

Effect of family psycho education on Knowledge, Quality of Life, Expressed Emotions, Burden of Disease and coping among caregivers of patients with schizophrenia

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Abstract: Severe mental illness like schizophrenia has devastating impact on patients as well as their family members. The illness is of chronic nature and patients experience profound disruption to their thoughts and lives. Families of patients face grief, emotional hardship and are frequently forced to assume lifelong care-taking roles. Psycho educational interventions offered to family members of people with schizophrenia have been developing with increasing sophistication. These methods bring about changes in the family emotional atmosphere leading to better compliance and social adjustment in the patients. On this background, the present study aims to examine the knowledge about schizophrenia, QOL, burden of disease, expressed emotions and coping strategies among caregivers of patients with schizophrenia in the context of family psycho education.

The objectives were to assess the existing knowledge about schizophrenia, QOL, expressed emotions, burden of disease and coping strategies among caregivers of patients with schizophrenia before and after family psycho education in the control and the study group and to determine the association between selected demographic attributes. A quasi experimental study was conducted in the psychiatric ward of specific tertiary care hospital of Nagpur with a sample of one hundred twenty caregivers of patients with schizophrenia divided into the control and the study group of sixty each. The tools used were Socio Demographic data sheet, Knowledge Interview, WHOQOL-BREF Scale, Family Emotional Involvement and Criticism Scale, Burden Assessment Schedule, Family Crisis Oriented Personal Evaluation Scale at base line, one month and three months after intervention. The study group received family psycho education for five sessions, two to three days apart and the data collected was compared with the control group.

The Results -There was significant improvement in the Knowledge (KI) and Over All Quality of Life score (WHOQOL-BREF) at posttest in the study group. The study group showed good reduction in the Expressed Emotions (FEICS) score. Burden assessment score (BAS) was significantly reduced in the study group 'Seeking spiritual support' and 'mobilizing family to accept help' has emerged as the strongest coping strategy while 'reframing' as the weakest coping strategy in the study group. There was significant association found between posttest KI and FCOPE score with occupation. Significant association was also found between posttest BAS score with occupation and socio economic status of the study group. Nurse Educator led culturally sensitive Family psycho education is helpful and should be routinely provided to the caregivers of patients with schizophrenia following contact with the health services.

Key Words: Schizophrenia, Family Psycho education, Knowledge, Quality of life, Expressed Emotions, Burden and Coping strategy.

Date of Submission: 01-08-2018

Date of Acceptance: 16-08-2018

I. Introduction

Severe mental illness like schizophrenia has a devastating impact on the patients as well as their family members. Patients experience problems related to both positive symptoms such as the aggressive behavior, delusions, hallucinations as well as the negative symptoms such as poor motivation and inadequate self-care. The capacity for social relationship is often diminished and employment opportunities are reduced.¹

Schizophrenia is a severe mental disorder with relatively uniform distribution throughout the world. Being chronic and often incapacitating it extracts tremendous cost from patients, families and society. Society as a whole must bear the direct or indirect cost of schizophrenia.²

The World Bank Report of 1993 revealed that the Disability Adjusted Life Year (DALY) loss due to neuropsychiatric disorder is much higher than diarrhea, malaria, worm infestations and tuberculosis when taken individually. According to the estimates, DALY loss due to mental disorders are expected to be 15% of the global burden of cares by the year 2020.³

The prevalence rate for schizophrenia is approximately 1.1% of the population over the age of 18. At any one time as many as 51 million people worldwide suffer from schizophrenia including 6 to 12 million people in China, 3 to 8.7 million people in India, 2.2 million people in USA, 285,000 people in Australia, over 2, 80,000 people in Canada and with over 250,000 diagnosed cases in Britain.⁴

Despite extensive research aimed at understanding the cause of schizophrenia, the precise etiology remains unknown and is probably multifactorial implying that both genetic and environmental factors are important and remedial determinants of relapse.²The role of positive and negative syndrome profile of the patients is likely to affect the burden, coping, expressed emotions and consequent QOL of the caregivers.

The ability of the family caregiver to provide quality care and contribute to the management of chronic disease is a vital health care resource. Health care providers should be supportive of family caregivers and help them acquire knowledge and problem solving, organizational and communication skills in order to maximize quality care. Some caregivers are able to carry out care giving tasks better than others because of their knowledge about the disease, their experience, level of involvement and skills.⁵

QOL refers to the subjective satisfaction experienced by an individual with regard to physical, mental and social sphere. The concept of QOL is perhaps more important in those disorders which run a chronic and debilitating course and the treatment is mostly of a non-curative nature continuing over a long period of time.⁶

