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SELF-MANAGEMENT FOR SHAPING SLEEP BEHAVIOR AT NIGHT IN SCHIZOPHRENIA PATIENTS

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CASE REPORT **OPEN ACCESS**

ABSTRACT

Background: Sleep disturbances in schizophrenia can be caused by abnormalities of the biological clock which are shown to be imbalanced in the sleep-wake cycle. In this case report, we report one of the patients with schizophrenia which already been hospitalized often.
Objective: The purpose of this intervention is to improve the subject's adaptive behavior in the form of sleeping at night in a schizophrenia patient.
Methods: This paper is a case report, which is already given applied therapy in self-management for shaping his sleep behavior at night which hopefully can help a patient with his problems. Assessments were carried out on the subject in the form of observation, interviews, giving Graphic tests, TAT, and WAIS. The results of the assessment stated that the subject could not manage his sleep schedule which interfered with his daily activities. The intervention given is using a behavioral approach with self-management methods which are arranged in 7 therapy sessions.
Results: The patient can fulfill the target to be able to fall asleep well, this condition positively reduces his symptoms and agitative condition due to sleep problems.
Conclusion: Self-management for shaping sleep behavior which combines psychodynamics and form of habitual condition from the patient can help to reduce their complaints and fulfill the target of remission.

Keywords: self-management, sleep, behavior, schizophrenia.

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INTRODUCTION

Schizophrenia is a disorder characterized by positive symptoms in the form of hallucinations and delusions, and negative symptoms in the form of speech blunted emotions, or inability to care for themselves.[1] Once the active symptoms have subsided, sequelae are still experienced by the individual who is characterized by mild forms of maintaining hallucinations and delusions - for example, reference ideas or magical thoughts - or having perceptual experiences, such as sensing the presence of a supernatural person; their speech may be generally intelligible but vague.[2] In addition to drug therapy, non-medical efforts are needed in the treatment of schizophrenic patients. Increasing physical activity in schizophrenic patients to prevent and manage problems that have an impact on physical health is very necessary.[3] One of the problems that often occur in schizophrenia is erratic sleep hours, difficulty initiating sleep, and difficulty in maintaining sleep. Sleep disturbances in schizophrenia can be caused by abnormalities of the biological clock which are shown to be imbalanced in the sleep-wake cycle. Disruption of the biological clock, difficulty initiating sleep, and difficulty in maintaining sleep in schizophrenic patients may be partly related to hyperactivity due to dopaminergic and dysfunctional systems in the brain. Sleep disturbances in schizophrenia can be caused by abnormalities of the biological clock which are shown to be imbalanced in the sleep-wake cycle. Disruption of the biological clock, difficulty initiating sleep, and difficulty in maintaining sleep in schizophrenic patients may be partly related to hyperactivity due to dopaminergic and dysfunctional systems in the brain. Sleep disturbances in schizophrenia can be caused by abnormalities of the biological clock which are shown to be imbalanced in the sleep-wake cycle. Disruption of the biological clock, difficulty initiating sleep, and difficulty in maintaining sleep in schizophrenic patients may be partly related to hyperactivity due to dopaminergic and dysfunctional systems in the brain.[4].

This is as experienced by the subject in this case. A subject is a 40-year-old man who has had schizophrenia since 2007 and has been hospitalized 4 times. In September 2016 the subject

was hospitalized due to complaints of not sleeping for 4 days, speaking disorganized, throwing a tantrum, riding a motorcycle recklessly, assuming a lizard is a dragon, and wanting to kill his wife because he felt his wife was having an affair. Since 2007, Subject often brings up other episodes when he is sleep deprived and not busy. The subject's lack of sleep causes other problems for the subject, he is often angry and talks disorganized, even giving rise to strange behavior. Sleep problems in a person can affect cognitive function for the worse. Lack of sleep often makes a person act based on subjective thinking alone rather than objective thinking.[5] In addition, lack of sleep also has an impact on emotional management in a person, disruption of REM sleep can interfere with adaptive emotional responses, if this is disturbed it can trigger individuals to provide emotional responses with less adaptive.[6]

The subject's sleep schedule was disturbed because after coming home from work in the afternoon he immediately fell asleep until the evening, after which the subject could not fall asleep until the next day. In his theory, Skinner emphasized that a person's behavior is formed based on preconceived consequences.[7] In this case, the subject started his bedtime because he was sleepy and had no after-work activities which resulted in the subject waking up when other people were asleep and getting reinforced and repeated so that it interfered with the subject's daily activities.

