

## The Benefits of Box Music Therapy (BmT) for Patients at Martha Friska Multatuli Hospital Medan

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**Abstract:** The aim of this study was to test the performance of Box Music Therapy (BmT) in reducing pain levels in patients with neurological disorders and pre- and post-natal mothers at Martha Friska Multatuli Hospital, Medan. BmT is a combination of several sensor components whose function is to reduce stress. The sensors contained in BmT are the Galvanic Skin Resistance (GSR) sensor, MPX5050dp sensor, memory card. Then the sensor series is connected to electrical components with instrumental music created specifically for music therapy needs. It is hoped that the creation of BmT can become a non-pharmacological 'pain medication' for patients with neurological disorders and pre- and post-natal mothers. This research was carried out using a quasi-experimental method approach. The research results show that the use of BmT for patients with nervous disorders and pre- and post-natal mothers at Martha Friska Multatuli Hospital in Medan can help relax the mind which reduces stress levels, reduces pain and provides calm to patients when undergoing BmT music therapy.

**Keywords:** Music Therapy, Therapy music box, Patient, Martha Friska Multatuli Hospital, Galvanic Skin Resistance (GSR) sensor, MPX5050dp sensor.

### INTRODUCTION

Eckart Altenmuller in his article Neurologic music therapy: The beneficial effects of music making on neurorehabilitation notes that music can restore impaired nervous processes or neural connections by involving and connecting brain regions with each other (Eckart, 2013). Furthermore, Suzanne Langer in Oliver emphasized that apart from music being able to bring back memories of the past, music also evokes emotions and moods (Oliver, 2006). In his research, Chakraborty also noted that various musical elements of rhythm, melody, harmony and tempo can stimulate cognitive and emotional responses consisting of the affective component of pain and thus produce a better healing process. Music therapy is the best example for curing several diseases in the human body and mind (Chakraborty, 2020). In 2019, researchers conducted music therapy research on children with special needs (Down syndrome). In this activity, the researcher created a musical drama performance activity involving children with special needs. This activity raises self-confidence for children with special needs and develops talents, especially in the arts (Batubara, *et al.*, 2019).

Several other studies related to the impact of music therapy in treating health problems can be seen from several research results on the impact of music on early childhood development (Birch, 2023). Furthermore, music can also play a role in reducing anxiety levels in cancer patients (Knoerl, 2023); Research on the use of Sundanese degung to reduce blood pressure in hypertensive patients (Mulyati, *et al.*, 2017). This research was also

carried out by Yuli, *et al.*, (2014) by looking at the differences between classical music therapy and preferred music on blood pressure in hypertensive patients at RSUD dr. H. Soewondo Kendal (Yuli, *et al.*, 2014). Apart from that, the impact of implementing music therapy on the quality of life of healthy elderly people (Sole, *et al.*, 2010). This research is also supported by the results of research conducted by Larrisa *et al* on how music therapy was used to improve the quality of life of elderly people in nursing homes during the Covid-19 pandemic in the Netherlands (Rasing, *et al.*, 2023). Then in 2015, Joyanta Sarkar and Utpal Bismas conducted research on the impact of Indian music on treating various health problems/diseases (Sarkar & Utpal, 2015).

Referring to the opinions of previous researchers as well as some of the research results mentioned above, in 2021, the research team together with students from the music arts study program, Faculty of Languages and Arts, HKBP Nommensen University, created a tool which was then called the Therapy Music Box (BmT) This instrument was created as a music therapy medium for patients with a history of certain diseases. It is hoped that with this instrument the function of music as a healing medium can be tested.