The Expressed Emotion (EE) is considered to be an adverse family environment which includes the quality of interaction pattern and nature of family relationships among the family caregivers and patients with schizophrenia and other psychiatric disorders.⁷ Relatives of patients experience a range of emotions from loss and grief to guilt and anger. The additions of the care giving role to already existing family roles become stressful, psychologically as well as economically.⁸

Caregiver burden refers to the negative feelings and subsequent strain experienced as a result of caring for a chronically sick person.⁹ The subject of burden has become significant with the emergence of de-institutionalization and the practice of community psychiatry.¹⁰

Little is known about the ways in which families cope while caring for a relative with schizophrenia in developing countries. Studying coping styles could be a useful way of generating information that can guide management strategies. This study aims to look at different coping styles used by relatives to cope with such patients. A caregiver's burden increases due to negative coping skills and lack of resources.¹¹

Available data show that the proportion of persons with schizophrenia living with their relatives ranges between 40 percent in the United States to more than 90 percent in China. The fact that in India over 90% of those who are mentally ill live with their families and are dependent on them has led to research into family burden, family interventions, expressed emotions, and more recently into support groups. This facilitates the extensive participation of families in therapeutic programmes.¹²

Families are often on the front lines of care for persons with schizophrenia. The role of a long term caregiver is accompanied by many burdens and family members are left emotionally depleted and desperate for help. They need support to best assist their ill family member and to cope with the stress associated with schizophrenia.¹³

Effective family psycho education includes empathic engagement, problem-solving, communication skills, social networking, education on clinical resources and ongoing support. Psycho education can be offered to patients, family members or both. Study results from more than 30 randomized clinical trials have shown reduced relapse rates, enhanced recovery, and improved family wellbeing.¹⁴ Family psycho education (FP) for schizophrenia refers generally to several different models of treatment in which the caregivers of a person with schizophrenia are active members and focus of interventions. This is because the caregivers play a significant role on the treatment outcome of the patients' illness. The FP aims at reducing re-hospitalization by adhering to the treatment. Also, it aims to reduce the distress faced by family caregivers, improve patient-family relations and communication patterns.

Care giving affects everyone associated with the patients. The care they provide is unpaid; often unrecognized and under supported. In most countries family care is the primary means of care giving with immediate or extended family rather than institutions. The Personal and Global Impact of Care giving is invisible yet valuable.

Total treatment costs in schizophrenia were significantly higher in those who were unemployed, those who visited the hospital more often and were more severely ill and disabled.¹⁵The evidence is compelling. India stands to lose US dollars 4,58 trillion before 2030 due to NCDs and mental health conditions, mental health conditions accounting to US Dollar 1.03 trillion.¹⁶

1.1:Need for the study:

There is high prevalence of psychiatric morbidity (18-20/1000) among general population. National Mental Health policy is emphasizing de-institutionalization of patients. There is lot of ignorance and misconceptions among the care givers of patients with schizophrenia causing relapse, readmission and revolving door phenomena.¹⁷The need expressed by families for more information and concrete advice about their relatives' illness and treatment.

In India there is limited number of mental health professionals and lack of mental health services. There are 47 hospitals with total number of beds around 10,329. Total number of outdoor cases of mental disorder treated in these hospitals during 2004 was 8, 96,425 which included 22,361 new cases.¹⁸

The close knit composition of Asian families also ensures a somewhat greater involvement of families in all aspects of the care of those with mental illness which virtually compels families to become sole caregivers. One way to achieve this objective could be to carry out formal family interventions which are culturally congruent, socially appropriate and economically viable.¹⁹ With these observations, it is felt necessary to explore the aspect of psycho education of care givers of patients with schizophrenia by undertaking this study. Intervention studies that have included family members demonstrate that these methods can lead to reduction in family burden, improved knowledge about schizophrenia and improved QOL. It also brings about changes in the emotional atmosphere of the family. This research study is significant in the context of current status of mental health services in India especially in a government hospital setup of Maharashtra.

1.2: Conceptual framework: Based on modified Imogene King's Goal Attainment Model, the investigator developed the conceptual framework of the present study.

