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Providing tokens as incentives promotes positive behaviors related to oral hygiene and self-care in individuals with mental illness

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Abstract

Background: Mental disorders, particularly schizophrenia, cause a decline in mental function, impacting individuals' inability to perform self-care activities independently, including dental and oral hygiene. This self-care deficit is caused by cognitive impairment, lack of motivation, and the inability to organize and carry out daily activities. Appropriate interventions are essential to support the restoration of independence and improve patients' quality of life.

Purpose: To determine the effectiveness of implementing the token economy method in improving oral hygiene in patients with self-care deficits due to mental disorders.

Method: An in-depth case study was conducted on one patient diagnosed with self-care deficit using the token economy method as an intervention. Data were collected through observations, a token economy checklist, and self-care (oral hygiene) activity observation sheets for two weeks, from October 20 to November 1, 2025. Analysis focused on improving the patient's oral hygiene score.

Results: After two weeks of the token economy intervention, there was a significant improvement in patients' toothbrushing activity, as measured by token scores. Oral hygiene scores improved from poor (10) to fair (30), with patients showing consistent progress in performing self-care independently.

Conclusion: This intervention successfully motivated patients to maintain regular and independent oral hygiene.

Keywords: Oral Hygiene; Schizophrenia; Self-Care Deficit.

INTRODUCTION

Mental disorders are a crucial part of mental health that significantly impact the quality of life of individuals and society (Pertiwi, Setiaji, Rahayu, Adyas, Noviansyah, & Pratiwi, 2024). According to the World Health Organization (WHO) in the 11th edition of the International Classification of Diseases (ICD-11), mental disorders are syndromes characterized by significant disturbances in psychological, biological, cognitive, emotional regulation, or behavioral functioning (Suri & Rony, 2025). These disorders reflect dysfunction in the mental,

biological, or developmental processes underlying a person's behavior. As a result, individuals experience suffering and decreased abilities in personal, social, educational, occupational, and other important areas of life (Mawarpury, Maulana, Khairani, & Fourianalistyawati, 2022). According to the WHO (2019), globally, 264 million people suffer from depression, 45 million from bipolar disorder, 50 million from dementia, and 20 million from schizophrenia. Schizophrenia is among the top 15 leading causes of disability worldwide and increases the risk of suicide. In Indonesia, the prevalence of schizophrenia in

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people aged 15 years and over is 1.8 per 1.000 (approximately 1–2 people per 1.000). The province with the highest prevalence is Bali (11.1%), followed by Yogyakarta (10.4%), and West Nusa Tenggara (9.6%). In East Java, the number of people with mental disorders (ODGJ) increased from 75,427 (2019) to 75,998 (2020). Based on data from Menur Mental Hospital (2021), cases of undifferentiated schizophrenia (F20.3) reached 38% in September, decreased to 28% in October, and then rose again to 34% in November. During August 2021–January 2022, accompanying nursing problems included: violent behavior (51%), hallucinations (29%), self-care deficit (15%), social isolation (3%), and low self-esteem (2%).

This self-care deficit generally occurs due to impaired cognitive function experienced by people with schizophrenia, which causes difficulty in organizing, initiating, and completing self-care activities. Furthermore, negative symptoms such as apathy, lack of motivation, and indifference to personal hygiene exacerbate this condition (Lasanudin, Ilham, & Sabali, 2023). As a result, individuals with schizophrenia experience high dependence on others and require intensive assistance from medical personnel and family members to carry out daily activities. Therefore, appropriate interventions are essential to support the restoration of independence and improve the patient's quality of life. In providing psychiatric nursing care, nurses require standardized work procedures such as Implementation Strategies (SP) implemented in stages: SP 1 training personal hygiene, SP 2 appearance, SP 3 independent eating and drinking, and SP 4 elimination activities (Brooks, Irmansyah, Susanti, Utomo, Prawira, Iskandar, & Lovell, 2019). Nurses act as educators, counselors, and leaders in its implementation (Syukur, Sudirman, & Harun, 2023). This intervention has several weaknesses, such as a lack of individualization, limited time, resources, and nurse competency, and unsystematic evaluation (Mintarsih, 2021). Furthermore, client resistance and dependence on healthcare workers often hinder the recovery process. Alternatively, token economy interventions can be implemented to improve self-care behaviors, particularly oral hygiene. This method provides positive reinforcement in the form of tokens or small rewards each time a patient

successfully brushes their teeth independently, which can increase motivation in patients with impaired perception and lack of initiative (Syafiin, 2023). Consistent reinforcement helps patients improve personal hygiene behaviors, prevent infections, increase self-confidence, and support overall health (Boersma, van Enthoven, Smid, Nordkamp, Huisman, & Lancel, 2025).