The BmT was created by combining several components, namely Galvanic Sensor Responsive (GSR), MPX5050dp sensor, memory card, headphones and 16 (sixteen) therapy music. As a first trial, the research team conducted research on drug-affected patients at the Mutiara Abadi Binjai Foundation Rehabilitation Center, Medan. The

results of this research show that listening to music can be a solution to restore self-confidence for drug rehabilitation patients (Batubara, 157:2021). This situation can help patients to return to their normal activities and be accepted by society. Further research was carried out on hypertensive patients at the Medan Methodist Hospital. This research was motivated by the World Health Organization (WHO) in 2015 which estimated that by 2025 there would be 1.5 billion people in the world affected by hypertension, which has a major

impact on nervous disorders. A total of 9.4 million of them will die every year. Meanwhile, in Indonesia itself, the prevalence of hypertension ranges from 6-15% and is considered a cause of premature death in the world (Mayasari, 2019). The results of the study showed that hypertensive patients who experienced music therapy admitted to feeling relaxed and calm and this had an impact on reducing the patient's blood pressure levels (Batubara, *et al.*, 2023)



**Figure 1:** Therapy music box (BmT)

The use of therapeutic music is also carried out in several health service settings in the world, including Indonesia. For example, classical music therapy as an alternative treatment for hypertension patients at RSUD DR. H. Soewondo Kendal, research on Sundanese Degung music on reducing blood pressure in hypertension patients as well as the use of Indian classical music/ragas which is believed to cure various health problems. Apart from that, the use of music therapy to reduce anxiety levels in cancer patients has also been carried out previously. Thus, the fact is that the world of modern medicine has now discovered that music therapy is one of the best alternatives for curing several diseases of the human body and mind.

As a continuation of the BmT trial, further research was carried out on neurological patients, namely patients who experienced nervous disorders, especially at Martha Friska Multatuli Hospital, Medan. Nervous disorders are caused by several factors, namely trauma, tumor infection, immune system disorders and blood flow disorders. Nervous disorder patients may have difficulty moving, speaking, thinking, and even memory loss. Through this research, researchers will describe the history of the disease and see the effectiveness of using BmT which has an impact on reducing pain in patients with neurological disorders at Martha Friska Multatuli Hospital, Medan.

Pregnancy is every woman's dream and is one way to achieve perfection as a mother. This process begins with fertilization (conception), the period of formation of the baby in the womb, and ends with the birth of the baby. Feelings of fear and anxiety in pregnant women can cause excessive pain during childbirth. The excruciating pain felt by the mother can disrupt the labor process and result in a prolonged labor process (Suciati, Lucia. 2020).

On the other hand, psychological conditions with anxiety and depression in pregnant women will influence the emergence of disease and complications of pregnancy and childbirth, both in mother and baby. Anxiety problems always arise in primigravida mothers, therefore these anxiety problems must be addressed immediately (Shodiqoh, 2014).

Thus, this research, apart from carrying out music therapy for patients with neurological disorders, will also focus on the use of instrumental music therapy for pre-natal and post-natal pregnant women. It is hoped that this research can help reduce pain for pregnant women during the delivery process, especially at Martha Friska Multatuli Hospital, Medan.

## RESEARCH METHODS

This research was conducted using a qualitative-quantitative research design with a pre-test and post-test data approach, namely comparing data on the results of music therapy before and after receiving music therapy treatment. Quantitative data in the form of GSR results and initial and

final bpm data were detected via the BmT monitor screen and recorded on each patient's music therapy results sheet. Apart from that, qualitative data consists of the results of interviews with patients both before and after music therapy treatment to find out the patient's identity, history of illness and the feelings they experienced after being treated with music using BmT.

This research was also carried out using Standard Operating Procedures (SOP), namely by asking the patient for consent before receiving BmT music therapy; if the patient agrees, the research team then educates the patient regarding the goals and benefits of music therapy using BmT; Next, the patient will be educated about the 16 (sixteen) pieces of music contained in BmT and asked the patient to choose the number of therapy music they want to hear; During the music therapy process, the research team will observe the GSR and BPM data displayed on the BMT monitor screen until they get the final results; After listening to the music therapy, the researcher will inform the patient of the results of the music therapy and then interview the patient to get a response regarding music therapy.