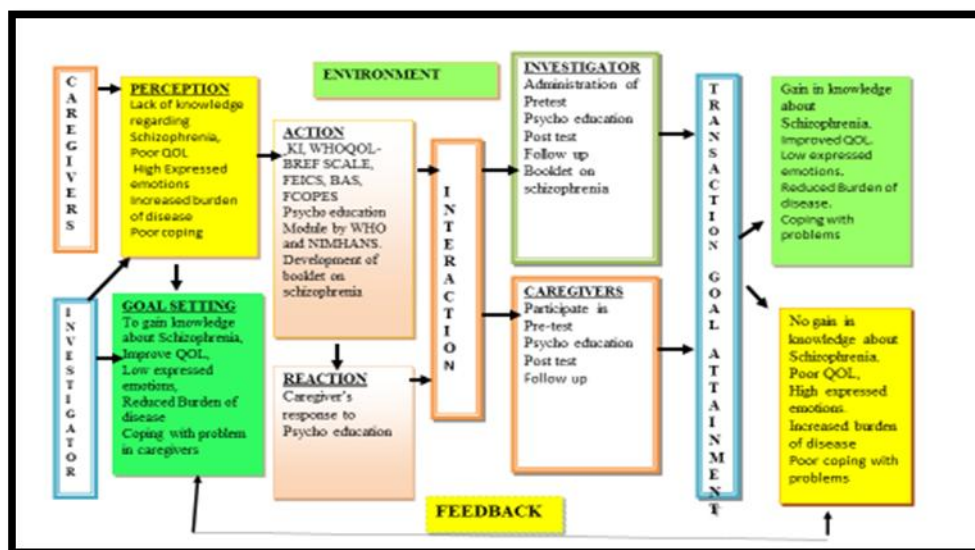


Figure: 1.1 Modified Imogene King's Goal Attainment Model.

II. Material and Methods

In view of the nature of the problem and to accomplish the objectives of the study, investigator selected quasi experimental study with pretest posttest control group research design to evaluate the effectiveness of family psycho education intervention based on the psycho education module by WHO/NIMHANS²⁰ on knowledge, QOL, EE, Burden of disease and coping strategies among caregivers of patients with schizophrenia. One hundred twenty caregivers of patients with schizophrenia from psychiatric ward of selected tertiary care hospital of Nagpur, India were chosen to participate between October 2014 and June 2016.

Table 2.1:Research design: Pretest- posttest control group research design

Group	Caregivers of patients with schizophrenia admitted in psychiatric ward of selected tertiary care hospitals of Nagpur city.
Pre-Test OC₁& OS₁	KI, WHOQOL-BREF Scale, FEICS, BAS, FCOPEs
Intervention X Only study group	<ul style="list-style-type: none"> • Psycho education on schizophrenia • Approach: Single family. Primary caregiver having maximum hours of contact with patient. • Visual Aid: Flash cards • Distribution of booklet in local language: Hindi and Marathi

Posttest after one month OC₂& OS₂	KI, WHOQOL-BREF Scale, FEICS, BAS, FCOPEs
Follow up after 3 months OC₃& OS₃	KI, WHOQOL-BREF Scale, FEICS, BAS, FCOPEs
Key :	OS ₁ - Pretest in study group OS ₂ . Posttest after one month in study group OS ₃ . Follow up after three months in study group OC ₁ . Pretest in control group OC ₂ -Posttest after one month in control group OC ₃ -Follow up after three months in control group X ₁ , X ₅ -Intervention Psycho education on schizophrenia

Table 2.2: Psycho education session plan

Days	D1	D3-4	D5-6	D7-8	D9-10	D30-33	D90-95
Study group	OS ₁ X ₁	X ₂	X ₃	X ₄	X ₅	OS ₂	OS ₃
Controlgroup	OC ₁					OC ₂	OC ₃

The investigator took a base measure before intervention and at one month and three months depicted as OC₁, OC₂, and OC₃ in the control group. It was depicted as OS₁, OS₂ and OS₃ respectively in the study group. In the present study KI, WHOQOL-BREF, FEICS, BAS and FCOPEs were administered to a sample of 120 caregivers of patients with schizophrenia, 60 each in the control and the study group individually. The intervention consisted of the psycho education in five sessions at two to three days apart in study group. Each session depicted as X₁, X₂, X₃, X₄, and X₅, comprising of 1 hour which included 45 minutes session and 15 minutes discussion using flash cards as visual aids with distribution of booklet to the individual family in local language. This was followed by posttest after one month and follow-up at three months after discharge in the study group. Results were analyzed by comparing the differences between pre and post family psycho education findings by KI, WHOQOL-BREF, FEICS, BAS and FCOPEs among the caregivers in the study group at one month and three months. The control group caregivers were also assessed at posttest after 1 month and follow up at three months. The findings of the control and the study group were compared.

2.3. Variables of the study:

2.3.1 Dependent Variables:

- Knowledge regarding schizophrenia, Quality of life (QOL). Expressed Emotions. Burden of disease and Coping strategies.

2.3.2 Independent Variable: Psycho education regarding schizophrenia

2.4 Setting

This study was conducted in psychiatric ward of selected tertiary care hospital of Nagpur which is a multi-speciality hospital with bed occupancy of about 1700. All types of patients are admitted in this hospital. It has most of the departments and speciality branches including psychiatry and psychology.

2.5 Population:

Caregivers of patients with schizophrenia were selected as population group who met with the inclusion criteria of the study.

2.6 Sample:

One hundred twenty caregivers of patients with schizophrenia attending their patients in psychiatric ward of selected tertiary care hospital of Nagpur during October 2014 to June 2016.