A study evaluated the effectiveness and feasibility of a token economy program in improving the daily functioning of schizophrenia patients in the "Plecht" unit of the GGZ Drenthe Forensic Psychiatric Hospital, the Netherlands, involving 13 male patients, 10 of whom were quantitative respondents. The results showed a significant increase in target behaviors during the program, although the effect declined after the cessation of token distribution. Research in the Abimanyu Ward of the Dr. Arif Zainudin Regional Mental Hospital in Surakarta showed that the token economy method was effective in improving self-care activities in schizophrenia patients with self-care deficits, as evidenced by an increase in personal hygiene scores from 18 (poor category) to 30 (good category) (Mohamed Zaki, Rabea Mohamed, & Nagy Kotb, 2024). Both studies concluded that token economy is an effective method in improving daily functioning and self-care in schizophrenia patients, especially during the intervention period, and supports overall health improvement (Kuo, Yeh, Chang, & Teng, 2020). Based on this background, it can be concluded that the token economy method has proven effective in improving self-care activities in patients with mental disorders. However, research specifically discussing the application of token economy interventions focused on aspects of personal hygiene, particularly oral hygiene, is still limited. The focus on oral hygiene was chosen because this aspect is an important part of self-care that is often neglected, especially in patients with mental disorders who experience decreased motivation and impaired perception. Through the token economy approach, it is hoped that external incentives will be created that can increase patients' awareness and consistency in maintaining oral hygiene independently, thus positively impacting quality of life and overall health.

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RESEARCH METHOD

This study employed a case study design conducted in depth on a single patient with the nursing problem of self-care deficit, specifically related to oral hygiene. The case study was carried out systematically through stages that included observation, data collection, information analysis, and reporting of results. The independent variable in this study was the Token Economy method, while the dependent variable was the improvement of the patient's self-care ability in maintaining oral hygiene. The focus of the study included the nursing process consisting of assessment, nursing diagnosis, planning, intervention, implementation, and evaluation. Operational definitions were established using a Token Economy checklist, in which the patient received a token in the form of a star for each successful target behavior performed, which could later be exchanged for a reward in the form of a cake, as well as an oral hygiene self-care observation sheet. Oral hygiene performance was assessed using a 1–4 scoring scale: a score of 1 was given if the patient did not perform the behavior at all, a score of 2 if the behavior was performed with full assistance, a score of 3 if performed with partial

assistance, and a score of 4 if performed independently and correctly.

The target behaviors assessed included brushing teeth in the morning, brushing teeth at night, using toothpaste, rinsing the mouth, and storing the toothbrush properly. The study was conducted over two weeks, from October 20 to November 1, 2025, with daily monitoring of the patient's abilities and token allocation based on target behaviors to evaluate the effectiveness of the Token Economy method. Data analysis was performed descriptively by comparing oral hygiene behavior scores before and after the Token Economy intervention based on the observation sheet and the number of tokens obtained daily. The daily behavior scores were compiled into a development table to observe trends in the patient's increasing independence. Further interpretation was carried out to analyze changes in behavior scores and the number of tokens collected to determine the effectiveness of the Token Economy method in improving the patient's self-care ability. The results of this analysis served as the basis for drawing conclusions regarding the success of the intervention and the evaluation of the nursing care provided.

RESEARCH RESULTS

Table. Economic Token Score Assessment of Tooth Brushing Activity

First week							
Target Behavior	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Brushing teeth in the morning	2	2	3	3	3	2	4
Brushing teeth in the evening	1	2	2	3	2	1	2
Using toothpaste	1	2	3	3	3	3	2
Rinsing mouth	3	3	3	3	3	4	4
Storing toothbrush	1	2	2	3	2	2	2
Total	8	11	13	15	14	12	14
Second Week							
Target Behavior	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
Brushing teeth in the morning	3	3	4	4	4	4	4
Brushing teeth in the evening	3	3	3	2	3	4	4
Using toothpaste	4	4	4	4	4	4	4
Rinsing mouth	3	4	4	4	4	4	4
Storing toothbrush	3	3	3	4	4	4	4
Total	17	17	18	18	19	20	20

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After two weeks of implementing behavioral therapy with a token economy system for toothbrushing, positive and gradual behavioral changes were observed. In the first week, the patient showed a gradual improvement in ability, although there was a decline on the sixth day. However, by the end of the week, motivation and response to reinforcement began to improve. In the second week, the patient showed significant and consistent progress, being able to perform all stages of toothbrushing independently, achieving a score of 20 stars at the end of the week. Overall, the implementation of the token economy system successfully increased the patient's motivation, consistency, and independence in performing self-care activities.

