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Impact of Brief Interactive Psycho-Education Intervention on Caregiver toward Family Care Burden for Schizophrenic Patients at Puskesmas Kasihan II, Bantul

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ABSTRACT

Background: Schizophrenia is a chronic severe mental disorder which causes a substantial burden of care for family caregivers.

Objective: This study aimed to identify the effect of a brief interactive psycho-education intervention on caregivers towards family care burden for schizophrenic patients.

Method: This study was a quasi-experimental design with one control group. Data were obtained from a random sample of patients who came to Puskesmas Kasihan II (Community and Primary Health Care Center). The participants in this research were 68 caregivers, who were divided into treatment and control groups. Both groups were administered a pre and post-test with the Burden Assessment Schedule questionnaire early in the first week and in the end or fourth week. The treatment group received a brief interactive psycho-education of schizophrenic patient care over one week for 4 sessions, while the control group received the prescribed essential medicines as usual.

Results: This study showed that the average scores of the pre-test for the two groups were not significantly different (p value 0.77), while the averages of the post-tests were significantly different (p value 0.001).

Conclusion: It was concluded that a brief interactive psycho-education for caregivers of schizophrenic patients was effective to decrease family care burden.

Keywords: psycho-education, caregiver, family burden, schizophrenia, intervention

INTRODUCTION

Schizophrenia is a chronic severe mental disorder. Annual prevalence in various countries ranges from 1% to 1.3%. The results of Riskesdas in 2013 showed that the prevalence of severe mental disorders in Indonesia was 1.7 per mile. The prevalence of severe mental illness in Yogyakarta (DIY) was 2.7% per mile, which was higher than the national rate^{1,2}.

Mental disorders are rarely linked to mortality, but the burden borne by sufferers and families is severe and extensive. Based on Disability Adjusted Life Years (DALYs) from the World Bank in 2005, the global burden of diseases contributed 13% to mental and neurological health problems. Among non-communicable diseases, the burden of mental health problems is 22%, and this figure is greater than the burden caused by cardiovascular disease (21%), cancer (11%) or lung disease (8%). The burden

includes the loss of opportunities for school, work or effect on simple day-to-day living activities^{3,4}.

Research on early psychotic disorders conducted in Yogyakarta shows that almost all patients still lived with their family or parents, even though they were over 18 years old or already married. Patients with psychotic disorders often have insight or self-possession disorder, so the patient does not realize if they suffered from interference or pain. Patients often refuse treatment or care, and will become dependent on the family³. Some of the ways people with schizophrenia will be often treated by family members can be as a partner, mother, father or other family members by someone who usually is called the caregiver. Most caregivers consider treatment by a family with a schizophrenic patient as a burden^{3,5}. Nevertheless, research conducted in Bangalore India at the primary care level stated that the burden of caregiver

families of patients with schizophrenia in that area of India was lower than expected and lower than previous studies at tertiary service level⁶.

Health workers mostly devote their attention to patients while caregivers who provide daily care for patients are sometimes overlooked. Doctors often forget the chronic aspects of schizophrenia in a family's life and pay more attention to the emergency situations when the patient requires special treatment and is in a state of decompensation. It cannot be denied that families, especially caregivers, need support in the face of chronic phases of schizophrenia, such as assisting them in daily activities, how to make decisions, and face other difficulties⁶.

Indonesia has a national policy that integrates the management of mental health problems into the basic health care system. Basic health care workers are an important component in the management of schizophrenia with a family and community approach. Training programs to provide psychoeducation for families with psychotic disorders for health workers in primary care are effective in improving their knowledge of schizophrenia⁷. Increased knowledge of these health workers should be continued with psychoeducation to families in the hope of increased knowledge and compliance control so that their quality of life is better and in order to reduce the burden of family care.

