



## Using Calming Beds to Reduce PANNS-EC Scores in Patients with Violent Behaviors

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### ABSTRACT

Background: Patients with violent behaviors have the potential to harm themselves, others, and their environment. The management of patients with violent behavior needs to consider various aspects, one of which is patients' spiritual aspect. Combining a spiritual therapy of listening to Qur'an recitation, acupressure, and using a new innovation of a calming bed during the intervention is expected to increase the effect of relaxation and patients' comfort to optimize the intervention outcomes, namely to reduce aggression level in patients with violent behaviors. Objective: This study aimed to determine the effect of the combined intervention of listening to Qur'an recitation (murottal), acupressure, and using a calming bed on reducing the Positive and Negative Syndrome Scale - Excited Component (PANSS-EC) scores in patients with violent behaviors. Methods: This study used a pre-post test quasi-experimental design without a control group. A total of 50 respondents who agreed to participate in the therapy entirely were randomly recruited. The therapy was given four times with a duration of 30 minutes each. The paired t-test was performed to find out the effect of the intervention. Results: The results showed a significant effect of the intervention on reducing the PANSS-EC score among patients with violent behavior ( $p=0.000$ ). Conclusion: The combination intervention of listening to Qur'an recitation, acupressure, and use of calming beds can reduce symptoms of violent behaviors by decreasing the PANSS-EC scores. This study suggests using spiritual intervention to help patients with violent behaviors reduce their aggression.

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#### Kata kunci:

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### ABSTRAK

Latar Belakang: Pasien dengan perilaku kekerasan berpotensi membahayakan diri sendiri, orang lain, dan lingkungannya. Penanganan pasien dengan perilaku kekerasan harus memperhatikan berbagai aspek, salah satunya adalah aspek spiritual. Kombinasi terapi spiritual dengan mendengarkan murottal dan acupressure, serta inovasi terbaru penggunaan calming bed selama pemberian intervensi diharapkan mampu meningkatkan efek relaksasi dan kenyamanan pasien sehingga dapat mengoptimalkan hasil intervensi yang diberikan yaitu untuk menurunkan tingkat agresi pada pasien dengan perilaku kekerasan. Tujuan: Penelitian ini bertujuan untuk mengetahui efektivitas intervensi kombinasi antara mendengarkan murottal dan acupressure serta penggunaan calming bed dalam menurunkan PANSS-EC skor. Metode: Penelitian ini merupakan penelitian dengan pre dan post-test intervensi tanpa kelompok kontrol. Sampling yang digunakan adalah randomized control trial dengan 50 responden yang bersedia mengikuti terapi dari awal sampai akhir. Terapi diberikan sebanyak 4 kali dengan durasi 30 menit per intervensi. Analisis yang digunakan adalah paired t-test untuk mengetahui pengaruh intervensi.

Hasil: Hasil penelitian menunjukkan adanya pengaruh yang signifikan dari pemberian intervensi spiritual kolaborasi dengan acupressure dan calming bed terhadap penurunan perilaku kekerasan dilihat dari skor PANSS-EC ( $p=0,000$ ). Kesimpulan: Intervensi kolaborasi yang diberikan dapat menurunkan gejala perilaku kekerasan dengan penurunan skor PANSS-EC sesudah intervensi. Dalam pelayanan kesehatan disarankan adanya terapi spiritual dalam membantu menurunkan tingkat agresi pada pasien.



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## INTRODUCTION

Violent behaviors have been the most common problem in patients with schizophrenia. Violent behaviors occur due to the inability of the patients to control emotions or anger, resulting in aggressive behaviors both verbally and physically, which are directed at oneself, others, and the environment. Violent behaviors can manifest in verbal and non-verbal threats, such as destroying goods and the environment and hurting oneself or others (Kandar & Iswanti, 2019; Nurhalimah, 2016; Rizki & Wardani, 2021). Patients with violent behaviors who are admitted to a psychiatric intensive care unit in a psychiatric hospital require fast and safe treatment for both patients and health workers who provide care. It is because the patient's condition is precarious. Close monitoring is also necessary to prevent harm, either to oneself or others. Monitoring also needs to be performed when the patients are restrained (Setiawan et al., 2017).