2.7 Sampling technique:

Purposive sampling

2.8 Sample selection criteria:

2.8.1 Inclusion criteria

- Caregivers of patients diagnosed as schizophrenia.
- Those between the ages of 18 to 65 years.
- Those having maximum hours of contact with the patients at home.
- Those able to comprehend intervention program and tools.
- Those not included in any other study.

2.8.2 Exclusion criteria:

- Caregivers having other family member with psychiatric illness and staying with caregivers.
- Those caregivers with chronic medical or psychiatric illness.

2.9 Sample size:

- Sample Size calculation was done by using nMaster version 2.0 sample size software .The sample size was estimated by considering power of 80% and alpha error of 5% allowing for 20 % attrition with ratio of control to study as 1.
- One hundred twenty participants were required, from which sixty were in control group and sixty were in study group.

$$\text{The formula used for sample calculation was } n = \frac{4pq}{d^2}$$

2.10 Data collection instruments:

These instruments were:

1. Socio-demographic data sheet of the caregivers for inclusion in the study and identification data.²¹
2. Knowledge Interview (KI) for knowledge assessment of the caregivers about schizophrenia²²
3. WHO Quality of life scale (WHOQOL-BREF) to assess the quality of life of the caregivers²³
4. Burden Assessment Schedule (BAS) to assess the Burden of disease on the caregivers.²⁴
5. Family Emotional Involvement and Criticism Scale (FEICS) to measure the Expressed Emotions of caregivers.²⁵
6. Family Crisis Oriented Personal Evaluation Scales (FCOPES) to assess the Coping Strategies of the caregivers.²⁶

Language validity of tools and Psycho education session contents:

KI, FEICS, BAS, FCOPES were standardized tools, they were translated and retranslated in Hindi and Marathi, local and regional languages, by the language and subject experts. The translated version was re-translated for language validity to English language. The items and instructions were unequivocal.

2.11 Data collection technique:

The sample comprised of one hundred twenty consenting caregivers of patients with schizophrenia from the psychiatric ward of selected tertiary care hospital of Nagpur during October 2014-June 2016 fulfilling the inclusion- criteria. Purposive sampling method was used to assort sixty caregivers each to either control or the study group by odd and even numbers respectively. The control group continued with routine care on inpatient basis.

The intake assessment scales were administered to obtain baseline evaluation of the patient and the caregivers in a single session. The study group was asked to attend five psycho education sessions at two to three days apart within a period of two weeks .The control and the study group participants were called for posttest after one month and for follow up at three months in two sessions.

2.12 Intervention protocol

Family psycho education intervention was administered to the study group caregivers after the intake assessment in 5 sessions 2-3 days apart. The caregiver was seen on the next day if a session was missed due to unavoidable reasons. However all the five sessions were completed within two weeks during the hospital stay of the patient and caregiver. Each of these five sessions lasted for about 45 minutes and were followed by 15 minutes of handling queries and discussion. The sessions had a lecture cum discussion format by using flash cards. Single family sessions were conducted.

The psycho education module used in this study was taken from a manualized intervention program developed by the Family psychiatry center NIMHANS/ WHO, Varghese, et al. . These sessions cover the areas of assessment of the family, education about schizophrenia, assessing and managing difficult problems, handling communications and emotions and follow up.

2.13 Outcome Measures:

- Knowledge about schizophrenia. KI,
- Quality of life of the Caregivers. WHOQOL-BREF
- Expressed Emotions FEICS
- Burden Assessment. BAS
- Coping FCOPES

2.14 Ethical considerations:

- Approval from Institutional Ethical Committee and the University was taken before conducting the research study.
- Permission from the administrative authority of the hospital was taken.

- Informed consent of the caregivers of patients with schizophrenia was duly taken.
- Assurance of confidentiality of subject and data was given.
- Freedom to dropout from the study as and when they wish to do so, was communicated to them.

2.15 Plan for data analysis:

- The present study analyzed the data based on the objectives. The data obtained from one hundred twenty completed forms, sixty from each group was analyzed using Epi info™ 7 and STATA 13.0 version statistical software.
- All study parameter scores were presented as Mean ± SD.
- Categorical data were expressed in actual numbers and percentages.
- For non-normalized data, median and range were calculated.
- Knowledge Interview score and other study parameters score were evaluated pretest, posttest and after follow up period by performing repeated measure ANOVA. Post Hoc comparison was carried out by performing Tukey’s multiple comparison tests.
- Changes in study parameters after posttest and after follow up between the control group and the study group were evaluated by Mann-Whitney Test.
- Categorical variables were compared by performing Pearson’s Chi² Test and p<0.05 was considered as statistical significance.
- One hundred twenty caregivers in both the groups were matched on gender, age, marital status, education, occupation and socio economic status.
- Assessment of pretest KI, WHOQOL-BREF, FEICS, BAS, FCOPES score among caregivers was done.
- Assessment of posttest and follow up KI, WHOQOL-BREF, FEICS, BAS, FCOPES score among caregivers was done
- Association was seen with caregivers’ post test scores of KI, WHOQOL-BREF, FEICS, BAS and FCOPES with selected demographic variables.