GSR as a sensor for detecting the patient's stress level and the MPX5050dp sensor as a sensor for detecting the patient's heartbeat. Regarding the patient's stress level, the researcher refers to the opinion of Regina Seren (2015: 425), as shown in the following table:

**Table 1:** Stress Level by Regina Seren

Condition of Patients	GSR (bits)
Normal	0-300
Relax	301-525
Light Stress	526-600
Moderate Stress	601-725
Heavy Stress	726-825
Extremely Stressful	826-1023

Apart from GSR and MPX5050dp, BmT is also equipped with music which is used as a therapeutic medium, namely:

**Table 2:** List of Songs/Instrumental Music in BmT

No	Title	Notes
1	After rain comes Sunshine	<b>Instrumental</b>
2	Aktivitas lama	
3	Alam Menyapa	
4	Human of the storm	
5	Impian	
6	In the Morning Shade	
7	Ku bersyukur V1	<b>Vocal</b>
8	Ku bersyukur V2	
9	Renungan	<b>Instrumental</b>
10	Senandung Alam	
11	Senandung Bidadari	
12	The Power of the dream	
13	Suara Alam	
14	Suara Air	
15	Song of the angel	
16	Blessing	

## RESULTS AND DISCUSSION

The Martha Friska Multatuli Hospital in Medan was officially opened on July 24 2010, as a branch of the Martha Friska Pulo Brayan Hospital with different management. This hospital is located at Jalan Multatuli, Taman Multatuli Indah Complex No.1 Medan. The Martha Friska Multatuli Hospital in Medan has a bed capacity of 250 units consisting of SVIP, VIP, class 1, class 2 and class 3. There are also general practitioners and specialist doctors who work under the auspices of the Martha Friska Multatuli Hospital in Medan totaling ±100 people. who are ready to serve patients.

Based on the results of interviews with dr. Jhoni Sastra Manurung, MKM as head of the medical services management section said that the Martha Friska Multatuli Hospital in Medan was reopened during the 2020 pandemic and was then used as a referral hospital for the Provincial Health Service. Until 2021, this hospital will be open to BPJS patients and the general public. The number of patients continues to increase from year to year, numbering from one hundred to three hundred people. In 2023, Dr Jhoni explained that there will

be ±600 inpatients and 300 - 2000 outpatients with BPJS and general status at Martha Friska Multatuli Hospital in Medan. Furthermore, Dr. Jhoni also added that currently Martha Friska Multatuli Hospital Medan provides health services such as children's polyclinic, internal medicine polyclinic, mental health polyclinic, urology polyclinic, neurology polyclinic, surgery polyclinic, ob-gyn polyclinic, skin polyclinic, ENT polyclinic, pathology polyclinic, radiology and eye clinic.

### A. Music Therapy for Patients with Neurological Disorders at Martha Friska Multatuli Hospital, Medan

The results of music therapy research on neurology patients at the Martha Friska Multatuli Hospital in Medan will be explained based on age and gender. The number of patients who received music therapy treatment was 22 (twenty two) people, including 13 (thirteen) men or 59.10% and 9 (nine) women or 40.39%. The age of patients who received music therapy treatment ranged from 17 years to 87 years.

#### 1. Male patient

**Table 3:** Data on Male Patients using Music Therapy Treatment

No	Patients' Intial Names	Age	Gender (M/F)	Date of Consultation
1	BH	67	M	25 August 2023
2	AT	38	M	22 August 2023
3	AH	59	M	22 August 2023
4	PS	68	M	22 August 2023
5	EF	27	M	22 August 2023
6	MS	60	M	18 August 2023
7	AS	17	M	18 August 2023
8	BN	70	M	18 August 2023
9	BL	69	M	18 August 2023
10	SD	38	M	18 August 2023
11	LD	87	M	15 August 2023
12	BG	72	M	18 August 2023
13	RP	50	M	18 August 2023