A person's behavior can be maintained due to several factors, including operant behavior, contingency reinforcement, positive or negative reinforcement, maintenance or removal, generalization of stimuli, and self-management.[7] The subject's sleep behavior that is not on schedule is maintained and strengthened because there is no urge that requires him to fall asleep at night, the subject's activities at night are bathing, eating, watching TV, and daydreaming. In addition, there is a wrong self-management on the subject that when he sleeps in the afternoon, his tiredness after work will disappear.

Self-control to fall asleep on schedule for health is felt to be lacking in the subject. Lorig and Holman (2003) explain that if individuals are not involved in implementing healthy behaviors for themselves or do not play an active role in managing their disease, these decisions reflect poor self-management so self-management interventions are needed for them.[8] In handling individuals who have problems with their sleep, self-control plays an important role in improving sleep behavior in a disciplined manner.[9] Nauts & Kroese (2016) state that self-control and sleep behavior affect each other, this means that lack of sleep can trigger a person to have poor self-control in their activities; and vice versa that sufficient self-control can make a person behave optimally to get a good night's sleep.[9] Based on the description above, it is felt that there is a need for behavior modification to reduce the subject's maladaptive behavior in the form of sleeping in the afternoon to improve the subject's sleep behavior according to the schedule.

One method of behavior modification that can control behavior, is self-management (self-management) people manipulate events in the environment to control their behavior.[7] Self-management is a strategy that can be used to improve mental health for individuals with mild problems or individuals with chronic diseases such as Schizophrenia.

Self-management was deemed suitable for modifying the subject's sleep behavior because the subject had previously done this, although in the wrong way and with the wrong consequences.[8] Skinner stated that self-management is accompanied by controlling behavior and controlled behavior.[9] In addition, self-management is considered an appropriate method of behavior modification in cases that contrast with the target behavior. In the case of the subject, namely holding back from sleeping in the afternoon (controlling behavior) to be able to fall asleep at night (controlled behavior).

The purpose of this therapy is to determine the effectiveness of behavioral therapy to improve sleep behavior according to a schedule in schizophrenia by using behavior modification in the form of self-management.

METHOD

Assessment Method

The assessment methods used are interviews, observations, and psychological tests (WAIS, TAT, and Graphics). The assessment method used can be described in table 1.

Assessment Results

SB (subject) is a 40-year-old male father of a 10-year-old daughter. Subjects weigh about ±65 kg, height ± 170 cm, short black hair. During the observation process, the subject showed a fairly good ability to communicate with others. This can be seen from the subject's ability to answer every question well when asked by the therapist, doctor, or people in their environment. When the subject first enters the inpatient room, the subject often invites other patients to get acquainted and talk first.

Based on the assessment obtained, the subject has experienced trauma in the past in the form of neglect and abandonment by loved ones. The subject's father and mother divorced when he was 2 months old. After the divorce of his parents, the subject never again met his biological mother. The subject's older sister was raised by her biological mother, while the subject was raised by her father. Several months later, the subject had a stepmother. Since there was a new sibling, the subject felt neglected by his family. The attention of the father and stepmother was only focused on his new siblings. The father figure is considered good by the subject because it can raise him to this day, although sometimes decision-making is often based on his father's thinking. Thus, it can be said that there is poor parenting on the subject. His family environment ignores the subject, the subject does not get attention from his biological mother, stepmother, or older sister since childhood. The dominant father's attitude often makes the subject unable to make his own decisions, and even causes the subject to feel inferior in his family. This is in accordance with Carl Gustav Jung's psychodynamic theory, which says that the origin of neurosis in childhood is primarily derived from the symptoms or mental conditions of the parents.[7]

This is supported by the results of the subject's HTP test which describes a small and damaged house stating that the subject gives an unfavorable assessment of the mother figure. The subject feels that the mother figure is very lacking. Based on another point of view on HTP, the subject is indicated to have less role in the family and feels less trusted. In addition, the subject is also a child who is denied its existence in a social environment.