The management of patients with violent behaviors has, so far, focused on biological treatment with drugs. However, since violent behaviors are associated with emotions, it is necessary to treat the patients holistically, one of which is using a spiritual approach to help the patients recover their psychological states. A previous study has proven the effect of simple spiritual therapies such as dhikr and listening to the recitation of the verses in the Holy Qur'an on the patients' ability to control violent behaviors (Ernawati, Samsualam, & Suerni, 2020). Simple spiritual therapies are also understood and practiced to strengthen self-control, increase the ability to control emotions and spiritual well-being, and prevent anger and overcome psychosocial problems (Asadzandi et al., 2017; Asadzandi & Eskandari, 2018).

The patients' ability to be aware of violent behaviors can be promoted by increasing a sense of relaxation. Therefore, when a feeling of anger is about to appear, it is expected that patients can be aware of, control, and accept it and then manage it properly. For doing so, repeated training is required so that patients can increase their ability not to commit violence against themselves and others (Mohammadiarya et al., 2012).

Several spiritual therapies for patients with violent behaviors have been applied using various media according to the belief/religion of each patient. For example, holy books such as Bhagwat Gita, Tripitaka, Bible, and Al-Quran could be used to help patients overcome the problems/emotions they are experiencing. In addition, behavioral changes for spiritual independence such as getting up early, praying, fasting on behalf of their God, listening to peaceful music and bhajans, meditation, and other spirituality-related activities can help patients improve their mental health (Poudel, 2020).

In Islam, listening to the Qur'an recitation (murottal) provides various benefits. Research has shown that this activity can reduce stress hormones, activate endorphins, increase relaxation, divert fear, anxiety, and tension, and improve the body's chemical system that could lower blood

pressure and slow down breathing, heart rate, pulse, and brain wave activity. This deep or slow breathing rate is excellent for creating a sense of relaxation, controlling emotions, taking deep thinking, and having a better metabolism. A spiritual therapy by listening to the Qur'an recitation can make patients with violent behaviors feel more relaxed and calm and reduce their emotional levels. It can also help patients be aware of what they are doing (Saputri, Heppy, & Sawab, 2015; Ramadan et al., 2020).

Research shows that listening to the Qur'an recitation of Surah Ar-Rahman can reduce anxiety. Meanwhile, acupressure can provide a physical relaxing effect. A combination of these therapies works more effectively than a single intervention. A retrospective analysis demonstrated the potential of acupressure as an effective complementary and non-pharmacological therapy for pain and anxiety with a high satisfaction rate from the participants (Monson et al., 2019). The combination of the two interventions, i.e., acupressure and Qur'an recitation therapy, should be carried out in a relaxing state. This kind of state can be created by applying the therapy in a special bed, such as a calming bed. This bed is a technological innovation that is developed to understand what patients with violent behaviors experience and functions as a means to provide therapy for patients with violent behaviors to support their recovery.

The decrease in the aggression levels in patients with violent behaviors can be measured using several instruments, one of which is the Positive and Negative Syndrome Scale - Excited Component (PANSS-EC). The PANSS-EC is used to assess the level of noise and anxiety in patients with mental health who are at risk of harming themselves and others. This tool consists of some components, including excitement, poor impulse control, tension, hostility, and uncooperativeness. Each symptom is rated on a rating scale from 1 (no symptom) to 7 (very severe symptom), with a total score ranging from 5 to 35 (Biondi, Pasquini, & Tarsitani, 2021). A previous study showed a decrease in the scores of PANSS-EC among schizophrenic patients after the application of the Qur'an recitation therapy (Ramadan et al., 2020).

Based on the previous description, the researchers were interested in conducting a study to analyze the effect of the combined intervention of listening to the Quran recitation of Surah Ar-Rahman and acupressure using a calming bed on decreasing the PANSS-EC scores in patients with violent behaviors in a psychiatric hospital.

## METHODS

### Participant characteristics and research design

This study employed a pretest-posttest quasi-experimental design without a control group. The participants were patients with violent behaviors. The inclusion criteria

included patients who were: (1) Muslim, (2) did not have hearing loss, and (3) willing to be treated with a calming bed. This study was conducted from October to December 2021.

### Sampling procedures

The sampling method used in this study was a randomized controlled trial.

### Sample size, power, and precision

The samples in this study were 50 participants.

### Measures

The Positive and Negative Syndrome Scale - Excited Component (PANSS-EC), which consists of positive symptoms, negative symptoms, and general psychopathology, was used in this study. This instrument was completed by the doctor in charge of the patients. Each symptom was rated on a rating scale between 1 (none) to 7 (very severe), with a total score ranging from 5 to 35.

