ISSN No:-2456-216

Cognitive Behavior Therapy (CBT) Model in Formation of Dental and Oral Health Maintenance Behavior in Paranoid Schizophrenic Patients

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Abstract:- Background: Schizophrenic patients often have lives of fantasies and delusions created by their own emotions and thoughts. Makes patients lose the ability to carry out their activities and experience the ability to care for themselves. Cognitive Behavioral Therapy (CBT)is a regular short-term therapy consisting of 6 sessions of 45 minutes to 1 hour per session. Cognitive Behavioral Therapy (CBT) can train patients to deal with anxiety, and deal with emerging behaviors.
Aim: Producing Cognitive Behavior Therapy (CBT) Models in Formation of Dental and Oral Health Maintenance Behaviors in Paranoid Schizophrenic Patients.

Research methods: Research and Development (R&D) and product test using quasi-experimental pre and post-test design (Non-equivalent Control Group). The respondents were 40 patients who were divided into 2 groups. The data from the model test were analyzed using repeated measure ANOVA statistical test, post hoc LSD, and independent t-test.

Results: Expert validation test of the model Cognitive Behavior Therapy (CBT) In Formation of Dental and Oral Health Maintenance Behavior in Schizophrenic Patients this is obtained p-value <0.006. Application model Cognitive Behavior Therapy (CBT) in patients can improve knowledge, attitudes, teeth brushing skills, and OHI-S status of patients statistically meaningful (p<0.005).

Conclusion: Model application Cognitive Behavior Therapy (CBT) effective in the formation of dental and oral health maintenance behavior in paranoid schizophrenic patients.

Keywords: *CBT, behavior, schizophrenia.*

I. INTRODUCTION

Health is a condition in which individuals do not have a disease, but health is influenced by the balance of physical, psychological, and social functions of an individual[1]. According to the Law of the Republic of Indonesia, Number 36 of 2009 concerning Health, healthy is a condition in which an individual is physically, mentally, spiritually, or socially and an individual can contribute to the group.[2]

Mental health is a person's condition able to adapt physically, mentally, spiritually, and socially so that they can handle situations, work productively[3]. Schizophrenic patients often have lives of fantasies and delusions created by their own emotions and thoughts. auditory hallucinations, lack of social interaction, and uncontrolled emotional[4]. This makes the person lose the ability to carry out their activities and experience the ability to take care of themselves such as eating, drinking, cleaning the body from dirt, brushing teeth, and so on[5].

Schizophrenic patients have a higher potential for dental and oral disease caused by psychotropic drugs consumed by patients[6]. Another factor that contributes to the increased incidence of dental caries in patients with schizophrenia is high sugar intake, associated with a high prevalence of dental caries and plaque index[7].

Based on the International Classification of Diseases, schizophrenia is divided into several variables, namely paranoid schizophrenia, hebephrenic schizophrenia, catatonic schizophrenia, unspecified schizophrenia, post-schizophrenic depression, residual schizophrenia, schizophrenia simplex[8]. Total of 706,689 adolescents aged 15 years in Indonesia show symptoms of depression and anxiety, while the prevalence of schizophrenia in Indonesia reaches around 282,654 people from the total population of Indonesia[9]. In general, the disease possessed by schizophrenic patients is caries, and missing or missing teeth due to caries and periodontal disease[10].

Cognitive Behavioral Therapy (CBT)is a regular short-term therapy consisting of 6 sessions of 45 minutes to 1 hour per session[11]. CBT can train patients to handle anxiety, and deal with behaviors that arise in patients[12]. Cognitive Behavioral Therapy (CBT) has an effect in reducing hallucinatory symptoms in paranoid schizophrenia patients.[13]

II. METHODOLOGY

This study uses the Research and Development (R&D) development method which is used to produce a model for the formation of behavior in schizophrenia patients with paranoid type[14]. The research and development procedure includes five main steps, namely[15]: 1) Information gathering, 2) Model design, 3) Expert validation and revision, 4) Model testing, 5) Model results.

The design of this study used a Quasy Experiment Design with a Pre-post Test design with a control group design and the selection of respondents was not done randomly. Respondents consisted of 40 people who were

ISSN No:-2456-216

divided into two groups. Patients who participated in this study were inpatients at the Jambi Provincial Mental Hospital and the Social Service of UPTD Harapan Mulia Jambi. Instrument to measure knowledge, attitude, quality of information and feasibility of the model using a questionnaire. The research data uses an interval scale, statistical test of interclass correlation coefficient to test the feasibility of the model, while the normality test uses the Shapiro-Wilk test because the number of respondents is more than 50. The effectiveness test on the data uses repeated measure, anova, post hoc LSD, independent t- test.