The subject stated that when he was in elementary school he felt insecure because his mother had never escorted him. The subject has also been ridiculed by his friends for not having a mother. the subject considers that his biological mother is not a good example of a mother because she has left him. When the subject was in junior high and high school, the subject did

Table 1. Case Assessment Method

Assessment Method	Target	Destination
Interview	Subject	To reveal problems from the subject's point of view, demands in the social environment, as well as revealing the feelings, thoughts, and behavior of the subject in dealing with problems, the potential of the subject; as well as some psychological functions of the subject.
	Subject's Wife	To reveal the wife's view related to the subject's case, as well as the subject's activities in her social environment, the behavior that the subject raises.
	Mother-in-law subject	To reveal the mother-in-law's views regarding the subject; the subject's activities at home; mother-in-law's reaction to the subject's case;
Observation	Subject	To uncover what happened to the subject; the symptoms that appear; and the subject's interaction with the surrounding environment.
	Hospital environment	To find out the subject's environment while undergoing the treatment process at the hospital, as well as the adjustment of the subject to that environment.
	Subject's neighborhood	To find out the environment where the subject lives, as well as the adjustment of the subject to that environment.
WAIS	Subject	To reveal the potential intelligence of the subject.
TAT	Subject	To uncover the basic structure and dynamics of the personality of the subject; subject relationship; knowing the subject's internal and external motivation, as well as pressure from the external environment that affects the subject's motivation.
Graphics (DAP, BAUM, HTP)	Subject	To determine personality traits, barriers, emotional functioning, social relationships, and family relationships of the subject.

not want to meet his mother because he was annoyed with his mother. Jung's theory says that young people often experience various psychic difficulties, related to sexual instincts and low self-esteem, besides that the most essential thing during youth is to stick to events that occurred during childhood.[7] Subjects often imagine having a mother who can understand and love them. In addition, the subject imagines something to avoid the tension that arises in his environment.

The past of such a subject encourages the subject to form a compensation in the form of wanting a happy family concept and wanting to be a great person. This is in accordance with the psychoanalytic theory which says that the function of compensation is to balance or adjust the energies that are impartial and arise from one's unconscious.

In 2002 the subject married. After marriage, what has been the subject's imagination so far is not in accordance with the existing reality, the subject still lives with his wife's family, and the wife who is the first woman whom he considers to give affection is not in line with his expectations which often gives pressure related to the economy. The obscurity of the subject's role as a husband often results in him seeking attention in front of his wife but his wife rejects it. The subject admitted that he really loved his wife and really wanted to make her happy. The subject does not want to see his wife and child sad. However, the subject's communication with the wife did not go well, and it was very rare to have a conversation about something. The dialogue between the subject and the wife is often when the subject will just eat and have sex. When there is a fight, the subject is often silent when his wife is angry. The subject's wife is often angry that most of the subject's salary is spent on her hobby. Based on this, the subject's wife is the first female figure who can love the subject. Because he lives at his father-in-law's house, always gives in, and is silent when his wife scolds him, the subject feels he has lost power in front of his wife. In addition, the figure of a woman full of affection that he had wanted was not found in his wife. the subject's wife is the first female figure who can love the subject. Because he lives at his father-in-law's house, always gives in, and is silent when his wife scolds him, the subject feels he has lost power in front of his wife. In addition, the figure of a woman full of affection that he had wanted was not found in his wife. the subject's wife is the first female figure who can love the subject. Because he lives at his father-in-law's house, always gives in, and is silent when his wife scolds him, the subject feels he has lost power in front of his wife. In addition, the figure of a woman full of affection that he had wanted was not found in his wife.

The dynamics of the subject's personality are reflected in the results of the Graphic Test and TAT. The subject is an introvert, which is closed and likes to hide his problems. Subjects tend to avoid social contact and focus on themselves. Subjects have difficulty adjusting to their environment which causes lability in the subject. the subject has a tendency to regress in dealing with his problems, the subject often relates his problems to the past and can only be solved by his own feelings. So the subject often creates opposite feelings and thoughts (compensation) to overcome his anxiety. In this case, the subject often fantasizes and tends to be irrational to appear powerful, and strong, and play a role in their environment. On the other hand, the subject has a need for affection or affection from a female figure. Subjects want reciprocal strong feelings from the mother figure. some of the desires and needs of the subject cannot be realized in an action, but only divert by silence, imagining, and daydreaming to avoid reality or conflict.

