

The Effect of giving Anthocyanin and Assertive Supportive Therapy on the ability to overcome violence behaviors of Schizophrenia patients

Nani Avianti¹, Desmanarti Z.¹, Gurid PE Mulyo¹ *



¹Poltekkes Kemenkes Bandung

Abstract— People who have mental disorders in West Java, Indonesia, are still in stocks for various reasons. They cannot control their behavior. Their behavior is at risk of injuring themselves, others, and the environment. This study aimed to analyze the effect of anthocyanin and assertive supportive group therapy on the ability to overcome the violent behavior of Schizophrenia patients in the West Java Provincial Hospital. Design this research was a Quasi-experimental research design with a pre-posttest control design approach. Total samples were 36 patients, every 18 patients for the treatment and control groups. The treatment group was given assertive supportive group for 4 days. In the intervention group, after the post-test, patients were given food containing anthocyanin in the form of black sticky rice bars twice a day for 10 days. The results showed a significant difference after therapy in the assertive supportive group in the treatment group and the control group (p-value 0.000). At the same time, the anthocyanin nutrient administration did not affect (p-value 0.292). There was an effect of assertive supportive group therapy on the ability to overcome the violent behavior of Schizophrenia patients in a psychiatric hospital, West Java, Indonesia. Also, anthocyanin can bit increase the average value of the ability to cope with violent behavior. Recommendations for effective assertive supportive therapy are carried out in small groups.

Keyword: assertive supportive, Anthocyanins, Schizophrenia

INTRODUCTION

Based on data from the Basic Health Research (Rikesdas) in 2018, it is known that the prevalence of Schizophrenia in Indonesia is 6.7% with the proportion of households that have Schizophrenia mental illnesses who have been put in a disorder of 14%. [1] One of the reasons for the family abuses is that it is more due to Schizophrenia is not being able to control their behavior, where their behavior is at risk of harming themselves, others, and the environment.

Changes in neurotransmitters cause Schizophrenia. Serotonin is a neurotransmitter that has an important role in the occurrence of anxiety and mood disorders in Schizophrenia patients. [3] According to Wnuka A, et al. (2012) that various hormones cause changes in mood, the hormone estrogen has a direct impact on serotonin, meaning that estrogen can directly trigger serotonin secretion. [6] Estrogen has a direct impact on target organs and tissues if the tissue has estrogen receptors. Estrogen receptors are a group of proteins that are activated by the hormone estrogen, consisting of estrogen receptors α and β . α receptors can activate several areas in the brain and other organs such as the uterus, testes, ovaries [7]

The main estrogen hormone secreted by the ovary is estradiol (17 β flavonoids and anthocyanins).[7] Black sticky rice contains flavonoids and anthocyanins, which have phytoestrogen activity.[8] Anthocyanin is a flavonoid found in fruits and vegetables and other agricultural products such as spinach, carrots, and anthocyanins, which have phytoestrogen activity. several types of rice include black glutinous rice.[9] Anthocyanins have a structure similar to estrogen, exhibiting invitro, and in vitro activity of phytoestrogens.[10] Phytoestrogens as non-steroidal compounds have the same structure as natural estrogens. the OH groups contained in estrogen and anthocyanin are structures the main cause of estrogenic effects to be able to bind to estrogen receptors that can activate several areas in the brain, as one of the target organs of the hormone estrogen.[7] Estrogen hormones can trigger direct serotonin secretion.6 Serotonin acts as a major inhibitor of violent behavior.[3]

People with Schizophrenia have violent behavior that can result in someone injuring themselves, others, and the environment.[2] Violent behavior can also be overcome by providing assertive therapy.[2,3] Assertive therapy is part of a nursing modality therapy in the form of group therapy that facilitates patients learn to express angry feelings assertive or appropriate, so as not to interfere with other people's relationships.[2]

In addition to assertive therapy, the patient's ability to cope with violent behavior can be improved with supportive therapy.[3] Hidayati's research, E (2012), states that there is a significant difference in the client's ability to cope with violent behavior before and after being given supportive group therapy (p-value 0.000).[4] Researchers combine supportive and assertive therapy, where patients are invited together in groups to provide mutual support in assertive behavior. Forms of group support are provided through honesty, openness, conformity, mutual respect for the rights of others, and oneself.[2,3] Individuals develop new behavior patterns to stop old behavior in various ways, such as through positive and negative modeling and reinforcement.