There were 1 male patients who received music therapy in the age range 15 -24 years (7.7%); patients aged 25 years -34 years (7.7%); 2 patients aged 35 years – 44 years (15.39%); patients aged 45 -54 years (7.7%); 2 patients aged 55 years – 64 years (15.39%); 4 patients aged 65 -74 years (30.77%); and 1 patient aged 85 – 94 years (7.7%). The patient suffered from mild stroke to severe nerve pain, hypertension, pinched nerves around the waist and below, pain in the right buttock, numbness in half the body, curved spine, lumbar spine, pain between the hips, high anxiety, non-functioning nasal nerves, have a tumor between the liver and kidney.

Of the thirteen male patients who received three sessions of music therapy, only two were treated. Meanwhile, others received treatment once or twice. This is because all patients are permanent patients (BPJS patients who always have control once a month) Dr.Rani Fitria Dewi, Sp.N. There were patients who underwent three music therapy treatments with the initials EF and MS. EF is 27 years old and MS is 60 years old. EF patients are patients who have weak nerves so that muscle development is not very good. EF did music therapy on 08/22/2023; 08/25/2023 and 08/29/2023. The first treatment was with an initial BPM of 116 and an initial GSR of 514 with the selection of therapy music number 5 (Dream). After completing music therapy, the BPM resulting from music therapy was 91 and the GSR resulting from music therapy was 411. Then a second treatment was carried out where the initial BPM was 62 and the initial GSR was 607. After completing music therapy, the BPM resulting from music therapy was 78 and the GSR resulting from music therapy was 584 by hearing the number 16 therapy music (Blessing). Then the third treatment

was given to EF where the initial BPM was 85 and the initial GSR was 658. After music therapy was carried out on EF, the BPM resulting from music therapy became 66 and the GSR resulting from music therapy was 589 with music therapy number number 3 (Alam Greeting). From the results of the researchers' observations of EF, the effect of music therapy on EF patients showed success. The reason is that the patient is able to walk, whereas up to now the patient has not been able to walk; The patient was able to talk with greater focus than before music therapy was carried out. Apart from that, EF also experienced numb legs, weak nerves and leg cramps, pain in the feet, hands and waist. The pain occurs at night. The response of EF patients to music therapy is to feel calm, relaxed, carried away by the atmosphere of the music they hear and the music is able to relieve the pain they are experiencing.

MS patient (60 years/male) is a patient who suffered a major stroke (half body) and always uses a cane. MS patients are given education about music therapy. There is music therapy carried out on MS patients through BmT. MS patients received four treatments by selecting therapy music numbers number 3 (*Alam Menyapa*), number 5 (Dream) and number 11 (*Senandung Bidadari*). MS did music therapy on 08/10/2023; 08/11/2023, 08/25/2023 and 09/01/2023. The first treatment was carried out on MS with an initial BPM position of 58 and an initial GSR of 692 by selecting music number 11 (*Senandung Bidadari*). As a result of the music therapy carried out, the BPM from music therapy was 52 and the GSR from music therapy was 624. Then the researchers carried out a second treatment for MS where the initial BPM was 60 and the initial GSR was 670 by choosing music number 3 (*Alam Menyapa*). From

the results of music therapy carried out on MS, the BPM resulting from music therapy remained 60, but the GSR resulting from music therapy became 634. Then MS received a third treatment for music therapy, where the initial BPM was 58, the initial GSR was 634 by choosing therapy music number 5 (*Dream*). As a result of music therapy, the BPM from music therapy decreased to 52 and the GSR from music therapy decreased to 578. Next, MS received the fourth treatment where the initial BPM was 61 and the initial GSR was 667 by choosing therapy music number 11 (*Bidadari*

Song). The results of music therapy treatment for MS were that the BPM resulting from music therapy became 60 and the GSR resulting from music therapy became 621. Judging from observations made by researchers, MS experienced a decrease in stress levels with music therapy number 5 (*Dream*) with a stress level of level 634 (moderate stress) to 578 (light stress). This proves that choosing therapy music number 5 really helps MS patients to feel relaxed, calm, make small movements in the hands and during music therapy the patient falls asleep.



