the SDNN (Standard Deviation of Normal to Normal) score of HRV in the experimental group before and after the experiment were different with a significance level of 0.05, and SDNN score of HRV in the experimental group after the experiment was higher than the control group with a significance level of 0.05.

From the findings, it assumed that listening Thai classical music could reduce stress, then using a listening Thai classical music should be a choice to reduce stress in the elderly people.

Keywords: Immediate, Effectiveness**,** Listening Thai Classical Music, Stress, Elderly

INTRODUCTION

Nowadays, a stress becomes the significant mental health problem in all ages which affects to the body system for such the nervous and brain system, endocrine system and immune system. The person who has a high stress would affects to the gastric disease, hypertension, coronary disease, insomnia and tension-type headache (Ward TN, Levin M, Philips JM, 2001). From a study on the trend of Thai population revealed that the elderly people tended to increase rapidly with their regressive changes, some of them were forced and affected to their physical and mental health, then stressed. From the report of Thai people's mental health of Department of Mental Health and National Statistical Office of Thailand 2008 – 2010 revealed that the elderly people had the lowest score of mental health compared with the other ages (National Statistical Office of Thailand, 2012).

Music would affect to the body and mind due to it is comprised of a difference of rhythm or style, slow rhythm music would help to relax and fast rhythm music would help to joy. Slow rhythm music is the music with a lower speed of rhythm which helps to relax, it should be in the moderate or lower level of musical rhythm at 60 or 70 – 80 times per minute for feeling peaceful, comfortable and relax. The undertone would help to feel pleasure and peaceful, and the intonation of rhythm which is smooth as an art would help to feel relax and

reduce stress and the healthcare of the elderly people should have a monitoring system for the health administration to monitor the unexpected symptoms (Damapong, P. and Damapong, P, 2016).

From this problem information, the researcher concerned about a guideline for health improvement in the elderly people, then a music therapy is selected due to it could reduce the brain degeneration and increase the cognitive ability in the elderly people but there is not much research on Thai music. Consequently, the researcher concerned about a study on listening Thai classical music to reduce stress in the elderly people, as Thai music is along with Thai society, culture and the elderly people for long time, to study on the immediate effectiveness of listening Thai classical music to reduce stress in the elderly people for being a guideline of reducing stress in the elderly people.

MATERIALS AND METHODS

Design

This research was the quasi-experimental research and conducted at Wat Khok Ket Health Promoting Hospital, Plai Phong Phang Sub-District, Amphawa District, Samut Songkhram Province.

The proposal of the study was approved by Suan Sunandha Rajabhat University Ethics Committee, Thailand. (Certificate Number: COA. 2-003/2018).

Subjects

The sample group of this study was 30 elderly people at the age of 60 years old and above who were selected by the Suanprung Stress Test-20 (SPST-20) with the moderate score and above and were divided into 2 groups (15 for the experimental group and 15 for the control group).

The inclusion criteria; 1. a person at the age of 60 years old and above, 2. a person with the moderate score and above, 3. a person with the consciousness and communicative competence, and 4. a person who is pleased and willing to participate in this research.

The inclusion criteria; 1. a person with the neurological symptoms or who takes medicine for such hypnotic drug or sedative, and 2. a person who could not follow the experimental method and process accurately.

Assessment

Using the Heart Rate Variability (HRV) to assess before and after the experiment, and on the third day immediately after the experiment in both groups for comparing the experimental group and control group.

Measurement instruments

The measurement instruments for data gathering were the Suanprung Stress Test-20 (SPST-20) of the Department of Mental Health and the Heart Rate Variability (HRV).

Data analysis

Descriptive statistic was used to analyze the characteristic of the volunteers focusing on mean and standard deviation. Additionally, the paired t-test was used to analyze the variables to compared the means before and after of the treatment with 0.95 level of significance ($P<0.05$).

Intervention

The experimental group was treated by listening Thai classical music at the private room without any noise, with 25 degree Celsius and laying down for 10 minutes total 3 days, and the control group was treated by the normal treatment; giving consult on healthcare and stress management.

They would listen to the two-level of musical rhythm or music with the moderate speed, easy and joyful listening to reduce stress comprised of one set of music as follows; 1. Kang Kao Kin Kluay, 2. Lao Duang Duen and 3. Sri Nuan.

Research methodology

Published the notification for volunteering application with the specified criteria, selected 30 elderly people and divided into 2 groups (15 for the experimental group and 15 for the control group) by using the simple random sampling method with drawing and signing a letter of consent, using the Heart Rate Variability (HRV) to assess before the experiment, then the experimental group was treated with aromatherapy by listening Thai classical music for 10 minutes total 3 days, and the control group was treated by the normal treatment; giving consult on healthcare, stress management and using the Heart Rate Variability (HRV) to assess after the experiment, and on the third day immediately.