Based on the past, personality type, as well as the subject's adaptation process, he gives rise to a completely different picture from his real self. The subject creates a "self" as a strong, independent, loved figure, and has a happy family concept that he wants to manifest in reality. This is called the individuation process in Jung's theory of psychodynamics. The function of individuation is to harmonize a person's consciousness and unconsciousness.[7]

In 2007, the subject was arrested by the police for a case of buying and selling illegal cigarettes. Selling cigarettes among friends according to the subject is a common thing. However,

the subject's friend resells the cigarettes he bought from the subject to a trader in a shopping center. This trade was considered illegal and resulted in the subject being imprisoned for 5 days. While imprisoned, the subject saw his wife and child weeping, which made the subject very sad. From then on, the subject hated his co-worker who had thrown him in prison. Every time he saw his co-worker, the subject remembered the faces of his wife and children crying in prison. After being released from prison, the subject began to often be alone and behaved strangely.

Based on medical record data from the hospital, from 2007 to 2016, the subject had been admitted to the hospital 4 times. Subjects were hospitalized when the subject began to get angry hysterically and experienced strong hallucinations and delusions. Based on interviews with the subject and the subject's wife, several events occurred before the subject was admitted to the hospital (table 2).

Table 2. Hospital Admission History Case Subject

Year	Hospitalization	Events Before Hospitalization	Symptoms That Appear
2007	Hospital A	○ Imprisoned for 5 days because of his friend ○ Seeing his wife and children cry while he was imprisoned	Disturbed sleep, sitting in a corner, talking disorganized, admitting to being hard-headed, and the boss at the company, angry with shouting
2009	Hospital A	○ Being teased by coworkers ○ Meeting people he hates every day ○ There is someone else's attempt to separate the subject from the wife ○ Arguing with wife over economic problems	when there is no work & lack of sleep always rages in front of his wife; claiming to be a character every time he talks with other people about that character, telling his wife to call him Superman or another character, getting angry, and throwing a tantrum if his wishes are not fulfilled;
2011	Hospital B	○ Meeting people he hates every day ○ Trying to survive in stressful situations ○ Arguing with wife over economic problems ○	Talking rambling, throwing a tantrum, riding a motorbike recklessly, talking to himself, crying
2016	Hospital B	○ Arguing with wife over economic problems ○ Being cheated by women on social media ○ Wife threatened that she would leave the subject if she didn't take the medicine ○ Child is sick for 4 days.	Didn't sleep for 4 days, talked gibberish, went on a rampage, rode a motorbike recklessly, thought the lizard was a dragon and wanted to kill his wife because he felt his wife was having an affair

Based on the assessment carried out, it can be analyzed that the incident where the subject went to prison and saw his wife and children crying while he was in prison was an event that triggered the emergence of conflicts that had been in his subconscious mind. Conflicts activate other compensatory content, which can have a compulsive influence on the conscious mind until eventually the conscious mind malfunctions when a person does not find another way out.[7] This also happens to the subject. In addition to the malfunctioning of the conscious mind, this also affects the thinking functions of other subjects.

Based on the results of the WAIS test that has been carried out, the subject's DM score is 14% which indicates that there are signs of the subject experiencing a decline in ability due to organic factors or age, in this case, influenced by chronic schizophrenia of the subject. The subject has an IQ of 68 which is classified in the borderline category, where the subject's intelligence is at the threshold which shows his very limited ability to study abstract and theoretical matters, as well as concrete and practical matters. Subjects use the ability of Verbal and Performance are less balanced. This indicates that the subject is better able to understand theoretical matters, and lacks the ability to organize their perceptions. Thus, the subject tends to be easily anxious about something.

The subject's mind which tends to focus on his own perception further aggravates the subject's condition until the subject's conscious and unconscious mind mix. This results in carelessness, neglect of tasks, no longer finding a conscious way out, and continuing to enter the unconscious. The dynamics of the formation of problems based on psychoanalytic theory are as Figure 1.

Currently, the subject has been declared to be improving by the mental hospital, but it is still very necessary to monitor his condition because he often experiences relapses. One of the subject's symptoms that often exacerbates other symptoms is irregular sleep behavior. When he came home from work in the afternoon, the subject often went straight to sleep until the evening and did not fall back asleep until the morning. The next day, the subject did the same thing so that the next day the subject could not even sleep. The subject's activities when not sleeping at night are watching tv, daydreaming, eating, or bathing. On the next day, the subject showed strange behavior in the form of playing the role of a character on the TV show he was watching, claiming to be a great person.