**Figure 2:** Patients using the Music Teraphy

**2. Female Patient**

**Table 4:** Data on Female Patients using Music Therapy Treatment

No	Patients' Intial Names	Age	Gender (M/F)	Date of Consultation
1	JH	62	F	18 August 2023
2	OSB	62	F	22 August 2023
3	IG	61	F	25 August 2023
4	MEL	47	F	25 August 2023
5	LST	58	F	18 August 2023
6	WP	81	F	15 August 2023
7	MAS	66	F	11 August 2023
8	ES	70	F	11 August 2023
9	FEL	71	F	11 August 2023

There were 9 (nine) female patients who participated in music therapy out of twenty-two patients (40.90%), with an age range of 47 years to 81 years. At the age of 45 years to 54 years, there was 1 female patient (11.11%). Furthermore, those aged between 55 years and 64 years were 4 people (44.44%); Ages 65 to 74 years were 3 people

(33.33%), ages 75 to 84 years were 1 person (11.11%). The female patient had a history of back pain, numbness, knee and sole pain, stroke, slurred tongue.

From the observation results it can be seen that the initial BPM before music therapy treatment ranged

from 32 to 94 with an average of 71.55. Then observations were also made via initial GSR before music therapy treatment was carried out, which ranged from 439 to 690 with an average of 624.33. From these average results, it can be concluded that female patients with initial BPM before treatment were in the moderate stress level category.

LG patient (61 years/female) received two treatments, namely on 08/25/2023 and 08/29/2023. The first treatment found an initial BPM of 81 and an initial GSR of 439. After music therapy, the BPM resulting from music therapy became 72 and the GSR resulting from music therapy was 402 by selecting therapy music number 4 (*Human of the storm*). Then a second music therapy treatment was carried out with an initial BPM of 90 and an initial GSR of 643 with music therapy number 4 (*Human of the storm*). From the results of observations made by researchers, the BPM resulting from music therapy was 87 and the GSR resulting from music therapy was 566. With two treatments on LG patients, it can be concluded that LG experienced stress at a moderate stress level. After receiving music therapy treatment, LG experienced stress at a relaxed level.

Patient NA (60 years old/female) received three treatments for music therapy which were carried out on 08/22/2023, 08/28/2023 and 10/03/2023. NA has a history of stroke so the patient has difficulty speaking. The first treatment was carried out with an initial BPM of 78 and an initial GSR of 557 by selecting therapy music number 3 (*Alam Menyapa*). The results of music therapy showed that the final BPM was 63 and the final GSR was 538. Then NA received a second treatment for music therapy with an initial BPM of 74 and an initial GSR of 676 by choosing music number 8 (*I'm grateful Version 2*). After receiving music therapy, it was found that the BPM resulting from

music therapy was 71 and the GSR resulting from music therapy was 623. Furthermore, NA also received treatment a third time with an initial BPM of 76 and an initial GSR of 458 with music number 16 (*Blessing*). From the results of observations made by researchers, it was found that the BPM resulting from music therapy was 69 and the GSR resulting from music therapy was 358. Thus, NA can be said to be a patient who experienced a reduction in stress levels using music therapy.