Violent behavior is one of the behavioral changes experienced by Schizophrenia patients.

Based on the description above, after assertive supportive therapy, the patient will also be given nutrition in the form of a black sticky rice snackbar containing anthocyanins.

METHOD

The research design used a quasi-experimental approach with a pre-posttest control design. This design was used to analyze the effect of assertive and nutritional supportive therapy on the ability to cope with violent behavior in schizophrenia patients at RSJ, West Java Province. This research was conducted from August to December 2019, which has been declared worthy of ethics from the Health Research Ethics Commission No.30 / KEPK / PE / VIII / 2019.

Sampling using purposive sampling, with inclusion criteria: Schizophrenia patients who have a history of violent behavior, have an orientation towards reality (time, place and people) and are aware of why they are cared for in RSJ, can work together as stated on the scale of RUPA (General Response Adaptation Function)): 2, able to read and write and listen, willing to be a respondent, aged 18-45 years and currently receiving antipsychotic drug therapy.

The results of the calculation of the minimum sample size using the formula to test the hypothesis on the difference of two unpaired means (Lameshow 1997 in [11]), namely 16 subjects. The addition of 10% of the sample was carried out to avoid sample dropouts so that the total sample in each group was 18 subjects.

This study used a measuring instrument based on Hershorn's anger management techniques, which consisted of 20 statements. [12]

The 20 questions cover several aspects. First, aspect C (Commitment), namely, commitment to change oneself. The second aspect A (Awareness), namely awareness of signs of anger (physiologically, behavior, and cognitively). The third aspect of R (Relaxation) is used in increasing the ability to control violent behavior, apart from social, spiritual, and verbal. The last aspect is E (Exercising control with time outs), which is the time when individuals stay away from situations that cause anger and assertive behavior in dealing with stressors. This measuring instrument is in the form of a Likert scale. For positive statements given a value of 1 starting from always (SL), a value of 2 often (SR), a value of 3 sometimes (KK), and a value of 4 is never (TP). For negative statements, the value of 1 starts from TP, the value of 2 KK, the value of 3 SR, and the value of 4 SL. Researchers have tested the validity and reliability of 30 patients. The results of the instrument test were 20 valid statements with values ranging from 0.479 to 0.614, and reliable, which were expressed by a Cronbach alpha value of 0.7.

Data collection techniques started from identifying respondents according to the criteria, then explaining the objectives and benefits of the study, and completing informed consent. The assertive supportive group therapy program was carried out in groups of 2-3 patients for 4 sessions. Each session lasts 45-60 minutes, with the distance from one session to another is one day. In the treatment group, after being given assertive supportive group therapy, then the subjects were given food containing anthocyanins in the form of a black sticky rice snackbar (*Oryza sativa*..Varglutinosa) 2x1 a day for 10 days.

Univariate data analysis used the mean, standard deviation, and minimum - maximum values before and after treatment. While the analysis of bivariate data using independent t-test.

RESULT

The results of the univariate analysis are depicted in Tables 1 and 2

Table 1: Ability to overcome violent behavior in Schizophrenia patients before and after Intervention

(n = 18)					
Variable	Group	Intervention	Mean ± SD	t	P
Ability to cope with violent behavior	Treatment	Pre	38.11±3.61	23.87	0.00
		Post	66.94±7.57		
	Control	Pre	39.83±5.84	5.0	0.00
		Post	44.94±7.13		

Table 1 shows that there are differences in the ability to overcome violent behavior in Schizophrenia patients before and after the intervention in the treatment and control groups.

Table 2: The difference in average ability to overcome Violent Behavior in Schizophrenia patients before and after Anthocyanin Nutrients in the treatment group (n = 17)

Variable	Anthocyanin Interventions	Mean \pm SD	<i>t</i>	<i>p</i>
Ability to cope with violent behavior	Pre	67.82 \pm 6.79	1.77	0,094
	Post	70.23 \pm 5.40		

Table 2: Shows that before and after anthocyanin nutrition, there is no difference in the ability to overcome the violent behavior of Schizophrenia patients in the treatment group.