III. Observations and Results

The analysis and interpretation of the data of this study are based on the data collected from one hundred twenty caregivers of patients with schizophrenia, sixty from each, the control and the study group through standardized tools on knowledge Interview, WHOQOL-BREF, FEICS, BAS and FCOPES. The results were computed using STATA 13.0 version statistical software based on the following objectives.

3.1 Organization and presentation of data is done in seven sections:

Section I:Description of Socio demographic characteristics of the caregivers

Socio-demographic variables were similar in the two groups in terms of age, sex, marital status, religion, occupation, education, socio-economic status, relationship with patients, and average monthly family income of the caregivers and frequency of contact with the patient

Section II: Effect of family psychoeducation on the caregivers’ knowledge about schizophrenia

Table 3.1 : Item wise pretest, posttest and follow up KI score in the control and the study groupn=120

Item	Max. score	Control group n=60						Study group n=60					
		Pre test Mean score	SD	Post test Mean score	SD	Follow up Mean score	SD	Pre test Mean score	SD	Post test Mean score	SD	Follow up Mean score	SD
Diagnosis	4	2.26	0.66	2.36	0.51	2.36	0.51	2.26	0.66	3.11	0.61	3.11	0.61
Symptoms	4	1.71	0.45	3.41	0.49	3.41	0.49	1.71	0.45	2.08	0.42	2.08	0.42
Etiology	4	1.73	0.48	1.95	0.38	1.96	0.36	1.73	0.48	3.3	0.46	3.3	0.46
Course/ Outcome	4	2.33	0.62	2.33	0.62	2.33	0.60	2.33	0.62	3.31	0.56	3.31	0.56
Treatment	4	1.9	0.60	2.08	0.64	2.06	0.63	1.9	0.60	3.65	0.57	3.51	0.53
Total score	20	9.93	1.88	12.1 3	1.39	12.1 2	1.38	9.93	1.88	15.5	1.38	15.31	1.43

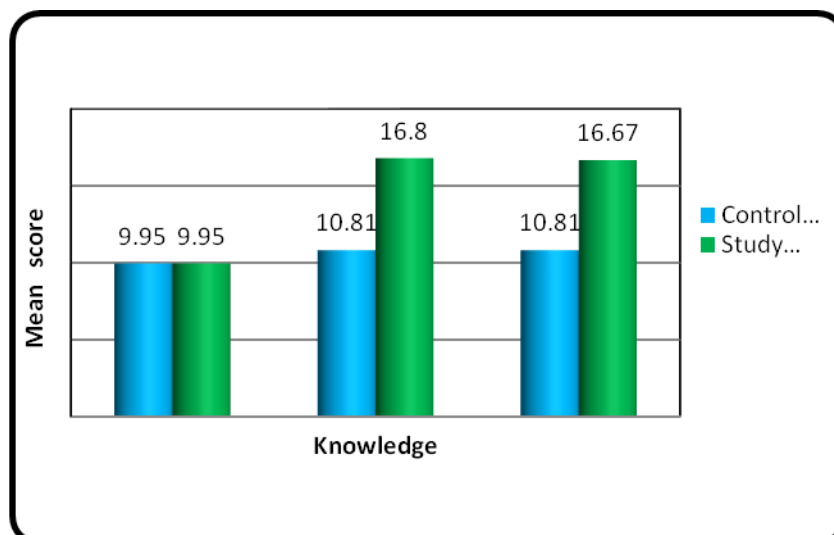


Figure 3.1: Total knowledge interview score at pretest, posttest and follow up among the control and the study group (n = 120)

Table 3.1 and Figure 3.1 show the Knowledge Interview score among the control group and the study group at pretest, posttest and at follow up. There is significant difference between the pretest, posttest and follow up mean knowledge score of the study group as compared to the control group with p-value < 0.005. This shows that there is marked improvement in the KI score of the study group caregivers after family psycho education on schizophrenia. Hence the null hypothesis (H_0) is rejected.

Section III: Effect of family psycho education on the caregivers' QOL.

Table 3.2 and Figure 3.2 depict the WHOQOL-BREF OAQOL mean score among the control and the study group at pretest, posttest and follow up. There is significant change in the study group WHOQOL-BREF Overall quality of life score with p<0.0052 This shows enhanced overall quality of life in the study group after family psycho education. Hence the null hypothesis (H_0) is rejected.