The profile of the *Puskesmas* Kasihan II in 2014 stated that the number of people with severe mental disorders in the *Puskesmas* area was as many as 200 cases from 60,000 residents. Most sufferers were in productive ages. In addition, schizophrenia was the most frequent case visits after nasopharyngitis, hypertension and diabetes mellitus. The overall management of schizophrenia should not only focus on the patient's handling but also focus on the nearest family members/caregivers with appropriate psychoeducation. So far, psychoeducation of caregivers has not used a structured method, so it needs a guideline that can be done easily and effectively by *Puskesmas* officers. The family burden experienced by caregivers so far has not received much attention.

The purpose of this research was to determine the effect of short interactive psychoeducation intervention of caregiver schizophrenia to the care burden of the patient's family in *Puskesmas* Kasihan II Bantul.

RESEARCH METHODS

The design of this study was quasi experimental with pre and post-test control group design with systematic random sampling. The population of this research was caregivers of schizophrenic patients of the *Puskesmas* Kasihan II and based on data of health records in 2014 the sample was 200 people. The sample of the study was schizophrenic patients' caregivers who came to the *Puskesmas* Kasihan II and completed an E Health application which is the data entry system of *Puskesmas* visits from these medical records as many as 68 people were enlisted to participate and were divided into treatment and control groups.

The group determination was based on the sequence in the E Health application where for odd numbers they were included in the treatment group and the even numbers became the control group, each with 34 individuals. Both groups took a pre-test using the validated and widely used Burden Assessment Schedule in the first week, then the treatment group was given psychoeducation once a week for 4 sessions, and the control group did not get the intervention and received the usual essential medications. Psychoeducation was done interactively and each group had 17 people in the treatment group. After the fourth week the post-test using the Burden Assessment Schedule was administered in both groups.

In this study, the inclusion criteria of caregivers of schizophrenic patients in the *Puskesmas* Kasihan II area were: diagnosed according to PPDGJ III (Mental Disorders Diagnostic Classification Guidelines) criteria, patients not in acute phase, home care, age more than 18 years, have medical record of *Puskesmas* Kasihan II and signed research consent form. Exclusion criteria were: if the subject is unable to provide information on the Burden Assessment Schedule interviews used in the study and the Drop Out (DO) criteria was when not following the full psychoeducation session for 4 sessions.

The dependent variable was the family care burden measured under the Indonesian version of the Burden Assessment Schedule instrument. The independent variables in this study were short-term psychoeducation of caregivers of patients with schizophrenia using a psychoeducation module from the study of Dr. Carla R. Marchira who concluded that this brief interactive psychoeducation intervention module on schizophrenia can be used for caregivers of patients with psychotic disorders. The moderator variables of this study were characteristics of caregivers consisting of age, sex, occupation, education level, marital status, length of care and relationship with patient. In addition, we analyzed the characteristics of patients consisting of age, sex, occupation, education, marital status, duration of illness, onset, regularity of treatment and frequency of care. The data analysis used univariate, bivariate and multivariate analyses.

RESULTS

Based on the research conducted on 68 caregivers the results are presented in Table 1. The analyses used paired sample t test, independent sample t test, Anova and linear regression tests.