The results of the bivariate analysis are depicted in Table 3.

Table 3: The difference in Average Ability to Overcome Violent Behavior in Schizophrenia Patients After Intervention in the Treatment and Control Groups (n = 18)

Variable	Group	Mean \pm SD	<i>t</i>	<i>p</i>
Ability to cope with violent behavior	Treatment	66,94 \pm 7,57	8.9	0,00
	Control	44,94 \pm 7,15		

Table 3 shows that there are differences in the ability to cope with the violent behavior of Schizophrenia patients after the intervention in the treatment and control groups.

DISCUSSION

The results showed that the increase in the average score before and after the intervention to overcome violent behavior in the treatment group in the form of assertive supportive group therapy was greater than the increase in the average score in the control group. The results of the t dependent test in the treatment group showed that there was a difference in the average value of the ability to overcome violent behavior before and after being given assertive supportive group therapy with a p-value of 0.00. In the control group, it was obtained a p-value of 0.00. The results of the independent t-test showed that there was an effect of assertive supportive group therapy on the ability to overcome violent behavior in Schizophrenia patients, which was started with a p-value of 0.00. The results of this study are in line with research by Hidayati Eni (2012) [4] that there is an effect of supportive group therapy on the ability to overcome violent behavior in Schizophrenia patients with p-value 0.00.

Mutiara (2017) [13] research results show that supportive therapy can help subjects (Schizophrenia spouses) improve their emotional management skills, while the results of research (Falentina and Yulianti, 2012), [14] show that there is a significant correlation between assertiveness and expressions of angry emotions in adolescents. This research is also supported by research by Khamida (2013) [15] that assertive supportive group therapy affects the violent behavior of Schizophrenia patients with a p-value of 0.045, while according to research by Saraswati (2019) [16], the experimental group shows a significant increase in optimism scores compared to the group. Controls who did not receive supportive group therapy.

Based on research conducted by Winahayu (2019), assertive training and supportive groups using Stuart's stress adaptation theory and Roy's adaptation theory can reduce signs and symptoms of violent behavior in cognitive, affective, physiological, behavioral and social aspects. Also, it can increase the adaptive ability to deal with events that occur leads to behavior violence. [17]

The results of this study also showed an increase in the average value of the ability to overcome violent behavior before being given anthocyanin nutrition. Based on the results of the t dependent test in the treatment group before and after being given anthocyanins, the p-value was 0.094. It means that there is no effect of anthocyanin nutrition interventions on the patient's ability to cope with violent behavior.

Assertive supportive therapy and nutrition are a combination of supportive therapy, assertive exercise, and followed by the provision of nutrients containing anthocyanins. The process of assertive supportive therapy in this study uses modeling elements from Bandura's social learning theory and the principles of establishing a therapeutic relationship between nurse and patient. In a social learning system, new behavior patterns can be obtained through direct experience or from observing the behavior of others. Bandura believes that individuals learn not only through experience but also through observation, namely by observing the behavior of others who are used as models.[5] Through modeling, the model will increase patient confidence, which in turn, the patient will adopt and imitate the model's behavior. Furthermore, according to social learning theory, an imperfect form of learning that is rooted in direct experience is highly regulated by the consequences of reward and punishment for each given action[5]. As an open system that interacts with the environment, where interactions between individuals are expected to be able to change perceptions and produce positive meanings to generate positive actions as well.[5]

In this study, members of the assertive supportive group therapy consisted of 2-3 patients, to provide more opportunities for each patient to express their experiences from the causes of anger to violent behavior and how to overcome them. Assertive supportive group therapy is carried out using modeling from Bandura's social learning theory. Researchers and nurses play the model at RSJ. Group members/patients who have been able to re-express what the researcher exemplified correctly can become a model for other patients. When the statement of group members is considered correct by the researcher, positive reinforcement will be given; this reinforcement will convince other members/patients to imitate this behavior. Assertive supportive group therapy was carried out for [4] sessions (sessions 1 -4), according to the results of Khamida's research (2013).[15] Activities at each session were modified by researchers based on actions to overcome violent behavior, according to Townsend (2017) [2] and Bandura[5] social learning model and stages and therapeutic communication techniques. [3] Activity session one includes two activities. The first model performs activities to build a trusting relationship with all members / patients and helps express the feelings of each group member. The second model (RSJ researcher and nurse) performed a role play to recognize signs of violent behavior, and asked each member to present signs and symptoms of violent behavior experienced. Activity session 2 includes two activities. The first model (researcher/nurse) discusses the usual violent behavior of group

