The Effect of Malay Traditional Instrumental Music in Reducing Depression Levels among Hospital Nurses in Malaysia

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Abstract: **This research aims to determine the effectiveness of Malay traditional instrumental music in reducing depression among nurses in order to increase the quality of health care services in Malaysia. The research method that was used for this research was quasi experimental and an Aura machine was used to collect data. Significant difference in aura colour before and after a 14-day treatment of Malay Traditional instrumental Music was also observed. In order to help the nurses to reduce depression; minimise disturbance during working hours; and have a more proactive and productive environment, treatment sessions were set up for those who scored a moderate depression level using Beck Depression Inventory (BDI). There were two experiment groups; Malay Traditional Instrumental Music group and non-treatment group of which, each group consisted of 15 participants. Treatment session was conducted daily for 14 days with each session taking approximately 10 minutes. After 14 days, participants were given the same questionnaires from before to answer once again. This research contributes a new treatment plan to alleviate the burden that nurses are facing in reducing depression by giving them more options of alternative treatments that suit themselves apart from the current treatments such as meditation and social support. In conclusion, Malay Instrumental Traditional shows significant result in reducing depression among nurses.**

Keywords: **traditional music instrument, Psychology treatment, Depression, Nurse, BDI**

I. INTRODUCTION

In today's world, stress from external factors, particularly COVID-19 have exacerbated the need to look into stress-related issues, especially when *pandemic* Covid-19 attacked our world in the end of 2019 ago. The stress due to the Covid-19 *pandemic* has caused physical and mental problems in communities around the world, including in Malaysia. Cooper et al. (2009) identified seven major sources of depression related to lack of mental health at work. These include authoritarian or bullying management styles, feelings of lack of control or employee involvement in decision-making, obvious lack of skill utilization and diversity, excessive workload, unclear roles, poor work relations between colleagues, lack of social support at work, long time.

Karasek & Theorell (1990) stated that health problems are associated with job strain, resulting from the combination of high psychological demands and how decisions are made. Meanwhile, to reduce the effects of job strain, health, and social support, helpful social interactions are available on the job, from coworkers and supervisors (Karasek & Theorell, 1990) as the researchers demonstrate the critical consequence of burnout as it relates to a poor quality of life. A recent study by UML (2014) stated that job anxiety is the harmful physical and emotional response that occurs when the requirements of the job do not match the capabilities, resources, or needs of the worker.

Almost all professions get the impact from *pandemic* Covid-19. They are susceptible to work related strain, The nature of work is physically and mentally exhausting. Abushaikha and Saca Hazboun (2009) mentioned that nurses have been found to be the most vulnerable healthcare professionals to burnout. Besides the physical and mental demands, the nursing profession also involves sympathy and empathy, and burnout can alter personalities and mood. The main source of depression in nurses is workload. Nurses work by shift and their work tasks include nursing care, ward administration and management.

This requires them to be alert and aware at all times, to prevent medication error, spreading of nosocomial infection, or even fall injuries. According to Henderson (2007) nursing care is defined as a difficult art that requires nurses to patient' needs, carry out activities of everyday living, and administer medical treatments prescribed by physicians. Nurses and caregivers play a pivotal role in hospital organizations. Nurses are particularly at risk for workplace violence due to the nature of their work (Canadian Federation of Nurses' Union [CFNU], 2017).

Loo and Leap (2012) in their studies of Job Stress and Coping Mechanisms among Nursing Staff in Public Health Services in a Public Hospital, in Selangor, consisted of female nurses, and found three major effects of job stress in nurses. They were that 86.2% of the respondents encountered psychological problems at least once every month, and it was followed by physical health problems 74.2%, and behavioral

problems 20.1%. During the interview for this research, the researchers gathered nurses' data to figure out if they could easily get angry when depression from work. Uncooperative patients, insufficient staff, heavy workloads, office politics, crowding in the workplace, and much more contributed to the bad tempered. Nurses also experienced fatigue from stressful workloads and high demands of physical movement. Furthermore, they experienced mental depression as they were treated as "second-class workers".