### Intervention

The intervention used in this study was the calming bed, which was a combination of the Qur'an recitation (murottal) audio therapy and acupressure in a bed, which made the patients calm and able to perform actions comfortably. This intervention was carried out four times using Surah Ar-Rahman and three points of acupressure induction. The followings were the stages of the intervention:

#### 1. Pre-interaction stage

This step aimed to prepare the necessary tools, such as beds, MP3 players, headphones, and hand sanitizers. The researchers collected the necessary data of the patients from

both medical records and information from nurses or doctors. Next, a time contract with patients was also made.

#### 2. Orientation stage

In the orientation phase, the health workers greeted the patients by name, explained the purpose and goals of the therapy, and validated the patients' current feelings. If the patients looked restless, the therapists could guide the patients to ask for forgiveness (istighfar) to Allah until the patients wanted to follow the procedure.

#### 3. Work stage

In this stage, the therapists helped the patients put on headphones and played the recitation of Surat Ar-Rahman for the patients to listen to. The therapist performed the acupressure while the patients were listening to the murottal.

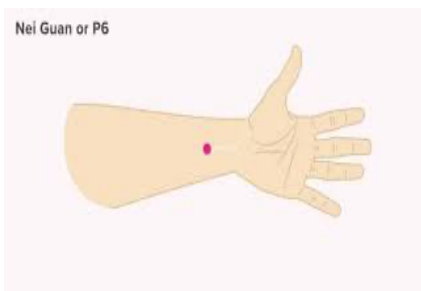
#### 4. Termination stage

In this stage, the therapists evaluated the intervention by asking about the patients' feelings after the therapy and made another time contract for further therapy. Results of the evaluation showed that: (1) patients had a calm and relaxed mind, (2) emotions were controlled from negative to positive, (3) agitated patients turned into calm and relaxed patients, and (4) the PANSS scores decreased to < 20.

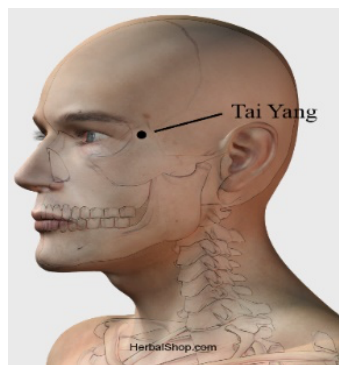
### Data analysis

Univariate and bivariate analyses were employed in this study. The univariate analysis was used to determine the frequency distribution of the respondents' characteristics, length of stay, and PANSS scores. Meanwhile, the bivariate analysis was carried out using a paired sample t-test to determine the effect of the calming bed intervention on decreasing the PANSS scores among the patients.

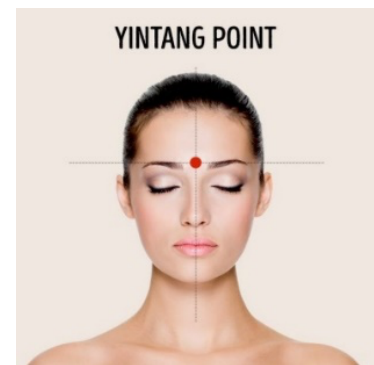
Table 1. Areas for acupressure therapy



*Nequan point*



*Tai Yang point*



*Yintang point*

## RESULTS

This study was conducted among 50 patients with violent behaviors in Dr. Amino Gondohutomo Psychiatric Hospital, Central Java, Indonesia.

### Characteristics of the respondents

The distribution of respondents' characteristics in this study was based on age, education level, occupation, and

marital status. The characteristics of the respondents are presented in Table 4.1.

Table 4.1 shows that the majority of respondents were aged 26-35 (34%), elementary school graduates (44%), private employees (34%), unemployed (34%), and unmarried (56%).

**Table 4.1. Characteristics of the respondents (N=50)**

Variable	Frequency	
	n	%
<b>Age (years)</b>		
15-25	13	26.0
26-35	17	34.0
36-45	9	18.0
46-55	7	14.0
56-65	3	6.0
> 65	1	2.0
<b>Education</b>		
Elementary School	22	44.0
Junior High School	11	22.0
Senior High School	15	30.0
Diploma	2	4.0
<b>Occupation</b>		
Unemployed	17	34.0
Private employee	17	34.0
Laborer	9	18.0
Students	2	4.0
Housewife	5	10.0
<b>Marital Status</b>		
Married	15	30.0
Unmarried	28	56.0
Widow/Widower	7	14.0

### Length of Stay

Table 4.2 shows that the respondents' average number of days of hospitalization was 4.6 days. The minimum and the maximum number of days of hospitalization were 2 and 8, respectively.