Next, the patient who received three music therapy treatments was patient JH (62 years old/female). JH performed music therapy on 08/18/2023, 08/25/2023, and 09/01/2023. JH experienced spinal pain, numbness in his palms, knee pain and difficulty walking. The researcher carried out the first treatment on JH with an initial BPM of 78, an initial GSR of 686 with music selection number 11 (*Senandung Bidadari*). After music therapy was carried out on JH, the BPM resulting from music therapy became 72 and the GSR resulting from music therapy became 676. Then JH received a second treatment for music therapy with an initial BPM of 71 and an initial GSR of 617 with music number 3 (*Alam Menyapa*). After carrying out the second treatment, the BPM resulting from music therapy became 62 and the GSR resulting from music therapy became 557. Finally, the researchers carried out the third treatment on JH with an initial BPM of 65 and an initial GSR of 661 with music number 11 (*Senandung Bidadari*). After receiving the third treatment for patient JH, the BPM resulting from music therapy became 45 and the GSR resulting from music therapy became 621. Judging from the results above, it can be said that JH experienced stress with a moderate level of stress and after receiving music therapy treatment became light stress.



**Figure 3:** Female Patients using the Music Box Therapy

**B. Music Therapy for Pre-Partum and Post-Partum Mothers at Martha Friska Multatuli Hospital, Medan**

The Stress Level (GSR) of patients following observation was in the range 284 - 683 (before therapeutic treatment); BPM is in the range 41 –

102 (before treatment). The patients who took part in music therapy were four people with an age range of 20 years - 39 years and the researchers in this case made initials to protect the nurses' confidentiality. The four patients are:

**Table 5:** Data on Pregnant Women using Music Therapy At Martha Friska Multatuli Hospital, Medan

No	Patients' Intial Name	Age	Gender (M/F)	Date of Consultation
<b>Prenatal Patients</b>				
1	VG	20	M	30/09/2023
2	AS	23	M	28/08/2023
<b>Postpartum Patients</b>				
3	AN	35	M	22/08/2023
4	AH	39	M	21/08/2023

**1. Pre-natal maternal patients**

Patients who received music therapy treatment during prenatal period were with the initials VG (20 years) and AS (23 years). The two patients came to the Martha Friska Multatuli Hospital in Medan in a six-opening condition, which means the patient was experiencing mild contractions. Both patients attended music therapy on different schedules, VG on 09/30/2023 while AS on 08/28/2023. Next, music therapy is performed on AS at the seventh opening where the patient is experiencing quite active contractions. Patient AS, a mother who gave birth to her second child, received three music therapy treatments up to opening nine by choosing two different songs. The first song to listen to is song number three (*Alam Menyapa*) and song number 11 (*Senandung Bidadari*).

When the first music therapy treatment was carried out with song number three, the patient

experienced quite a high level of stress. This can be seen from the initial BPM of 82 and the initial GSR of 683. In opening seven patients received music therapy treatment with music therapy with number three with a BPM resulting from music therapy of 69 and a GSR resulting from music therapy of 650. After the patient experienced a reduction in stress through the first music therapy treatment, then the patient is able to move around the room while experiencing moderate contractions.

Two hours later, the AS patient was examined by the hospital midwife to check the opening/contractions of the normal labor process. Judging from these results, the patient is already in an eight-opening condition. In the next hour and a half, As asked for a second music therapy treatment. Initial BPM 72 and initial GSR 652 with therapy music number 11 (*Senandung Bidadari*). The results obtained were that the BPM from



music therapy was 64 and the GSR from music therapy was 630. Then, after experiencing calm, AS continued walking around the delivery room.

Next, AS was checked again by the hospital midwife to find out where the contractions/openings had reached. Then it was discovered that the AS patient had experienced nine contractions/openings. Researchers approached AS to carry out a third music therapy. In this condition, AS patients have started to experience very painful contractions because the baby is about to head down (ready to be born). AS agreed to do the third music therapy where the initial BPM was 102 and the initial GSR was 669. The researcher carried out music therapy where AS asked for music therapy number three again (*Alam Menyapa*). After listening to therapeutic music, the BPM resulting from music therapy became 51 and the GSR resulting from music therapy became 602. Judging from the results of three music therapy treatments for AS patients, the success rate is quite significant.