Table 3.2: Domain wise pretest, posttest and follow up WHOQOL-BREF score in the control and the study group (n=120)

Domains	Control group n=60						Study group n=60					
	Pre test Mean	SD	Post test Mean	SD	Follow up Mean	SD	Pre test Mean	SD	Post test Mean	SD	Follow up Mean	SD
Over all QOL	1.85	0.73	1.61	0.52	1.36	0.48	1.83	0.71	2.98	0.22	2.68	0.46
Overall POH	2.01	0.62	1.88	0.55	1.75	0.50	2.01	0.62	2.93	0.25	2.9	0.30
Physical	31.56	13.78	31.56	13.78	31.56	13.78	31.56	13.78	39.65	15.44	39.55	15.39
Psychological	23.4	11.45	21.76	10.19	21.76	10.19	23.4	11.45	48.25	12.75	48.06	12.11
Social relationship	21.86	15.06	20.41	13.31	20.14	13.31	21.86	15.06	45.78	16.73	45.78	15.13
Environmental	29.3	14.22	28.98	13.75	28.98	13.75	29.3	14.22	31.28	14.20	31.15	13.21

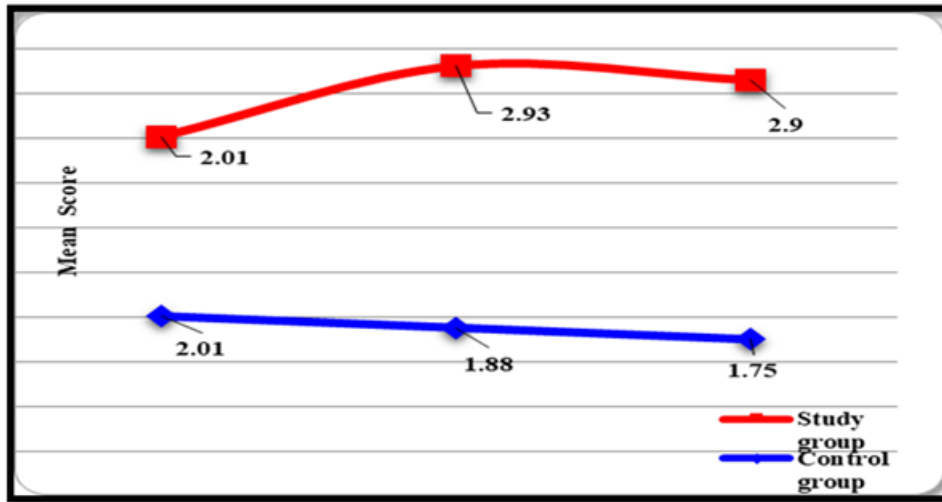


Figure.3.2 WHOQOL-BREF OAQOL mean score among the control and the study group at pretest, posttest and follow up.

Table 3.3: Subscale wise pretest, posttest and follow up FEICS mean score among the control and the study group caregivers n=120

Subscale	Control group n=60						Study group n=60					
	Pre Test Mean	SD	Post Test Mean	SD	Follow Up Mean	SD	Pre Test Mean	SD	Post Test Mean	SD	Follow Up Mean	SD
PCS	29.06	2.66	28.41	2.68	28.45	2.60	29.06	2.66	21.01	2.59	21.46	2.58
EI	28.75	3.31	28.11	3.24	28.38	3.11	28.75	3.31	21.0	3.28	21.81	3.34
Total score	57.81	4.75	56.52	4.60	56.83	4.39	57.81	4.53	42.01	4.59	43.27	4.56

Section IV: Effect of family psycho education on caregivers' Expressed Emotions.