Workloads faced by nurses can impact their health too. Nursing by its nature, is a stressful profession (Malun, 2011). The research by Tsai and Liu (2012) showed that nurses are at a higher risk of suffering from depressive disorders than the general population. Garci'a- Izquierdo and Ri'os-Ri'squez (2012) in their studies found that one of the fundamental stressors present among nursing staff is excessive workload.

The problem of this research is there is not much research about the treatment for reducing depression among nurses in Malaysia. The previous studies of depression among nurses in Malaysia focused on resources of depression and problem-solving skills (Choi et al., 2013; Sharifah Zainiyah et al. 2011). The effectiveness of music treatment in reducing depression among nurses has not been studied widely. The previous research regarding music, focused on increasing attention span (Yohan and Hishamuddin, 2013) increasing happiness (Yamamoto et al., 2003), and spatial reasoning skills (Rauscher et al., 1993). There is evidence of emotional responses when listen to music in everyday life (Juslin & Sloboda., 2001). Music can do more than alter emotions and elevate mood; it can also improve focus on a task by providing motivation, and is often used to motivate performances during an event. Lower pitched sounds come from slow vibrations of instruments to produce it, while even lower-pitched noise is called infrasound. It cannot be detected by human ears, while very high-pitched noise is called ultrasound. In research by Prajnananda (1980), it is stated that the listener will get absorbed by the music that can create a meditative state in mind by promoting concentration while listening to the music. Another review by Prajnananda (1980) it asserts that music not only facilitates the acquisition of "bliss and divine knowledge: in the individual, but also promotes in them a state of eternal peace and tranquility.

As quoted by Seaward (1999), the classical composer Beethoven reported 'Music is the one incorporeal entrance into the higher world'. Studies of music regarding physiology supporting the inducement of emotion have been done by previous researchers also investigated profound effects on levels of relaxation and contentment (Gupta & Gupta, 2005). Music preferences or social attitudes are also known to affect a listener's emotional response (Livingstone & Thompsom 2000).

The objective of this research is to use Malay instrumental music to develop into a new treatment in reducing depression among nurses. Giving nurses more choice to choose any alternative treatment that suits them besides current ones, such as meditation, and social support, either problem-focused or emotion-focused.

II. RESEARCH METHODS

The method is used in this research is quasi experimental. According to Cook & Campbell (1979), quasi-experimental research is research that resembles experimental research but is not true experimental research. Quasi-experiments are most likely to be conducted in field settings in which random assignment is difficult or impossible. Plus, between-subjects in which participants have not been randomly assigned to conditions.

According to the Hospital Nursing Department, there are 1811 nurses working at the Hospital University Sciences Malaysia and 135 nurses currently working at outpatient department. This experiment was using purposive sampling where the sampling form enables selection of sample members that conform to a certain criteria. Samples for this study have been selected randomly among female staffs that have no chronic illnesses from Hospital University of Sciences of Malaysia which were staff nurses, trained assistant nurses and nurse aids working at Outpatient clinics because they were handling multi-disciplinary issues. In order to get accurate results, the researcher only chose one specific gender, that being female because the majority of the nurses in the research area are women. The target samples were 30 which were divided into three experimental groups; 15 respondents for Malay Traditional Instrumental Music therapy group, and 15 respondents for the control group which is the non-therapy group.

The researcher determined mild mood

disturbance/depression among the respondents by using the Beck Depression Inventory (BDI). During the BDI test, only female staff nurses scored mild depression on the BDI test in this study. The age group selected was below 54 years old, as the majority of nurses retired at age 55.

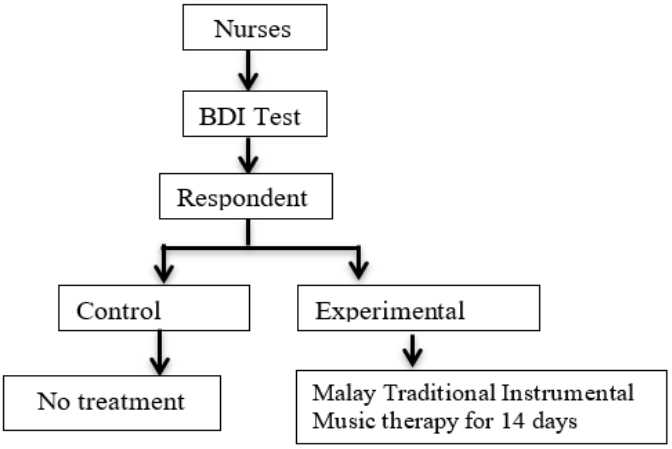

Figure 1 Method of Survey Respondent Selection

The place of this research is Multidisciplinary Outpatient Clinic in Hospital Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia.