Furthermore, patient VG (20 years) is a mother who is ready to give birth to her first child. The first music therapy treatment for VG was carried out at opening six. Initial BPM 74, initial GSR 490 with therapy music number 3 (*Alam Menyapa*). After listening, the patient feels calm and can reduce the pain caused by contractions. Four hours later the patient experienced mild contractions so the hospital midwife re-checked the level of contraction/opening. After checking, it was still in the sixth contraction/opening position.

For this reason, the midwife calls the doctor to inform him of the patient's condition. So the doctor stated that the patient had to be induced to speed up contractions/openings for childbirth. This action was carried out because the VG patient was giving birth to her first child for the first time. After the induction, VG asked the researcher to experience music therapy a second time. Initial BPM 76 and initial GSR 401 with therapy music number 3 (*Alam Menyapa*). After doing music therapy the second time, the BPM from music therapy was 84 and the GSR from music therapy was 321.

Then the VG patient returned to movement by walking in the delivery room. After a while the patient experienced contractions which were quite painful and the midwife checked again that at that time the patient was already in a contraction/eight

opening condition. This shows that music therapy is very beneficial for VG patients.

Two hours later, VG experienced very painful contractions. With the situation experienced by VG, researchers recommended that he undergo music therapy treatment a third time. This treatment is approved by VG patients. The initial BPM was 94 and the initial GSR was 505. After the third music therapy treatment, the BPM resulting from music therapy was 75 and the GSR resulting from music therapy was 284 with music therapy number 11 (*Senandung Bidadari*). VG asked to repeat the therapy music with the same number twice. According to VG, therapy music number 11 really makes him calm and really reduces pain. After an hour, VG experienced excruciating pain due to contractions. Then the midwife checked again and stated that she was in the ninth contraction/opening position.

From the results of research for AS and VG patients who are normal prenatal patients, it can be stated that music therapy is useful before the tenth contraction or opening process. The reasons the doctor did not allow the researcher to carry out music therapy on the two patients were: (1) the patient was in a lying position; (2) the position of the patient's legs ready for delivery; (3) medical ethics states that those who have the right to be in the room when a patient is about to give birth are the patient's husband/family, doctor, nurse and midwife; (4) a comfortable place is needed when the patient is ready to push to give birth so that music therapy cannot be carried out.

## 2. Postpartum Patients

Patients who received music therapy treatment during postpartum were with the initials AN (35 years) and AH (39 years). The two patients came to the Martha Friska Multatuli Hospital in Medan in eight and nine openings, which means the patient was experiencing very painful contractions.

Both patients attended music therapy on different schedules. AN on 08/22/2023 while AH on 08/21/2023. Furthermore, AN received music therapy after three hours and AH received music therapy two hours after giving birth. AN gave birth to her third child, a boy weighing 2.8 kg at 04.15 WIB. AN is a nurse from Martha Friska Multatuli Hospital, Medan. Meanwhile, AH gave birth at 24.15 WIB, where AH gave birth to her fourth female child, weighing 2.1 kg. AH is a housewife. AN experienced the process of giving birth with the baby in a breech position so that after giving

birth AN received eight stitches on the inside of the vagina. Meanwhile, after giving birth, AH only received three stitches. AH gave birth with the baby in a normal position.

Both patients received music therapy by researchers two to three hours after giving birth. AN and AH received two treatments. The treatment was carried out with the position of choosing therapy music number three (*Alam Menyapa*) and number 11 (*Senandung Bidadari*). The choice of song was based on the wishes of the two patients. The first treatment was for AN patients where the initial BPM was 111 and the initial GSR was 480. After carrying out music therapy by selecting therapy music number 3 (*Alam Menyapa*) the result was a BPM resulting from music therapy 103 and a GSR resulting from music therapy 198. Meanwhile AH chose therapy music number 3 (*Alam Menyapa*) with an initial BPM position of 64 and an initial GSR of 577. The results of the first treatment for AH were a BPM resulting from music therapy of 57 and a GSR resulting from music therapy of 352.