Table 1. Caregiver and patient characteristics

Variable	Psychoeducation interaction				c2/t	p
	Treatment		Control			
	n	%	n	%		
	Means±SD		Means±SD			
Patient's Gender						
Men	20	58.8	18	52.9	0.24	0.63
Women	14	41.2	16	47.1		
Patient's Job Status						
Employed	11	32.4	4	11.8	4.2	0.08
Unemployed	23	67.6	30	88.2		
Patient's Educational Status						
SD (Elementary School)	9	26.5	7	20.6	0.61	0.89
SMP (Junior High School)	7	20.6	7	20.6		
SMU (Senior High School)	17	50.0	18	52.9		
PT (University)	1	2.9	2	5.9		
Patient's Marriage Status						
Married	10	29.4	9	26.5	0.07	0.79
Single	24	70.6	25	73.5		
Regularity Control						
Regular	23	67.6	22	64.7	0.07	0.79
Irregular	11	32.4	12	35.3		
Caregiver's Gender						
Male	12	35.3	20	58.8	3.8	0.05
Female	22	64.7	14	41.2		
Caregiver's Educational Status						
SD (Elementary School)	7	20.6	9	26.5	5.2	0.16
SMP (Junior High School)	15	44.1	13	38.2		
SMU (Senior High School)	12	35.3	8	23.5		
PT (University)	0	0	4	11.8		
Caregiver's Job Status						
Employed	24	70.6	20	58.8	1.0	0.31
Unemployed	10	29.4	14	41.2		
Caregiver's Marriage Status						
Married	29	85.3	30	88.2	0.13	0.50
Single	5	14.7	4	11.8		
Relationship with Patient						
Parents	18	52.9	21	61.8	0.78	0.68
Spouse	5	14.7	3	8.8		
Others	11	32.4	10	29.4		
Caregiver's Age	37.7±9.4		38.7±11.3		-0.43	0.67
Onset of Disease	24.4±7.3		23.1±8.8		0.67	0.50
Duration of Pain	12.1±8.8		14.7±10.3		-1.1	0.27
Frequency of Being Treated	2.1±1.8		1.9±1.9		0.52	0.61
Patient's Age	51.5±9.3		55.7±7.7		-2.0	0.48
Caring Duration	9.7±6.9		15.1±10.3		-2.5	0.24

Characteristics of caregiver and patient were homogeneous. The highest level of caregivers' education was junior high school, mostly employed, mostly married, and most affiliated with the elderly. The majority of patients with schizophrenia were male, the highest level of education

was high school, mostly unemployed, sickness between 6-10 years, with onset at the young age of 11-20 years old and most under control regularly.

There was a significant mean change in the decrease in

Table 2. The difference of family care burden mean of treatment and control group before and after interactive psychoeducation

Group	Care burden		The changes of care burden	p
	Before	After		
	Mean±SD	Mean±SD		
Interactive Psychoeducation				
Treatment	28.4±5.5	20.6±3.3	7.8	0.0001
Control	28.03±6.3	28.06±6.5	0.03	0.77

family care burden before and after the short interactive psychoeducation in the treatment group of 7.8 with p value 0.0001 (p < 0.05).

Table 3 shows that the psycho-education intervention had a positive effect among schizophrenia patient caregivers on family care burden in the treatment and control group with p value 0.0001.

Table 3. The effect of Schizophrenia caregiver's short interactive psychoeducation for family care burden delta

Group	Care burden	Difference	p
	Mean±SD		
Interactive Psychoeducation			
Treatment	-7.8±4.4	7.8	0.0001
Control	-0.03±0.6		

Table 4 shows that the characteristics of subjects consisting of sex, occupation, marital status of caregiver and patient and control regularity did not affect family care burden with $p > 0.05$.

Table 5 shows that family care burden was not related to caregiver education level and patient and relationship with patient with $p < 0.05$.

Table 4. The effect of respondents characteristic for family care burden

Variable	N	Care burden Mean±SD	Difference	p
Patient's Gender				
Men	38	-4.4±4.9	-1.1	0.37
Women	30	-3.3±5.1		
Patient's Job Status				
Employed	15	-4.9±4.8	-1.2	0.41
Unemployed	53	-3.6±5.1		
Patient's Marriage Status				
Married	19	-4.3±5.5	-0.49	0.72
Single	49	-3.8±4.8		
Regularity Control				
Regular	45	-3.9±5.2	-0.1	0.92
Irregular	23	-3.8±4.7		
Caregiver's Gender				
Men	32	-2.9±4.8	1.8	0.13
Women	36	-4.8±5.1		
Caregiver's Job Status				
Employed	44	-4.3±5.2	-1.0	0.42
Unemployed	24	-3.3±4.6		
Caregiver Marriage Status				
Married	59	-3.8±4.9	1.0	0.58
Single	9	-4.8±5.5		