**Table 4.2. Length of stay of the respondents (N=50)**

Variable	Mean± SD	Min-Max
Length of stay	4.6 ± 1.8	2-8

### Skor PANSS

Table 4.3 shows changes in the PANSS scores before and after the intervention. After the intervention, the number of patients experiencing positive symptoms increased from 13 (26%) to 50 (100%).

**Table 4.3. The PANSS scores before and after the intervention (N=50)**

Category	Pre-test		Post-test	
	f	%	f	%
Positive	13	26.0	50	100.0
Negative	37	74.0	0	0
<b>Total</b>	50	100.0	50	100.0

### Differences in the PANSS scores

**Table 4.4. Differences in the PANSS scores among the respondents (N=50)**

Variable	t	p
Pre-test and Post-test	18.245	0.000

Based on the paired sample t-test in Table 4.4, there was a significant effect of the calming bed intervention on decreasing the PANSS scores in patients with violent behavior ( $p=0.000 < 0.05$ ).

## DISCUSSION

This study aimed to determine the effect of the calming bed intervention on decreasing the PANSS scores in patients with violent behaviors. The analysis using the paired sample t-test showed a significant effect of the intervention on decreasing the PANSS scores. This study found a significant difference in the PANSS scores before and after the intervention ( $p=0.000 < 0.05$ ). The number of patients experiencing positive symptoms significantly increased from 13 (26%) to 50 (100%) after the intervention. The decrease in the PANSS scores in this study is in line with a study conducted by Ramadan et al. (2020), which showed a significant difference in the average PANSS scores between the intervention group and the control group with a p-value of 0.005. Therefore, it was concluded that listening to the Qur'an recitation could reduce the PANSS scores in patients with violent behaviors (Ramadan et al., 2020).

Violent behaviors occur due to the individual's inability to control emotions or anger, resulting in aggressive behaviors, both verbal and physical, directed at oneself, others, and the surrounding environment (Nurhalimah, 2016; Rizki & Wardani, 2021). Given that violent behaviors have a relationship with emotions, it is necessary to treat the patients holistically.

The intervention innovation in this study was the calming bed. This technological innovation is developed to understand what patients with violent behaviors experience and functions as a means to provide therapy to support the recovery of the patients. The intervention was a combination of the Qur'an recitation (murottal) of Surah Ar-Rahman with acupressure. Based on previous studies, spiritual therapy by listening to the Qur'an recitation had a positive effect on emotions and could change violent behaviors in schizophrenic patients (Herniyanti, Malini, & Netrida, 2019; Wahid & Nashori, 2021). Acupressure also provides relaxation and comfort effects. Therefore, the combination of these therapies works more effectively than implementing a single intervention.

Murottal is the recitation of the holy verses of the Qur'an by a qori (someone proficient in the chanted recitation of the Qur'an) with correct tajwid and with a tempo between 60-70 times per minute in a low, rhythmic, constant, and regular tone. This therapy can influence the feelings, emotions, and thoughts of individuals. The murottal of Qur'an will provide a calming effect, reduce stress, activate natural endorphins, and improve chemical systems in the body (Herniyanti, Malini, & Netrida, 2019). Physically, murottal contains elements of the human voice that have a substantial therapeutic effect. These effects can reduce stress hormone levels, activate natural endorphins, increase calmness, divert attention, and reduce anxiety. The decrease in stress hormones and the production of endorphins will stimulate the sympathetic nerves that contribute to the body's metabolism, characterized by a decrease in blood pressure, pulse, and respiratory rate. Also, the heard murottal sound will create alpha waves on the Electroencephalograph (EEG), showing the presence of relaxation when the body is still silent and awake. Furthermore, listening to the Qur'an murottal for Muslims is one of the recommended forms of

worship. Listening to murrotal can be performed in various conditions, such as healthy, sick, sad, and happy (Wirakhami, Novitasari, Purnawan, 2019).