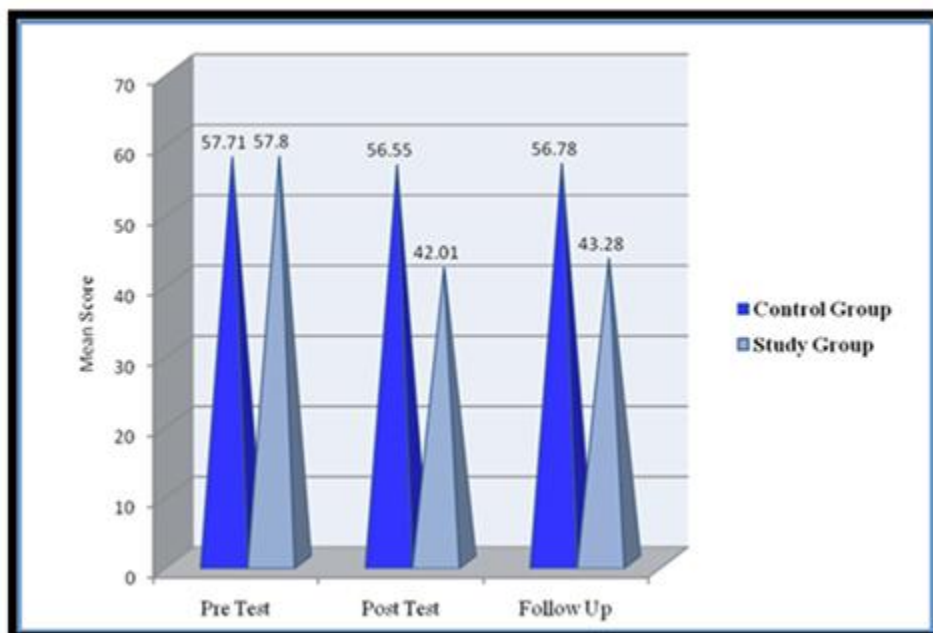


Figure 3.3: FEICS mean total score at pretest, posttest and follow up between the control and the study group

Table 3.3 and Figure. 3.3 depict FEICS total score among the control and the study group at pretest, posttest and follow up. There is significant change in the study group score at $p < 0.0001$ after family psycho education. Hence the null hypothesis (H_0) is rejected.

Section V: Effect of family psycho education on caregivers' Burden of disease

Table 3.4: BAS total mean score at pretest, posttest and follow up among the control and the study group(n=120)

Control Group n=60						Study Group n=60					
Pretest Mean	SD	Posttest Mean	SD	Follow up Mean	SD	Pretest Mean	SD	Posttest Mean	SD	Follow Up Mean	SD
90.25	9.50	89.45	9.28	89.0	9.13	90.25	9.50	68.55	12.57	68.1	12.53

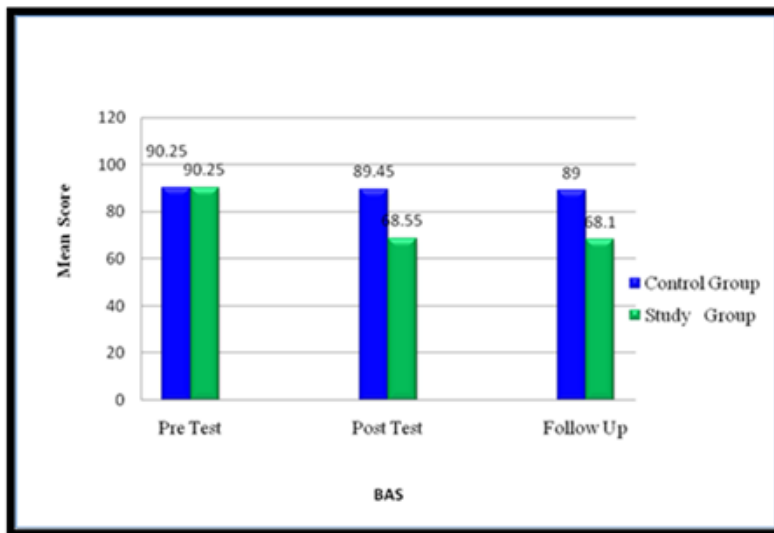


Figure 3.4: BAS total mean score at pretest, posttest and follow up among the control and the study group

Table 3.4 and Figure.3.4 depict BAS total mean score among the control and the study group at pretest, posttest and follow up. There is significant change in the study group score at $p < 0.0001$ after family psycho education. This indicates that in the study group there is decrease in the perceived burden of the disease after family psycho education. Thus the null hypothesis (H_0) is rejected.

Section VI: Effect of family psycho education on caregivers' Coping Strategies.

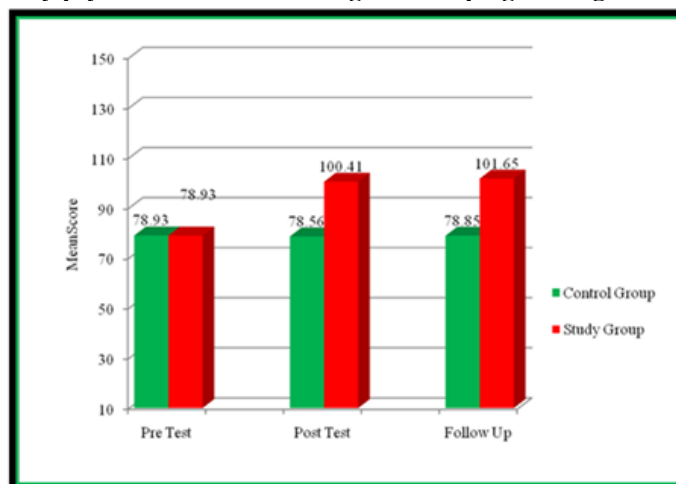


Figure 3.5: FCOPES total mean score at pretest, posttest and follow up among the control and the study group