Table 5. The relationship between educational status and family relation toward care burden

Variable	n	Care burden Mean±SD	F	p
Caregiver's Educational Status				
SD (Elementary School)	16	-2.8±4.2	1.5	0.22
SMP (Junior High School)	4	-0.3±0.5		
SMU (Senior High School)	20	-5.2±5.7		
PT (University)	28	-4.2±5.1		
Relationship with the Patient				
Parents	21	-3.5±3.6	0.9	0.41
Spouse	39	-3.7±5.2		
Others	8	-6.1±7.0		

Table 6 shows that long caring was associated with family care expenses with $p = 0.02$ (<0.05). While the characteristics of patient age, onset, duration of illness and

frequency of care were not related to family care burden ($p > 0.05$).

Table 6. The correlation between age, onset, duration of pain, frequency of being treated, and caring duration toward care burden

Variable	R	p
Patient's Age	0.04	0.73
Onset	-0.14	0.25
Duration of Pain	0.15	0.21
Frequency of Being Treated	0.06	0.61
Caregiver's Age	0.23	0.06
Caring Duration	0.29	0.02*

Table 7 shows that the short interactive psychoeducation for caregivers of patients with schizophrenia affects the family care burden with a value of $p = 0.001$ ($p < 0.05$). While onset, duration of illness, length of care, education and gender did not affect family care burden ($p > 0.05$). This result indicated that the short interactive psychoeducation for caregivers was effective for reducing family care burden and was not influenced by the other variables.

Table 7. Factors that affect the family care burden

Variable	b	p
Interactive Psychoeducation	-7.4	0.001
The Onset of Incident Hospital	-0.1	0.84
Duration of Pain	0.01	0.92
Caregiver's Age	0.02	0.73
Caring Duration	0.04	0.67
Caregiver's Educational Status (PT/University)	-0.47	0.82
Caregiver's Educational Status (SMU/Senior High School)	-1.25	0.34
Caregiver's Educational Status (SMP/Junior High School)	-0.49	0.66
Caregiver's Gender	0.46	0.60
Constanta	-1.17	
R ²	0.64	

DISCUSSION

The results of this study indicate that most caregivers are parents with 52.9% in the treatment group and 58.8% for the control group and then by other family members amounting to 32.4% in the treatment group and 29.5% in the control group, while some were as a couple with 14.7% in the treatment group and 11.7% in the control group. In this study caregivers came from the immediate family of parents, spouses, older siblings and siblings, and we did not find any caregiver not family who worked as caregiver. This finding can be understood where most of the patients as many as 49 (72.05%) are not married and live with their parents.

In this study, there were more males although it is mentioned that the prevalence of schizophrenia is the same in both sexes, but onset in men is faster by more than 5 years compared to women, i.e. men and women at 20-25 years 25-30 years, respectively⁸. Symptoms of schizophrenia usually appear in late teens or young adults. Onset in men is usually between 15-25 years and in women between 25-35 years. Onset after age 40 is rare¹. In this study the majority of onset age was 11-20 years in the treatment group with 50% and the age of 21-30 years in the control group with 47.1%. This finding is in accordance with the theory that the early symptoms of schizophrenia appear in late adolescence or young adulthood.

Schizophrenia is a severe psychiatric disorder that causes a decline in social function and potentially creates a long-term burden for both patients and their families. Treatment burden is influenced by the condition of patients, family and society. Research conducted in Brazil stated that the patient's clinical conditions and sociodemographic variables were important determinants of family burden. The objective load was influenced by the negative symptoms whereas the subjective burden was influenced by the symptoms and the sociodemographic variable that was age of onset⁹. In this study there was no effect of age of onset on family care burden, since this study does not specifically analyze the subjective burden and objective load.