III. RESULTS AND DISCUSSION

A. *Data Collection*

The results of data collection were carried out through the interview method and a systematic literature review concluded that schizophrenic patients can receive interventions in the form of promotive, preventive and curative measures, but patients will only be willing if the actions are carried out by operators they already know. Therefore, the stages of establishing a relationship between the operator and the patient will be very necessary. Stages of work in patients with schizophrenia will be different from patients in general and will require more patience.

B. *Expert Validation*

Table 1 shows that the expert validation results have a p-value of 0.006 <0.05 which means Cognitive Behavior Therapy (CBT) Model in Formation of Dental and Oral Health Maintenance Behavior in Paranoid Schizophrenic Patients feasible as a model for the formation of dental health maintenance behavior.

	N	F(%)	*p-value*
Relevant	10	100	0.006
Irrelevant	10	0	

Table 1 : Expert Validation

C. *Model Trial*

Most of the dental and oral therapists were S1 as many as 4 people (66.7%) in the control group or in the intervention group. Most of the patients were in the age of 30-40 years as many as 9 people (45%) in the intervention group and 13 (65%) people in the control group. All respondents in this study were male, and 9 people (45%) had suffered from schizophrenia for more than 1 year in the intervention group and the control group.

No	Characteristics	Intervention		Control		P value
		N	%	n	%	
Dental Therapis						
1	The education					
	a. D3	2	33,3	2	33,3	1
	b. D4/S1	4	66,7	4	66,7	
Pasien Skizofrenia						
2	Age					
	20-30th	7	35	4	20	0,135
	30-40 th	9	45	13	65	
	41-50 th	4	30	3	15	
3	Gender					
	Male	20	100	20	100	1
	Female	0	0	0	0	
4	Length of illness					
	< 1year	7	35	9	45	0,932
	>1 year	9	45	9	45	
	>2 years	4	30	2	10	

Table 2 : Characteristics of Respondents

Table 2 shows that there is no significant difference between the two groups in the characteristic data (p=>0.05).

Variable	Statistics							
	Intervention				Control			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Pre Test of Knowladge	4,00	1,338	2	6	4,05	1,468	2	7
Post Test 1	4,00	1,338	2	6	4,05	1,468	2	7
Post Test 2	4,75	1,118	3	7	4,55	1,701	2	8
Post Test 3	5,50	1,051	3	7	5,10	1,410	2	8
Post Test 4	7,55	1,099	6	9	5,10	1,410	2	8
Post Test 5	10,45	1,146	8	12	5,75	1,333	4	9
Pre Test of Cooperative	21	1,686	18	24	20,70	1,625	18	24
Post Test 1	21	1,686	18	24	20,70	1,625	18	24
Post Test 2	21,85	1,565	19	25	22	1,556	19	24
Post Test 3	27,05	1,905	24	30	23,30	2,093	19	28
Post Test 4	32,50	2,188	28	36	23,30	2,093	19	28
Post Test 5	44,90	1,997	39	49	25	2,103	20	30
Pre Test Of Brushing Teeth	8,10	1,683	6	12	7,70	1,342	6	10
Post Test 1	9,60	1,465	7	12	7,70	1,342	6	10
Post Test 2	10,90	1,683	8	14	7,95	1,317	6	10
Post Test 3	14,70	1,490	11	17	8,25	1,118	6	10
Post Test 4	18,20	1,542	15	20	10,10	1,252	8	10
Post Test 5	20,20	1,215	18	23	11,75	1,293	9	12
Pre Test of OHI-S	4,355	0,524	3,4	5,3	4,48	0,450	3,8	14
Post Test 1	3,980	0,512	3,2	4,8	4,48	0,450	3,8	5,3
Post Test 2	3,645	0,561	2,5	4,6	4,48	0,450	3,8	5,3
Post Test 3	3,395	0,505	2,5	4,5	4,40	0,427	3,8	5,2
Post Test 4	3,120	0,502	2,5	4,2	4,40	0,427	3,8	5,2
Post Test 5	2,687	0,803	1,5	4,3	4,11	0,467	3,3	5,2

Table 3 : Test the normality of data on schizophrenia patients in the intervention group and the control group

The results of the normality test for knowledge of cooperative attitudes, cooperative and OHI-S of patients were mostly normally distributed because p-value > 0.05, followed by parametric statistical tests.