The therapy in this study used Surah Ar-Rahman. The patients were given the murrotal therapy of Surah Ar-Rahman as it is considered faster in increasing spirituality that form positive thoughts in individuals (Mulyani, Purnawan, & Upoyo, 2019). Most verses in Surah Ar-Rahman describe the love of Allah, and some verses are repeated up to 31 times to explain the great blessings given by Allah. The repeated verses will send a message repetition to the individuals so that it gives repeated instructions continuously. The message will eventually be embedded in the individuals' subconscious mind to stimulate a belief that it can increase spirituality. High spirituality will direct individual thoughts and attention to positive things so that emotions that arise in themselves can be controlled (Mulyani et al., 2019).

Acupressure is a complementary therapy with therapeutic techniques that use finger pressure at specific points along the body's energy meridians (Abidin, 2020; Dossey & Keegan, 2016). Acupressure aims to support the healing process, relieve tension, promote relaxation, and improve overall health (Wagner, 2015; Dossey & Keegan, 2016). Healing touch in acupressure also shows caring behavior between nurses and patients (Komariah et al., 2021). In addition, manual stimulation of acupressure points has been shown to increase the production of serotonin and endorphins, which play a role in cortisol regulation. Serotonin functions to regulate mood and sleep, while endorphins are natural opiates in the body that can trigger a calming response and raise the spirit, have a positive effect on emotions, as well as reduce anxiety, and increase relaxation and normalization of the body functions (Hajiri, Pujiastuti, & Siswanto 2019).

The acupressure employed in this study is the "Hanung induction" – a technique performed by a gentle massage at three acupuncture points, namely the *Neguan*, *Taiyang*, and *Yintang* points. The researchers in the present study used this technique as it has been proven to give positive results, and the clients felt comfortable. Moreover, this technique is considered more effective, easy, and safe in its practice (Prasetya, 2017). The first point is the *Neguan* point, which is the inside part of the client's wrist, mainly three fingers from the wrist to the inside part of the elbow joint between the tendons of the palmaris longus muscle and the tendons of the flexor carpi radialis muscle. The second is the *Taiyang* point, which is precisely located in the curve at the intersection of the line of extension of the eyebrow arch and the horizontal line of the corner of the eye. The third is the *Yintang* point, namely the nose bridge, which is the middle part of the eyebrow tips or the distance between the superior medial orbital ends (Prasetya, 2017).

In this study, the latest technological innovation, namely the calming bed, was used. This bed is one of the innovations that is made to support the recovery of patients with violent behaviors who will be given murrotal therapy and acupressure. The calming bed is made to increase and optimize the relaxation effect on the patients by creating a sense of comfort when the patient lies down during the application of the murrotal therapy and acupressure. This innovation is proven to have a positive impact and relaxation effect on patients when they are undergoing the therapy. The resulted relaxation effect contributes to optimizing the decrease in symptoms of violent behaviors, as indicated by a decrease in the PANSS-EC scores. Research has shown a relationship between environmental modification and the aggression level of patients with violent behaviors in a psychiatric ward. This study concluded that the aggression

level was lower in patients who were placed in a new environment/ room that had been modified in such a way with a higher level of comfort than those patients who were placed in an old room with no modification. In this study, the environmental modifications were made to replace a single bed and increase the lighting/visibility of the room to create comfort (Ulrich et al., 2018; Suhron, 2018).

Stressors that the patients experience in the inpatient wards are considered a potential factor that triggers and fosters patient aggression. The physical environment will significantly affect the level of stress in patients. Facilities designed with a poor comfort level can also exacerbate the level of aggression and vice versa. The combination of several interventions that support comfort in patients can reduce stress and aggression levels more optimally when compared to the application of a single intervention (Ulrich et al., 2018).

#### LIMITATION OF THE STUDY

This study has some limitations. Some patients were less cooperative when headphones were put on; they frequently held or played with these headphones. Sometimes patients also fall asleep, which extended the duration of the intervention.

#### CONCLUSION AND SUGGESTIONS

The calming bed intervention has a significant effect on decreasing PANSS scores in patients with violent behaviors. This intervention could be a priority in mental health services to help health workers reduce symptoms of violent behaviors in patients and support patients' assertive behaviors.

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#### ETHICAL CONSIDERATIONS

All procedures in this study involved schizophrenic patients at Dr. Amino Gondohutomo Psychiatric Hospital, Central Java, Indonesia. All procedures in this study were conducted following the ethical standards of institutional/national research committees. This research was also conducted with the permission of the Research Ethics Commission of the Dr. Amino Gondohutomo Psychiatric Hospital, Central Java, with a reference number of 8850/UN7.5.4.2.1/DL/2021.

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