Studies in India and Chile conducted on caregivers of schizophrenic outpatients at the hospital said that the duration of illness, the degree of psychopathology, level of disability, the frequency of recurrence, positive symptoms and lack of social support were predictors of the onset of

the burden of family care^{10,11}. In this study duration of pain and frequency of recurrence did not affect the burden of family care but long caring was associated with family care burden. This difference is possible because of the research was conducted at the level of basic services where the patient's condition is more stable and has been treated in the acute phase, while the level of psychopathology, disability and social support was not assessed.

The burden of family care is influenced not only by the patient's condition and the characteristics of the caregiver but also the difference in mental health services in their health care system. Characteristics of caregivers that affect family burden are: range of symptoms, male gender, unemployment, marital status, coping ability, contact with patient and patient's parents. Social support and psycho-education are urgently needed to lower the family burden¹². In this study the sex, occupation, marital status and relationship with patients did not affect the burden of family care. This difference is likely due to differences in socio-cultural factors and mental health care systems in European countries that are not the same as Asia.

Schizophrenia is a long-term disease that can lead to various symptoms of continuous degradation of function and dependence that potentially can cause extensive care burden for the family. The burden of family care is an important component as a result of the chronicity of the disease as most sufferers live with their families for an extended period of illness¹³.

The mean of family care burden prior to intervention was 28.35 in the control group and 28.05 in the treatment group. It is almost the same with research confirming that the vast majority (89%) of caregivers assume care of family members suffering from schizophrenia as a burden to the average result of 26.41 BAS scores⁵. Schizophrenia has a broad impact not only on individuals and patients but also on their families and communities. Patients experiencing discrimination in terms of getting employment and education opportunities because of the stigma is still strong. Family care expenses occur due to emotional reactions due to illness, coping ability to stress, and stigma causing social withdrawal as well as economic problems¹³.

Management of severe mental disorders is not only done to the patient but should also focus on the caregiver. This caregiver intervention aimed to improve the experience in

care, improve the quality of life, and reduce the stress of caring for their family member who are experiencing and suffering from serious mental disorders. The intervention of caregivers should be an integral part in the management of severe mental disorders¹⁴.

Psychoeducation is effective for improving knowledge and positive coping skills of the patient's family but is less useful in reducing psychological morbidity, the burden of care or emotional expression. Psychoeducation is done in the form of groups where participants can exchange experiences, improve knowledge and skills facilitated by health workers are very beneficial to the family. Psychoeducation should be done as early as possible from caregivers first contact with serious mental disorders with health care workers and on an ongoing basis¹⁵. Psychoeducation can reduce the burden of family care because it can improve the quality of life of patients and families and reduce the severity of symptoms experienced by patients^{16,17}.

Psychoeducation is conducted in this study in the form of interactive groups so that caregivers can interact between fellow participants and health workers and gain knowledge and skills about the causes, symptoms, signs, treatment, preventing recurrence, detection of symptoms increase and support of family and community. The results showed that the short interactive psychoeducation of caregivers of schizophrenic patients decreased the family care burden.

This short interactive psychoeducation of caregiver schizophrenia should be applicable in primary care as early as possible and given continuously in the management of the patient comprehensively. *Puskesmas* can conduct further psychoeducation by involving the community, across sectors and with community leaders so that the management of mental disorders is more comprehensive and socially acceptable. Psychoeducation should be included as one of the policies in the mental health services system in primary care as determined by the Ministry of Health Services and policy makers. Furthermore, further evaluation and research on psycho-education on the primary care level is required.

CONCLUSION

Based on the results of this study it can be concluded that there is beneficial influence of short interactive psychoeducation interventions for caregivers of patients with schizophrenia to decrease the burden of care of the family.

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Ethical Approval and Informed Consent

The study was approved by The Medical and Health Research Ethical Committee (MHREC) from the Faculty of Medicine, Universitas Gadjah Mada, Yogyakarta with reference number KE/FK/282/EC/2016.

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Availability of Data and Materials

Data and material can be accessed via corresponding author.

Conflict of Interest

None.

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