The experiment was conducted between 2pm-5 pm, as the depression level during these hours were considered high according to their schedules when compared to the morning (where nurses just started to work and felt energetic). The

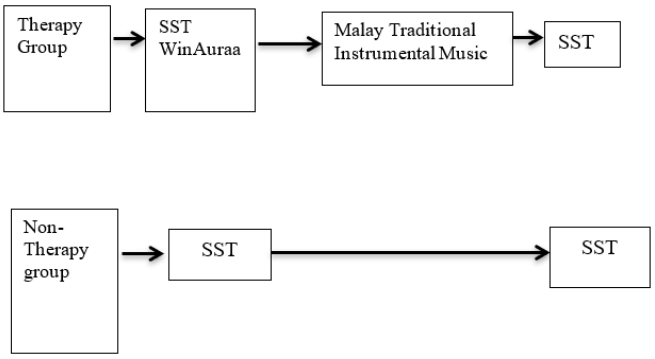

Figure 2. Research Session Design

SST is Subjective Score Test. SST is a numeric rating scale that used in this research to assess respondents' level of comfort before and after listening to the music (0 score indicated uncomfortable/ and 10 highly comfortable). SST is adopted from Likert Scale where the independent variable is the group of nurses and dependent variable is the level of comfortable.

This research used WinAura machine. WinAura is a Windows program that allow to see aura color on the program screen by placing the hand on the aura sensor bio hand plate. The aura analyzes the result into three categories which are Body, Mind and Spirit depending on the activity of chakra involve. Body referring to energy connected to physical, mind referring on energy connected to thought and spirit referring to energy connected to spiritual.

The data analyzed by Wilcoxon Test using SPSS Program version 22.0 was sophisticated and user-friendly. The steps to analyze data required managing and organizing raw data, systematically coding and entering data, analyzing the min data, engaging in reflective statistical analysis, interpreting meaning, discovering findings, and finally drawing relevant conclusions. The Wilcoxon Signed-Ranks Test and T-test are used in this study to analyze the data.

III. THE FINDINGS

There were 22.22% from between 25-35 years old, 66.67% between 36-45 years old, and 11.11% between 46-55 years old. The work experience from participants tested ranged from 22.22% (less than 10 years, 66.67% between 10 to 20 years, 11.11% between 21 to 30 years, and 0% for more than 31 years). All of them were Malay (100%), and married (100%) with the highest level of education being a diploma (100%).

Table 1 Wilcoxon Signed-Ranks test for Malay Traditional Instrument Music according to aura color.

Color	Before Malay Instrument Music Therapy		After Malay Instrument Music Therapy	
	Frequency	Percentage	Frequency	Percentage
Blue	5	33.3	12	80.0
Green	9	60.0	1	6.7
Yellow	1	6.7	2	13.3
Total	15	100	15	100

Based on table 1, there are colors appearing differently by the WinAura on the Malay Traditional Instrumental Music therapy depending on an individual's aura before and after of each therapy session. Before the Malay Traditional Instrumental Music therapy, nine participants who are equal to 60% of participants appeared as a green color, five participants who are 33.3% appeared as a blue color, and only one who is 6.7% of the participant is showed as a yellow color. After 14 days of the therapy, the majority of participants; 12 participants that equal to 80% appeared as a blue color, followed by 2 participants who are 13.3% appearing as yellow color, and only one, which is 6.7% of participants appearing as green color.

Table 2 Wilcoxon Signed-Ranks test results for Malay Traditional Instrumental Music according to BDI test.

BDI	Before Malay Instrument Music Therapy		After Malay Instrument Music Therapy	
	Frequency	Percentage	Frequency	Percentage
Mild	15	100	0	0
Normal	0	0	15	100
Total	15	100	15	100

Table 2, it shows that all the participants scored a mild depression level in their BDI test before the Malay Traditional Instrumental Music therapy, while after therapy showing all participants scored at a normal depression level in their BDI test.