Skinner emphasized that behavior operates in the environment to produce various consequences and is controlled or contingent on the consequences produced by the environment.[7] Opportunity describes an environmental condition that directs the subject to wake up at night while others are asleep which raises the subject's behavior in the form of initiating bedtime,

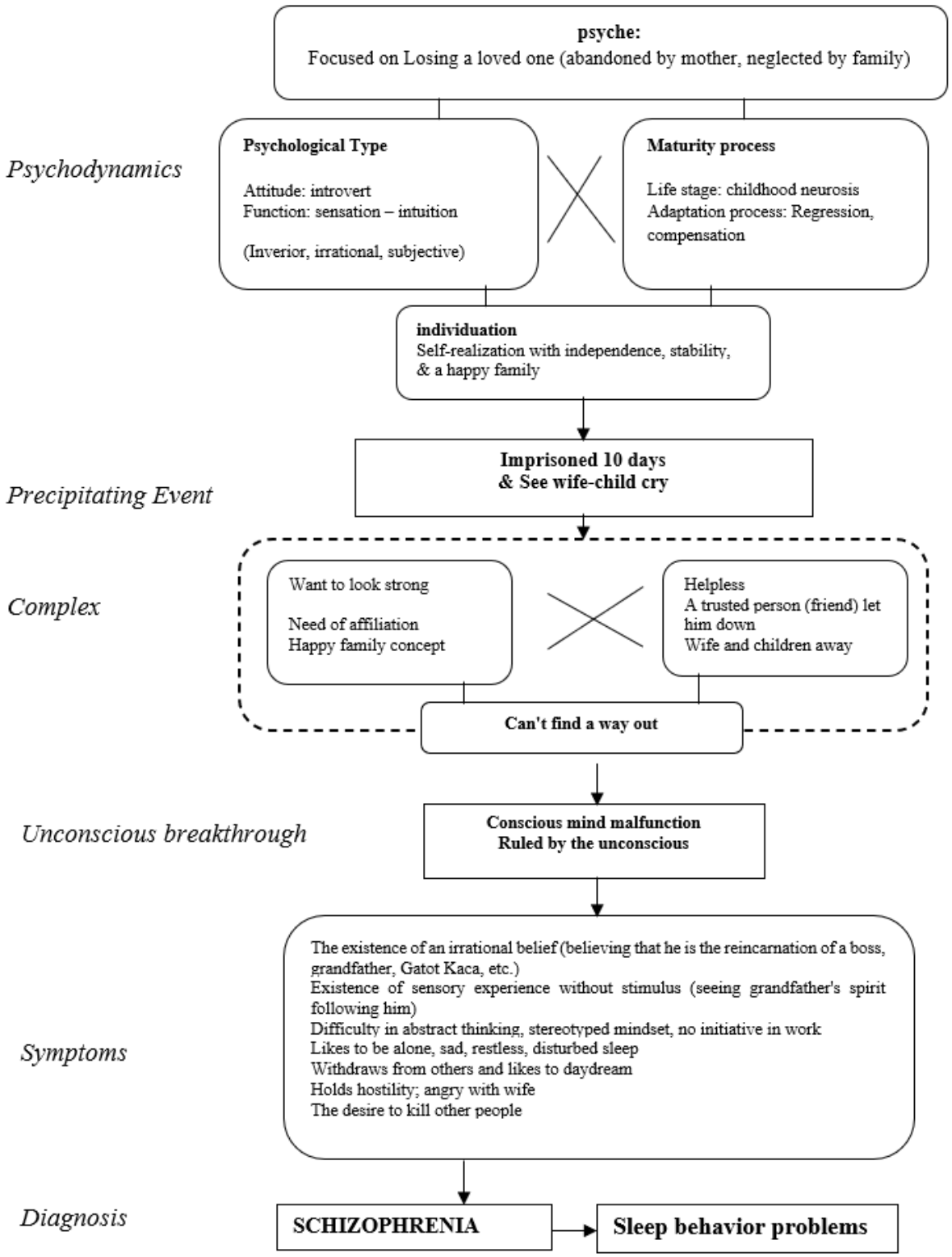

Figure 1. Dynamics of Case.