Variable	Mean±SD Pre-test	Mean±SD Post-test 1	Mean±SD Post-test 2	Mean±SD Post-test 3	Mean±SD Post-test 4	Mean±SD Post-test 5	*P-Value*
Repeated Measure Annova							
Intervention	4,00±1,338	4,00±1,338	4,75±1,118	5,50±1,051	7,55±1,099	10,45±1.146	0,000
Control	4,05±1,468	4,05±1,468	4,55±1,701	5,10±1,1410	5,140±1,1410	5,75±1,333	0,000
Pos Hoc LSD**							
	Pretest-Posttest 1 *P-value*	Posttest1-Posttest2 *P-value*	Posttest2-Posttest3 *P-value*	Posttest3-Posttest4 *P-value*	Posttest4-Posttest5 *P-value*		
Intervention	0,000	0,069	0,004	0,000	0,000		
Control	0,000	0,021	0,037	0,000	0,015		
Independent T-Test***							
	Pretest Mean±SD	Posttest1 Mean±SD	Posttest2 Mean±SD	Posttest3 Mean±SD	Posttest4 Mean±SD	Posttest5 Mean±SD	
Intervention	4,00±1,338	4,00±1,338	4,75±1,118	5,50±1,051	7,55±1,099	10,45±1.146	
Control	4,05±1,468	4,05±1,468	4,55±1,701	5,10±1,1410	5,140±1,1410	5,75±1,333	
P-Value	0,911	0,911	0,663	0,316	0,000	0,000	

Table 4 : The Effectivity test of knowledge in intervention group and control group

The results of the paired data effectiveness test showed that the p-value of the intervention group was 0.000 (p<0.05), which means that the cognitive behavior therapy model was effective in increasing the knowledge of schizophrenic patients.

ISSN No:-2456-216

Variable	Mean±SD Pre-test	Mean±SD Post-test 1	Mean±SD Post-test 2	Mean±SD Post-test 3	Mean±SD Post-test 4	Mean±SD Post-test 5	*P-Value*
Repeated Measure Annova*							
Intervention	21,00±1,686	21,00±1,686	21,85±1,565	27,05±1,905	32,50±2,188	44,10±1,997	0,000
Control	20,70±1,625	20,70±1,625	22,00±1,556	23,20±2,093	23,20±2,093	25,00±2,093	0,000
Pos Hoc LSD**							
	Pretest-Posttest 1 *P-value*	Posttest1-Posttest2 *P-value*	Posttest2-Posttest3 *P-value*	Posttest3-Posttest4 *P-value*	Posttest4-Posttest5 *P-value*		
Intervention	0,000	0,000	0,001	0,000	0,000		
Control	0,000	0,000	0,000	0,002	0,000		
Independent T-Test***							
	Pretest Mean±SD	Posttest1 Mean±SD	Posttest2 Mean±SD	Posttest3 Mean±SD	Posttest4 Mean±SD	Posttest5 Mean±SD	
Intervention	21,00±1,686	21,00±1,686	21,85±1,565	27,05±1,905	32,50±2,188	44,10±1,997	
Control	20,70±1,625	20,70±1,625	22,00±1,556	23,20±2,093	23,20±2,093	25,00±2,093	
P-Value	0,570	0,570	0,763	0,000	0,000	0,000	

Table 5 The Effectivity test of cooperative attitudes in intervention group and control group

The results of the paired data effectiveness test showed that the p-value of the intervention group was 0.000 (p<0.05), which means that the cognitive behavior therapy model was effective in improving the attitudes of schizophrenic patients.

Variable	Mean±SD Pre-test	Mean±SD Post-test 1	Mean±SD Post-test 2	Mean±SD Post-test 3	Mean±SD Post-test 4	Mean±SD Post-test 5	*P-Value*
Repeated Measures Annova*							
Intervention	8,10±1,683	9,60±1,645	10,90±1,683	14,70±1,690	18,20±1,542	20,20±1,152	0,000
Control	7,70±1,342	7,70±1,342	7,95±1,317	8,25±1,118	10,10±1,252	11,75±1,293	0,000
Pos Hoc LSD**							
	Pretest-Posttest 1 *P-value*	Posttest1-Posttest2 *P-value*	Posttest2-Posttest3 *P-value*	Posttest3-Posttest4 *P-value*	Posttest4-Posttest5 *P-value*		
Intervention	0,000	0,000	0,000	0,000	0,000		
Control	0,000	0,096	0,055	0,000	0,000		
Independent T-Test***							
	Pretest Mean±SD	Posttest1 Mean±SD	Posttest2 Mean±SD	Posttest3 Mean±SD	Posttest4 Mean±SD	Posttest5 Mean±SD	
Intervention	8,10±1,683	9,60±1,645	10,90±1,683	14,70±1,690	18,20±1,542	20,20±1,152	
Control	7,70±1,342	7,70±1,342	7,95±1,317	8,25±1,118	10,10±1,252	11,75±1,293	
P-Value	0,411	0,000	0,000	0,000	0,000	0,000	

Table 6 : The Effectivity test of brushing teeth intervention group and control group

The results of the paired data effectiveness test showed that the p-value of the intervention group was 0.000 (p<0.05), which means that the cognitive behavior therapy model was effective in improving the way of brushing teeth in schizophrenia patients.