Table 3 Wilcoxon Signed-Ranks test results for Malay Traditional Instrumental Music according to Subjective Score Test (SST).

SST	Before Malay Instrument Music Therapy		After Malay Instrument Music Therapy	
	Frequency	Percentage	Frequency	Percentage
1.00-3.33	0	0	0	0
3.34-6.66	4	26.7	0	0
6.67-10.0	11	73.3	15	100
Total	15	100	15	100

Based on Table 3, the Subjective Score Test with scores from 1 to 10; 1 for uncomfortable and up to 10 for comfortable. These scores have been divided into three rankings from 1.00 – 3.33, 3.34 – 6.66, and 6.67 – 10. Before the Malay Traditional Instrument Music therapy, 11 (73.3%) participants scored the SST in range of 6.67 – 10.0, while 4

(26.7%) participants in the range of 3.34 – 6.66 and no participant scored the SST in the range of 1.00 – 3.33. After 14 days of the Malay Traditional Instrumental Music therapy, all of the participants scores in ranking were 6.67 to 10.

Table 4 Wilcoxon Signed-Ranks test for Non Music Therapy according to SST

SST (After 14 days – Before 14 days)	Non-Therapy
N Negative Ranks Positive Ranks Ties	15 0 0 15
Mean Rank Negative Ranks Positive Ranks	 0 0
Sum of Ranks Negative Ranks Positive Ranks	 0 0
Z-value	0.000
p-value	1.000

Table 4shows the Wilcoxon Signed-Ranks test results for non-music therapy in reducing depression level among hospital nurses according to SST. The table provides some unique data on the comparison of participants' before and after the 14 days of the non-music therapy to reduce depression according to SST. Referring to the table for non-music therapy, it shows that no participant scored a lower depression score before the non-music therapy, and there were no participants that scored a lower depression score after the non-music therapy. The table also shows 15 participants showed no changes in their depression score. After 14 days of the non-music therapy, a Wilcoxon Signed-Ranks test shows no participants had a higher SST value (mean rank = 0). The results also indicated that after 14 days of the non-music therapy, it did not elicit a statistically significant change in reducing depression among hospital nurses with Z-value = 0.000 and p-value = 1.000 which is more than 0.05. Therefore, the non-music therapy music was not statistically significant in reducing depression scores among hospital nurses, according to SST.

Table 5 Wilcoxon Signed-Ranks test for Non Music Therapy according to BDI

SST (After 14 days – Before 14 days)	Non-Therapy
N Negative Ranks Positive Ranks Ties	15 0 0 15
Mean Rank Negative Ranks Positive Ranks	 0 0
Sum of Ranks Negative Ranks Positive Ranks	 0 0
Z-value	0.000
p-value	1.000

Table 5 shows the Wilcoxon Signed-Ranks test results for non-music therapy in reducing depression among hospital nurses according to BDI. The table provides some unique data on the comparison of participants' before and after the 14 days of the non-music therapy to reduce depression according to BDI.

Referring to the table for non-music therapy, it shows that no participant scored a lower depression score before the non-music therapy and there are no participants scored a lower depression score after the non-music therapy. The table also shows 15 participants shows no change in their depression score. After 14 days of the non-music therapy, a Wilcoxon Signed-Ranks test shows no participants had a lower BDI value (mean rank = 0). The results also indicated that after 14 days of the non-music therapy, it did not elicit a statistically significant change in reducing depression among hospital nurses with Z-value = 0.000 and p-value = 1.000 which is more than 0.05.

Therefore, the non-music therapy music was not statistically significant in reducing depression score among hospital nurses according to BDI.