which has an impact on the behavior of the subject who wakes up at night and if left unchecked the consequences (Consequence) can interfere with the subject's daily activities. When the subject does not sleep at night, the subject cannot interact with anyone, thereby increasing the subject's opportunity to think about negative things. When these negative thoughts are continuously reinforced, the subject will realize these thoughts into real behavior. This is supported by the results of the TAT test and subject graphics which show

the subject's high level of fantasy, which makes it easier for him to think that is not real, and also remembers the WAIS results of subjects who lack the ability to organize their perceptions. Irregular sleep behavior can be a sign that the disorder will relapse due to improper handling, or be a trigger for the emergence of other relapse symptoms. The following are the dynamics of the formation of sleep problems in subjects based on Skinner's concept in Figure 2. Irregular sleep behavior can be a sign that the disorder will relapse due to improper handling, or be a trigger for the emergence of other relapse symptoms.

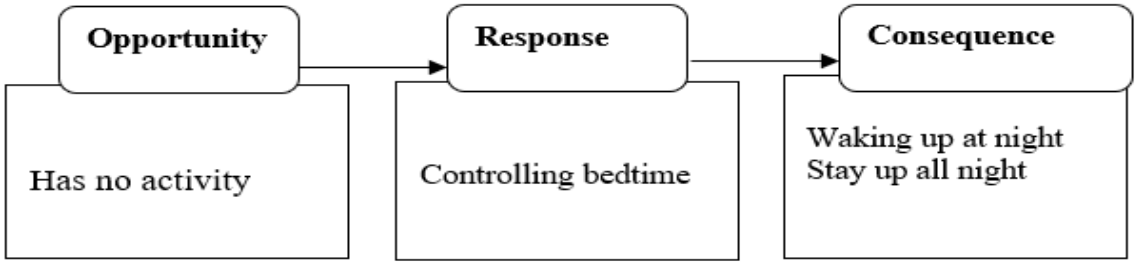

Figure 2. Schematic of Sleep Behavior Based on Case.

RESULT

Intervention

The intervention that was carried out to deal with the problem of setting the subject's sleep schedule was self-management which aims to improve sleep behavior according to the subject's schedule. Self-management can be applied to increase deficit behavior, or reduce excess behavior. Skinner stated that self-management is accompanied by controlling behavior and controlled behavior.[10] In this case, the subject controls his behavior to delay sleep in the afternoon so that he can fall asleep at night.

In self-management, a person identifies and sets behavioral targets and sets them for one or more behavior modification procedures to influence an event in behavior. The following are some of the types of procedures commonly used in self-management, including setting goals & monitoring behavior; manipulating antecedents; behavior contracts; setting reinforcers and punishers; social support; and self-instruction and self-esteem.[7,10]

A self-management plan should include the following nine basic steps:[10,11]

1. Subjects make a decision to engage in self-management.
2. Determine target behavior and competitive behavior. The goal of a self-management program is to increase or decrease the level of a target behavior.
3. Set more specific goals.
4. Develop and implement a self-monitoring plan.
5. Carry out functional assessments related to self-monitoring that has been carried out.
6. Choose the right self-management strategy. At this stage, the subject must choose a self-management strategy to modify the subject's behavioral goals.
7. Evaluate changes. After the subject has implemented a self-management strategy, continue to collect data through self-monitoring and evaluate whether the subject's target behavior is changing in the desired direction.
8. Re-evaluate self-management strategies.
9. Implement a maintenance strategy. Once the goals are achieved in the self-management program, it is necessary to implement strategies to maintain the behavioral goals at the desired level.

Due to the therapist's limited time to provide intervention, the nine stages of self-management were carried out in 7 sessions. Prior to the implementation of self-management, the family was given psychoeducation to increase awareness of the subject and committed to providing support in terms of post-hospital care. This early psychoeducation is needed to support the results of the intervention considering that self-management in schizophrenia patients requires supervision and direction from the closest person who cares for them (caregiver). The intervention was carried out at the hospital and at the subject's home, which lasted 60 minutes in each session (table 3).