The position of the two patients during the first treatment was in the stage of feeling pain due to the stitches. The patient felt the pain very painfully, but after the first treatment, according to

the patient, he relaxed and began to feel sleepy. The second treatment was carried out three hours later in different positions. AH performed music therapy for the second treatment in a sitting position. AH's data had an initial BPM of 71 and an initial GSR of 676. After receiving music therapy treatment by selecting therapy music number 11 (*Senandung Bidadari*), the results obtained were a music therapy BPM of 70 and a music therapy GSR of 568.

Next, for AH patients, music therapy treatment was carried out in a lying position where the initial BPM was 102 and the initial GSR was 615. After carrying out music therapy a second time by selecting therapy music number 11, the results obtained were the BPM resulting from music therapy in position 95 and the GSR resulting from music therapy. in position 525. When patient AH listened to therapy music, he became very sleepy so he fell asleep. According to patient AH, from the start of the sixth contraction/opening process until giving birth, the patient lacked sleep.

From the results of the two postpartum patients above, it can be concluded that these patients experienced decreased stress and decreased pain. Both patients also felt sleepy so they fell asleep while listening to therapeutic music.



**Figure 4:** Patients with pregnant using the Music Box Therapy

## CONCLUSION

Martha Friska Hospital is a hospital in Medan City. On average, patients who undergo health checks are patients who use BPJS. Patients who use BPJS usually control their health once a month. Especially for pre-natal and post-natal patients, these are patients who use BPJS, so that all medication and actions carried out during the birth and post-natal process are covered by BPJS

for all costs. The research carried out at Martha Friska Hospital was for patients using BPJS who experienced nervous disorders and pre- and post-natal mothers, where this had been mutually agreed with the hospital. This is done so that patients who take part in the music therapy program receive at least two music therapy test treatments. From the results of the research carried out, there were a total of 26 patients, of which 22

were patients who experienced nervous disorders and 4 patients were pre- and post-natal mothers. Based on the results of the research above, the researchers concluded that the average initial GSR of all patients before music therapy treatment was around 439-696. Then the average initial BPM is from 32-116. After music therapy treatment was carried out on patients, the average GSR changed to between 263 – 600 and BPM after music therapy treatment also changed to an average of 46-105. Based on the results of researchers' observations in the field before music therapy treatment was carried out, the average stress level of patients was moderate stress (601-725). After music therapy treatment was carried out on all patients, the average patient stress level showed a decrease to Light Stress, namely between (526-600).

Some patients showed significant changes after receiving at least two treatments of music therapy. From the results of music therapy research on pre- and post-natal mothers, researchers found that VG patients experienced stress in a relaxed position (490) and after receiving music therapy treatment three times, VG reached a normal position (284). AN patients before receiving treatment had moderate stress levels (615) and after receiving music therapy treatment three times, AS patients reached normal levels (198). Then, before patient AH received music therapy treatment, his stress was at a moderate stress level (668) and after receiving music therapy treatment three times, patient AH experienced a decrease in stress to 352 in a relaxed level position. The choice of therapy music for VG, AN and AH is based on the patient's own choice. On average, the therapy music requested by patients is number 3 (*Alam Menyapa*) and number 11 (*Senandung Bidadari*).

The relationship between music therapy and patients is through a Music Therapy Box (BmT) where the device is a combination of sensor components from Galvanic Skin Resistance (GSR) and MPX5050dp. GSR is to determine the level of stress where the GSR is arranged in such a way through the skin rather than the fingers and the same goes for the MPX5050dp (to determine blood pressure). Through a series of GSR sensors, MPX5050dp and music therapy which has been created specifically for BmT devices, you can see differences in stress levels and blood pressure in patients who do music therapy. This was done by researchers to improve the quality of BmT so that this music therapy tool can be used by various groups of society to maintain health stability

caused by high stress. The relationship of sound waves from each therapeutic music created with the GSR and MPX5050dp is crucial in reducing the patient's stress levels.

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