Table 6. Mean of Aura Data for Malay Instrumental Traditional Music

RES	WIN AURA MEASUREMENT							
	BEFORE				AFTER			
	COLOR	BODY %	MIND %	SPIRIT %	COLOR	BODY %	MIND %	SPIRIT %
1	BLUE	2.29	2.86	2	BLUE	2.95	1.64	2.55
2	GREEN	1.71	3.98	1.45	BLUE	2.36	2.57	2.26
3	GREEN	2.4	3	1.5	GREEN	1.69	4.6	2.14
4	GREEN	2.55	3.14	1.45	BLUE	1.52	4.88	0.74
5	BLUE	2	2.4	2.75	BLUE	1.51	3.46	2.1
6	GREEN	1.67	4.32	1.15	BLUE	2.77	2.63	2.2
7	GREEN	1.04	1.57	1.73	BLUE	1.3	4.21	1.63

8	GREEN	1.46	4.14	1.54	BLUE	1.83	3.06	2.24
9	YELLOW	2.43	3.62	1.1	YELLOW	2.44	3.05	1.65
10	GREEN	1.79	4	1.36	BLUE	1.52	3.86	1.76
11	GREEN	1.25	4.42	1.47	YELLOW	1.86	3.8	1.49
12	GREEN	2.69	2.19	2.67	BLUE	2.12	2.46	2.57
13	BLUE	2.53	2.77	1.79	BLUE	1.91	2.33	2.9
14	BLUE	2.29	2.53	2.89	BLUE	1.83	2.33	3.01
15	BLUE	0.97	3.74	2.46	BLUE	0.54	4.41	2.11
TOTAL MIN	GREEN	1.94	3.25	1.82	BLUE	1.88	3.29	2.09

Table 6 shows the mean data result for 14 days of Malay Traditional Instrumental Music therapy in reducing depression among hospital nurses. The table provides min data on comparison of before and after of body, mind, spirit and color of the 14 days of Malay Traditional Instrumental Music therapy. Referring to the table, it shows that after 14 days of the Malay Traditional Instrumental Music therapy, the mean for color is blue, with body 1.88, mind 3.29, and spirit 2.09. It means that the music give relaxation effect to the respondents.

IV. DISCUSSION

This study's findings that the use of Malay Traditional Instrumental Music in reducing depression brought different outcomes that can be used in reducing depression among hospital nurses. As the researcher observed during the therapy, the respondents responded happier after listening to their music of choice. This interest leads to positive results. Previous studies were also stated regarding this finding happiness', 'sadness', 'tenderness', 'fear' and 'anger' are often communicated by specific patterns of acoustic cues (Juslin & Sloboda. (2001). Mc Craty et al. (1998) stated that music can induce emotional states in the listener or change the mood. Therefore, this study is beneficial in helping hospital nurses in reducing their depression with minimal disturbances during working hours, thus creating harmony and a productive environment. The use of music in this research will develop into a new treatment in reducing depression among nurses. Giving nurses more choices to choose any alternative treatment that suits them besides those present, such as meditation, and social support, either problem-focused or emotion-focused.

The researcher reported that all respondents were comfortable and relaxed when listening to their own music of choice and showed interest in it. The respondents also listened to the music therapy outside of the therapy room depending on their preferences every day during the 14 days of the therapy. All of the respondents were able to commit by listening at least once per day to their music. Previous studies were proved by health psychology researcher.

The Malay Traditional Instrumental Music Therapy gave influence to mind. Yamamoto et al. (2003) stated that the level of norepinephrine which is a neurotransmitter that regulates arousal decreased when listening to slow music. Will and Berg (2007) in their review stated that external stimuli drive the brain towards relaxed activity. The researcher sees these results synchronize with the previous studies on how it has been proved that music can impact the human mind. Chemically pleasant music releases dopamine in the nucleus accumbens. Nucleus accumbens is found in the area of the brain called basal forebrain; it operates on two essential neurotransmitters which are dopamine that promotes desire and serotonin that effects satiety and inhibition. Pleasant music increases the release of serotonin which is responsible for a good mood in the brain, while unpleasant music reduced the level of serotonin (Rajadurai, Rajeesh Kumar, Payal., 2012). Yohan, K., Hishamuddin, M. S. (2013) proved that music was indicative of an increased attention span, promotes learning interest, and reduces tiredness during the learning process. All the respondents showed changes from mild depression to normal depression level according to BDI scores.

V. CONCLUSION

Malay Instrumental Traditional Music show significant results in reducing depression among hospital nurses. According to Nechama Yehuda (2011), interrelated with music-induced relaxation is the reduction of anxiety. Prolong untreated depression and anxiety can lead poor health outcomes. However, the researcher strongly believes that nurses also need rest to recharge after work from being tired. Nursing, by its nature, is a stressful profession (Malun, 2011).

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