In session 1, subjects were directed to write down their disruptive or less adaptive behavior in the form of not sleeping at night until the morning, eating at night, and bathing at night. Furthermore, the subject is directed to make a decision to be involved in a self-management program by determining the reasons for the occurrence of maladaptive behavior, making a list of the disadvantages of the behavior, and writing down the goals for the change. This is done to motivate the subject to take some action to overcome his behavior. The goal of this self-management program is to sleep at night.

In session 2, the subject determined more specific goals in the form of the desired level of target behavior to be achieved in the self-management program. In setting goals, the subject identifies an appropriate level of target behavior that will reflect improvement in some aspect of the subject's life. The subject's goal is not to sleep in the afternoon & sleep above 19.30 WIB. After establishing the target behavior, the subject develops and implements a self-monitoring plan. Subjects were asked to record all their behavior including their sleep schedule for the next week. The self-monitoring used in this intervention is attached.

Session 3 carried out a functional assessment related to self-monitoring & choosing the right self-management strategy. The subject identified the cause of not sleeping at night and identified why subject always wanted to sleep in the afternoon. At this stage, the subject also chooses a self-management strategy to modify the targeted behavior. Subjects always want to sleep in the afternoon because they feel tired and have no other activity besides sleeping. The strategy chosen by the subject is to manipulate the antecedent in the form of carrying out activities that have been done at night to be in the afternoon in the form of eating and bathing, as well as adding new activities in the form of reading automotive books or keeping the laundry with his wife.

Table 3. Program of Case Intervention Activities

Session	Activity	Procedure	Destination
1	a. Setting goals b. Make a commitment to change	The subject wrote down his disturbing behavior Subjects are directed to engage in self-management The subject writes down the target of the change	The subject is aware of the problem The subject is willing to change and engage in self-management
2	a. Setting more specific goals b. Self-monitoring	The subject determines the level of achievement of a more specific behavior Provide understanding on subjects related to self-monitoring	The subject is able to determine the level of the target behavior that is realistic and in accordance with the ability of the subject The subject understands the self-monitoring procedure
3	a. Carry out self-monitoring functional assessment b. Choosing a self-management strategy c. Program implementation	Identifying the cause of difficulty falling asleep at night Designing activities that will be carried out to postpone his sleep time with the agreement of the subject Implementing the program by filling out self-monitoring Asking the closest people to provide supervision and direction to the implementation process	Subject realized understand the variables that contribute to the occurrence of sleep in the afternoon or the absence of sleep behavior at night Programs are structured according to the objectives of the intervention
4-5-6	Evaluating self-management strategies	Discussion and evaluation of program implementation results	Program monitoring and prevent it from happening behavioral decline.
7	a. Implement maintenance strategy b. Termination	Performance feedback and results obtained during self-management Stopping the intervention program Make a behavior contract to continue implementing the program that has been prepared	Subjects have the motivation to continue implementing the self-management program even though it is outside the intervention.
Follow up		Evaluation of changes in problem behavior 2 weeks and 2 months after the intervention	Ensure that the subject has an improvement in his sleep schedule

After the subject has implemented the self-management strategy, the subject and the therapist evaluate whether the subject's target behavior changes in the desired direction or not. In session 4, the subject showed that they had carried out the previously planned strategy. In this session, other self-management strategies were added in the form of self-instruction and self-praise. This is done to strengthen the subject's behavior when faced with vulnerable conditions such as fatigue when coming home from work. The self-instruction that the subject does is to tell himself that "*Okay, I understand my crew is sore, but manganese karo adus iso ngilangno iku, jolali rewangi bojoku take care of londry while chanting*", which means I understand I'm tired, but eat and take a shower can eliminate it, don't forget to help my wife take care of the laundry while relaxing.

In sessions 5 and 6, a re-evaluation of the subject's self-management was carried out during the previous week. in session 6, additional activities are given in the form of reading automotive books related to the subject's interest so that the subject does not get bored with his activities. The book is read when the subject helps his wife to take care of the laundry or during other free time.

In session 7, After the subject has achieved his goal, the subject needs to implement a strategy to maintain the target behavior at the desired level. Subject, therapist, and wife together make a behavior contract to continue implementing the program that has been developed. The behavioral contract includes self-reinforcement and positive reinforcement from the subject's wife. The contents of the contract that have been prepared are; 1) if within 4 days the subject regularly sleeps above 19.30 and wakes up in the morning, the subject may buy a new automotive magazine; 2) if in 4 days the subject regularly sleeps above 19.30 and wakes up in the morning, the wife will cook the subject's favorite food, namely chicken curry; 3) if in 4 days the subject routinely sleeps above 19.30 and wakes up in the morning, the subject may take a walk with his wife and children.