members/patients, by encouraging each member/patient to express this. The second model (researcher/nurse) discusses the consequences of violent behavior commonly used by patients, by allowing each member/patient to express this. Activities of session 3 include; (1) the model demonstrates how to deal with violent and assertive behavior in dealing with stressors, (2) asks each patient to re-demonstrate how to deal with violent and assertive behavior in dealing with stressors, (3) gives positive reinforcement to patients who can demonstrate it correctly. The session 4 model activity evaluates the behavior adopted by the patient and invites the patient together with the group (as another model) to provide mutual support in assertive behavior so that patients can improve their ability to cope with violent behavior. In each session, the researcher applies the principles and techniques of therapeutic communication. These techniques include listening, empathizing, using language that is easy to understand, maintaining eye contact, and providing feedback on each patient's response. The stages of the nurse-client relationship starting from the introduction phase to termination.

Modeling was carried out by demonstration by the researcher and role-playing by the researcher and RSJ nurse. The results showed that patients with Schizophrenia who experienced violent behavior were able to improve their ability to cope with violent behavior. The therapeutic communication used can establish a trusting relationship between the nurse and the patient so that the patient is more open in expressing what he feels and thinks.

According to Bandura's social learning theory, by looking at the model, the patient will increase confidence to behave like a model, then the patient will adopt and imitate the model's behavior.[5] Patients also play the model as an environment for other patients in the group.[5] The process of assertive supportive group therapy can build supportive relationships between group members, thus facilitating each member to increase their knowledge and skills in overcoming violent behavior.

Providing rewards in the form of positive reinforcement for correct patient behavior is an important key in building new patterns of behavior. [5] Assertive behavior helps individuals feel better by encouraging them to defend their human rights to develop satisfying interpersonal relationships.[3] It can be achieved through honesty, openness, conformity, respect for one's rights, and the rights of others. Individuals develop various assertive response patterns through modeling and providing positive and negative reinforcement. [3]

After the assertive supportive group therapeutic intervention, the treatment group was given anthocyanin nutrition in the form of a black glutinous rice snackbar. The results showed that the provision of anthocyanin nutrition in the form of a black sticky rice snackbar could increase the average value of the ability to overcome violent behavior even though it is not significant.

As has been explained that black glutinous rice contains flavonoid and anthocyanin compounds that have phytoestrogen activity.[8] Phytoestrogens are non-steroidal compounds that have the same structure as natural estrogens. The OH group that is owned is the main structure for the emergence of the estrogenic effect, which has an estrogen-like effect so that it can bind to estrogen receptors, which can activate several areas in the brain. [8] The estrogen hormone, which has the same structure as flavonoids and anthocyanins in black sticky rice, has a direct impact on serotonin, meaning that estrogen can trigger direct secretion serotonin.[6] Serotonin acts as a major inhibitor of violent behavior[3]. Serotonin triggers a person to relax.

The ovaries and adrenal glands secrete the hormone estrogen, and the female reproductive glands secrete more. In men, estrogen is also produced, but the levels are less.[7] In this study, anthocyanin nutrition was given to 18 subjects, consisting of 8 male and ten female patients within 20 days. So for further research, giving anthocyanin nutrition to Schizophrenia patients with violent behavior can be tried for a longer time and of the same gender.

CONCLUSION

1. There is an effect of assertive supportive group therapy on the ability of Schizophrenia patients to cope with violent behavior at RSJ West Java Province.
2. There is no effect of anthocyanin nutrition on the ability of Schizophrenia patients to cope with violent behavior in RSJ West Java Province.

RECOMMENDATION

Supportive assertive therapy is performed in small groups (2-3 patients), to obtain more effective results. In contrast, anthocyanin nutrition should be given to patients of the same sex and tried for a longer time.

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