DISCUSSION

Mental disorders are disturbances in mental function, including emotions, thoughts, behavior, motivation, self-awareness, and perception, which cause a decline in all mental functions, especially interest and motivation, thus disrupting a person's social life (Eni, 2023). Self-care deficit is a condition in which a person experiences an impairment in the ability to perform or complete daily life activities independently. These include a lack of desire to bathe regularly, inability to comb hair, dirty clothes, body odor, bad breath, and an untidy appearance (Nasution, Daulay, & Wahyuni, 2021). The patient appeared thin and unassuming, with dirty, foul-smelling clothes and yellow, foul-smelling teeth. He was a homeless person who was sent to the Bina Laras Social Rehabilitation Center by the village community. During the assessment, he tended to stay in his room and was reluctant to interact with others. In addition to these symptoms of social isolation, the patient also showed a decrease in activity, feeling lazy to do anything, leading to never getting his work done. He also appeared uncooperative when reminded to practice personal hygiene, including brushing his teeth properly (Baskara, Darsana, & Indrayani, 2019).

A patient with schizophrenia is unable to perform self-care independently due to significant cognitive impairment (Salsabila & Harjana, 2024). This impairment hinders the patient's ability to organize and carry out self-care activities such as bathing, dressing, eating, and toileting. This inability is also caused by deficits in attention, motivation, and energy to perform self-care tasks, as well as difficulty completing instructions and concentrating. This

condition is evident in Ms. S's behavior, who is lazy about brushing her teeth, rarely does so without being reminded, and does not realize the importance of maintaining dental and oral hygiene. This is evident in the patient's teeth, which appear dirty, contain food debris, and have unpleasant breath. One nursing intervention carried out for Ms. S with self-care deficits is the token economy method. A token economy is a reinforcement system that provides patients with tangible rewards for certain behaviors. These rewards, or "tokens," are accumulated so that patients can exchange their tokens for real prizes or activities (Vitha, 2024). The results obtained after carrying out nursing actions for 2 weeks starting from October 20 - November 1, 2025 showed that the patient's self-care improved. The results obtained an increase in the score of dental hygiene activities (Oral Hygiene) which can be seen from before being given the token economic action, the result was 10 (poor oral hygiene) and after being given the token economic action, the result was 30 (fairly good oral hygiene) with the instrument assessed being dental and oral hygiene. In addition, the results of the patient's token economics showed a slow increase in ability, although there was a decline on the 6th day. However, at the end of the week, motivation and response to reinforcement began to improve. In the second week, the patient showed significant and consistent progress, being able to perform all stages of tooth brushing independently with a score reaching 20 stars at the end of the week (Hendriyani, Rafenia, Maharani, & Al-Azis, 2023).

The patient's response during the evaluation stated that he had started brushing his teeth diligently as recommended, that he knew that brushing his teeth properly requires using toothpaste and a toothbrush, and that he understood the purpose of maintaining dental hygiene (Hickey, 2018). The evaluation results of nursing care are considered achieved if the client shows positive behavioral changes, namely being willing and able to brush his teeth properly and maintain oral hygiene regularly (Sainyakit, Agustina, & Safitri, 2024). This indicates an increase in awareness and motivation in self-care, in accordance with the established intervention objectives. Conversely, the objectives are considered not achieved if the client does not show behavioral changes or remains reluctant to perform self-care. Based on this information, the researchers assumed that the increase in self-care in clients could be due to

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the economic tokens provided by nurses. Economic tokens given to clients who previously refused to brush their teeth, after being given economic tokens, encouraged them to wash their hands before eating. Self-care activities using economic tokens were quite effective in motivating them to maintain personal hygiene, with a p-value of 0.001, with the intervention results showing a 63% increase compared to the pre-intervention period (Wardini, Saswati, & Harkomah, 2024).

CONCLUSION

The implementation of the token economy method has proven effective in improving patients' self-care skills, particularly in maintaining dental and oral hygiene. Through a structured reward system, patients are motivated to gradually adopt positive behaviors until they are able to brush their teeth correctly and independently. Evaluation results showed an improvement in dental hygiene scores from poor to fair after two weeks of the intervention. Patients also demonstrated increased motivation, awareness, and independence in maintaining personal hygiene.

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