Intervention Results

The initial intervention in the form of psychoeducation for the wife resulted in a commitment to provide support to the husband in the form of treating the wife more gently to the husband, reminding the husband to take medicine twice a day, and inviting the husband to chat. Support from the wife is the

first step to increasing care and support for the subject's recovery after hospitalization.

Furthermore, the results of the intervention on the subject can be seen from the self-monitoring filled in by the subject at the distance between session 3 to session 4; session 4 to session 5; session 5 to session 6; and session 6 to session 7. The aspects observed in the intervention results were the number of afternoon activities carried out, the frequency of sleep at night, and the duration of the subject's sleep. During the intervention process, the subject showed an increase in the frequency of sleep behavior at night and the duration of the subject's sleep. The results of the intervention show that self-management plays a role in improving sleep behavior at night in schizophrenic patients (table 4).

Evening activities carried out by the subject have been adjusted to the ability and interest of the subject, but it is not easy for schizophrenic patients to apply all activities regularly. Therefore, the role of the family to supervise and direct the subject becomes one of the important factors in this program. Families are involved and have an important role in improving program outcomes after being given psychoeducation about the importance of regular drug consumption for patients and family involvement to support patient recovery. This psychoeducation was carried out before the intervention on the subject.

Table 4. Intervention Results for Case

Intervention aspects	Target to be achieved in a week	Pre intervention	Program intervention/implementation				Post intervention
			I	II	III	IV	
Average number of afternoon activities	5	1	2	3	4	5	5
Target achieved in 6 days	6	2	2	5	6	6	6
Sleep duration		2 hours	5.5 hours	6.5 hours	6.5 hours	7.5 hours	7 hours

DISCUSS

The self-management strategy applied by the subject gave positive results to the subject's nightly sleep behavior. One of the self-management strategies in the case of the subject is manipulating the antecedent in the form of sleeping in the afternoon by filling in empty activities in the afternoon so that the subject does not fall asleep. Subjects control their sleep behavior in the afternoon to be able to fall asleep at night. Cause behavior control can be effectively applied to improve adaptive behavior.[11]

Skinner stated that self-management is accompanied by controlling behavior and controlled behavior.[12] In addition, in the self-management applied to the subject, self-instruction and self-praise are also applied to strengthen the subject's behavior. Apart from being a reminder for the subject, self-instruction can also function as a behavioral guide to the subject so that it can go according to what he wants. can build the subject's self-confidence with the experience of success it has so that it can strengthen the targeted behavior to be achieved.

The formation of behavior according to Skinner depends on the consequences that follow the behavior and the individual tends to maintain a behavior if there are pleasant consequences for himself for the behavior.[13] The consequences of pleasant behavior for the subject, in this case, are the subject can feel more refreshed the next day; the wife's behavior becomes softer, and the subject feels great because he has been able to withstand his fatigue in the afternoon.

A study conducted on schizophrenic patients showed that self-management can be a strategy that can reduce the severity of symptoms and prevent complications of the disease. In the case of the subject, with regular sleep, the subject's negative thoughts rarely arise because they rarely daydream and fantasize because self-management helps the subject manage their activities to be more useful.

Psychoeducation to the family is an early intervention that needs to be implemented because the family as the main support system has an important role in carrying out self-management.[14] In the case of the subject, the wife of the subject is very involved in the change of the subject. It was felt that it would be even better if all family members were given psychoeducation at the beginning of the intervention.

On the other hand, there are also weaknesses in the interventions that have been carried out. The behavioral target set with the subject is less specific so it provides an opportunity for the subject to fall asleep late at night. It is hoped that for future interventions, there will be clear behavioral targets for implementing self-management on the subject.

CONCLUSION

Self-management plays a role in helping schizophrenic patients manage their activities in the afternoon so that they can fall asleep at night. The role of the family in providing supervision, direction, and support is important to support the success of the intervention. Through the application of self-management to improve sleep behavior at night, patients are expected to be able to carry out daily activities more productively and reduce susceptibility to relapse without compromising drug consumption and regular medical examinations.

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