RESULTS

The findings revealed that most of them in both groups were female (80%) and male (20%). They were at the age of 60 – 70 years old for 80% in the experimental group and 71 – 80 years old for 53.30% in the control group. They were married for 73.30% in the experimental group and were single for 53.30% in the control group. They attained the primary education; 93% in the experimental group and 46.70% in the control group. They earned under1,000 Baht monthly for 80% in the experimental group and 33.30% in the control group. They had no congenital 80% in the experimental group and 60% in the control group. The information of person who works for the elderly care in daily life was 93% in the experimental group as a person who doesn't work for the elderly care in daily life and 66.70% in the control group as a person who works for the elderly care in daily life.

Table 1. Compare outcome measures within group between before and after the treatment in the experimental group.

Outcome	Baseline (Mean± SD)	Immediately effectiveness (Mean± SD)	*P*-value
Heart rate variability (HRV)	37.54±16.40	47.27±20.73	< 0.001*
- SDNN (Ms)			
- LF (ms^2)	4.17±1.03	4.60±1.19	< 0.053
- HF (ms^2)	4.27±1.01	3.70±1.14	< 0.014*

Note.* $P < 0.05$ is statistically significant differences as compare between before and after the treatment from baseline.

From the experiment of listening Thai classical music by the Heart Rate Variability (HRV) revealed that the SDNN (Standard Deviation of Normal to Normal) score and High Frequency (HF) score before and after the experiment immediately. The experimental group had a higher score with a significance level of 0.05, and the comparison of the experimental group and the control group after the experiment immediately revealed that the SDNN (Standard Deviation of Normal to Normal) score, Low Frequency (LF) score, and High Frequency (HF) of the Heart Rate Variability (HRV) had a higher score with a significance level of 0.05.

Table 2. Compare outcome measures between the experimental group and the control group before and after the treatment.

Outcome	Baseline (Mean± SD)		Effectiveness (Day 3) (Mean± SD)		*P*-value
	Experimental group	Control group	Experimental group	Control group	
Heart rate variability (HRV) - SDNN (Ms)	37.54±16.40	46.47±35.22	74.18±53.95	57.62±25.02	< 0.047*
- LF (ms^2)	4.17±1.03	4.80±2.34	5.76±1.26	6.13 ±2.59	< 0.016*
- HF (ms^2)	4.27±1.01	4.54±2.62	4.87±0.94	3.28±1.09	< 0.05*

Note.* $P < 0.05$ is statistically significant differences as compare between before and after the treatment from baseline.

DISCUSSION

From the findings revealed that after the experiment, the experimental group who was treated by listening Thai classical music had a higher the SDNN (Standard Deviation of Normal to Normal) score of the Heart Rate Variability (HRV) affected to the parasympathetic nerve system and a stress reduction which was consistent with the research of Le Danseur M et al. (Le Danseur M et al, 2019)**,** a study on music as a therapy to alleviate anxiety during inpatient rehabilitation for stroke which aimed to determine if listening to music may reduce anxiety experienced by stroke patients during acute rehabilitation, it revealed that after listening to music for 1 hour, participants who completed the posttest (n = 44) reported significantly less anxiety (p < .0001) compared to before the intervention. The control group showed no difference in their pre- and posttest anxiety scores (p = .84). No differences were determined among age, gender, or diagnostic groups, consistent with the research of Lin Facai (Yunchuan, et al, 2017), a study on effect of music therapy derived from the five elements in traditional Chinese medicine on post-stroke depression, it revealed that a group who received music therapy derived from the five phases in Traditional Chinese Medicine theory twice daily had Hamilton's depression scale (HAMD-17) score. The HAMD-17 score significantly decreased after treatment in all three groups, and the post-treatment reduction in HAMD-17 score was markedly greater in treatment group B than in treatment group A (P < 0.01), and consistent with the research Peerada Damapong et al. (Damapong, P. and Damapong, P, 2016), a study on short-term effects of court-type traditional Thai massage on pressure pain threshold and pain intensity in patients with chronic tension-type headach (Damapong, P. and Damapong, P, 2016). it indicated that listening Thai classical music could reduce stress in the elderly people.

CONCLUSION

From the findings and relevant researches of listening Thai classical music to reduce stress in the elderly people in using of the Heart Rate Variability (HRV) revealed that the SDNN (Standard Deviation of Normal to Normal) score and High Frequency (HF) score before and after the experiment immediately and the comparison of the experimental group and the control group had a higher score with a significance level of 0.05, it indicated that after treated by listening Thai classical music, they had a lower stress (higher relaxation).

Nevertheless, it assumed that listening Thai classical music could reduce stress and increase the parasympathetic nerve system which affected to reduce stress and a higher score of the Heart Rate Variability (HRV) in the elderly people.

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