Variable	Mean±SD Pre-test	Mean±SD Post-test 1	Mean±SD Post-test 2	Mean±SD Post-test 3	Mean±SD Post-test 4	Mean±SD Post-test 5	*P-Value*
Repetead Measured Annova *							
Intervention	4,355±0,524	3,980±0,513	3,645±0,561	3,395±0,505	3,120±0,502	2,687±0,802	0,000
Control	4,480±0,450	4,480±0,450	4,480±0,450	4,405±0,427	4,405±0,427	4,410±0,469	0,000
Uji Post Hoc Berpasangan**							
	Pretest-Posttest 1 *P-value*	Posttest1-Posttest2 *P-value*	Posttest2-Posttest3 *P-value*	Posttest3-Posttest4 *P-value*	Posttest4-Posttest5 *P-value*		
Intervention	0,000	0,000	0,000	0,001	0,000		
Control	0,000	0,044	0,044	0,044	0,000		
Uji Tidak Berpasangan***							
	Pretest Mean±SD	Posttest1 Mean±SD	Posttest2 Mean±SD	Posttest3 Mean±SD	Posttest4 Mean±SD	Posttest5 Mean±SD	
Intervention	4,355±0,524	3,980±0,513	3,645±0,561	3,395±0,505	3,120±0,502	2,687±0,802	
Control	4,480±0,450	4,480±0,450	4,480±0,450	4,405±0,427	4,405±0,427	4,410±0,469	
P-Value	0,424	0,002	0,000	0,000	0,000	0,000	

Table 7 : The Effectivity test of OHI-S in intervention group and control group

The results of the paired data effectiveness test showed that the p-value of the intervention group was 0.000 (p<0.05), which means that the cognitive behavior therapy model was effective in reducing the OHI-S score of schizophrenic patients.

D. Product Results

The product in the form of a cognitive behavior therapy model is the output of the development of a dental and oral health care model. This counseling model of cognitive behavior therapy is a patient-centered directive method to generate intrinsic motivation in changing attitudes and behavior.

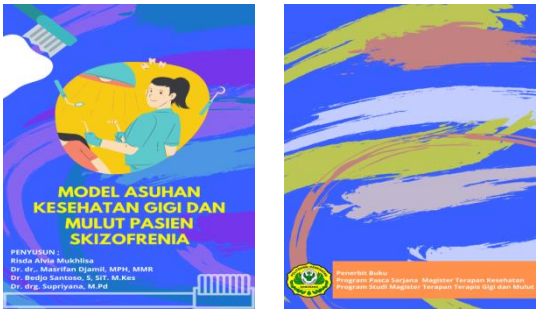

Fig. 1 Product Results

IV. DISCUSSION

Implementation of dental treatment in patients with schizophrenia is not easy because patients have obstacles in receiving care for patients with schizophrenia having different characteristics from patients in general such as hallucinations, delusions, apathy towards the environment and drugs consumed by schizophrenic patients causing schizophrenic patients to be more susceptible to dental and oral disease16. Patients with schizophrenia need continuous care, therefore it is necessary to make a plan specifically made for schizophrenic patients[17]

The first stage, introduction to the patient, by means of the relationship between the operator and the nurse who treats the patient, to assist the therapist in approaching the patient, the second meeting is still building a relationship with the patient by playing in groups18. The second stage is self talk and cognitive restructuring. The results of the paired effectiveness test in the intervention group showed a p value of 0.000 <0.05. Role playing can improve the ability of schizophrenic patients to interact and communicate with others.[19].

The third stage is refarming with side chair talk counseling method, the media used are flipchart and phantom. Paired effectiveness test results in the intervention group with p value 0.000 <0.05. Counseling with visual media can improve oral hygiene in schizophrenic patients[20].

Self-care training can increase the patient's independence in performing self-care actions, the results of the paired effectiveness test in the intervention group with p value 0.000 <0.05 shows that the cognitive behavior therapy model can improve the ability of schizophrenic patients to

ISSN No:-2456-216

brush their teeth and help patients reduce OHI-S rates. in schizophrenic patients.

V. CONCLUSION

Specific treatment plans are needed to improve behavior in schizophrenic patients. Cognitive behavior therapy is effective in shaping dental and oral health maintenance behavior in schizophrenic patients.

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