Table 3.5.: Sub scale wise pretest ,posttest and follow up FCOPES mean score among the control and the study group n=120

Subscale	Control group n=60						Study group n=60					
	Pre test Mean	SD	Post test Mean	SD	Follow up Mean	SD	Pre test Mean	SD	Post test Mean	SD	Follow up Mean	SD
ASS	15.68	4.51	15.58	4.46	15.98	4.57	15.68	4.51	27.81	3.95	27.8	3.82
RF	22.43	3.72	22.4	3.82	22.56	3.77	22.35	3.54	23.46	4.43	23.46	4.25
MFAH	12.08	3.24	12.6	3.32	12.71	3.31	12.08	3.24	17.96	2.12	17.5	2.28
SSS	16.8	3.46	17.23	2.86	17.55	2.58	16.8	3.46	18.85	2.61	19.18	1.95
PA	12.26	2.67	12.73	2.74	13.13	2.66	12.26	2.67	13.35	2.52	13.58	2.47
Total score	79.25	8.77	80.54	8.73	81.93	8.93	79.17	8.77	101.43	8.77	101.52	8.50

Table 3.5 and Figure 3.5 show there was significant increase in the post and follow up score of FCOPES in the study group. There is significant increase in the post and follow up score of FCOPES in the study group. This shows effectiveness of Family psycho education among the study group in relation to coping strategies. Hence the null hypothesis (H_{01}) is rejected.

Section VII: Association between caregivers’ pretest, posttest KI, WHOQOL-BREF, FEICS, BAS and FCOPES scores and selected demographic variables. The data is presented in table 3.6

Table 3.6: Association between pretest and posttest Knowledge Interview score and demographic variables of the study group (n = 120)

Sr. No	Demographic variables	N	Pretest Mean	Posttest Mean
	Occupation			
	Unemployment/Retired	30	110.93	126.53
	Farmer/Shop owner	13	101.61	114.84
	Profession	2	115.5	136.38
	Semiskilled worker	5	86.4	96.8
	Skilled worker	3	97.0	112
	Unskilled worker	7	86.0	98.0
	F-value		2.53	2.76
	p-value		0.0394 S	0.0272 S

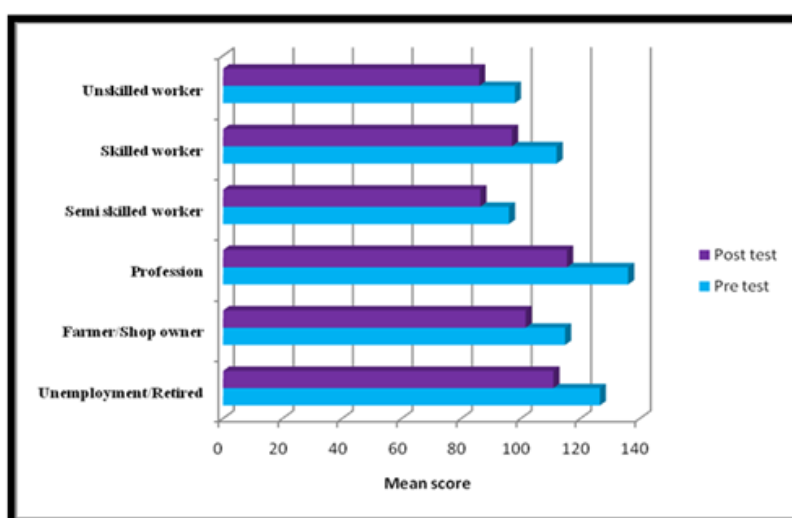


Figure 3.6: Association between posttest Knowledge score and occupation of the study group.

Table 3.6: shows the occupation as a demographic variable is found to have significant association with pretest and posttest KI score of the caregivers at p-value < 0.05. Caregivers in the profession had better pretest and posttest knowledge interview scores. Hence the null hypothesis (H_{02}) is rejected.

Table 3.7: Association between pretest , posttest BAS score and demographic variables of the study group (n = 120)

Demographic variables	N	Pretest Mean			Posttest Mean		
		Mild	Moderate	Severe	Mild	Moderate	Severe
Age							
< 40 yrs.	29	0	2	27	1	22	6
≥ 40 yrs.	31	0	3	28	2	28	1
p-value		0.642 NS			0.043 S		
Occupation							
HM/Unemployment/Retired	30	0	1	29	1	28	1
Farmer/Shop owner	13	0	2	11	0	13	0
Profession	2	0	1	1	1	1	0
Semi-skilled worker	5	0	2	3	0	4	1
Skilled worker	3	0	0	3	0	1	2
Unskilled worker	7	0	1	6	1	4	2
Chi2-value		9.3854			28.3782		
p-value		0.053 NS			0.004 HS		

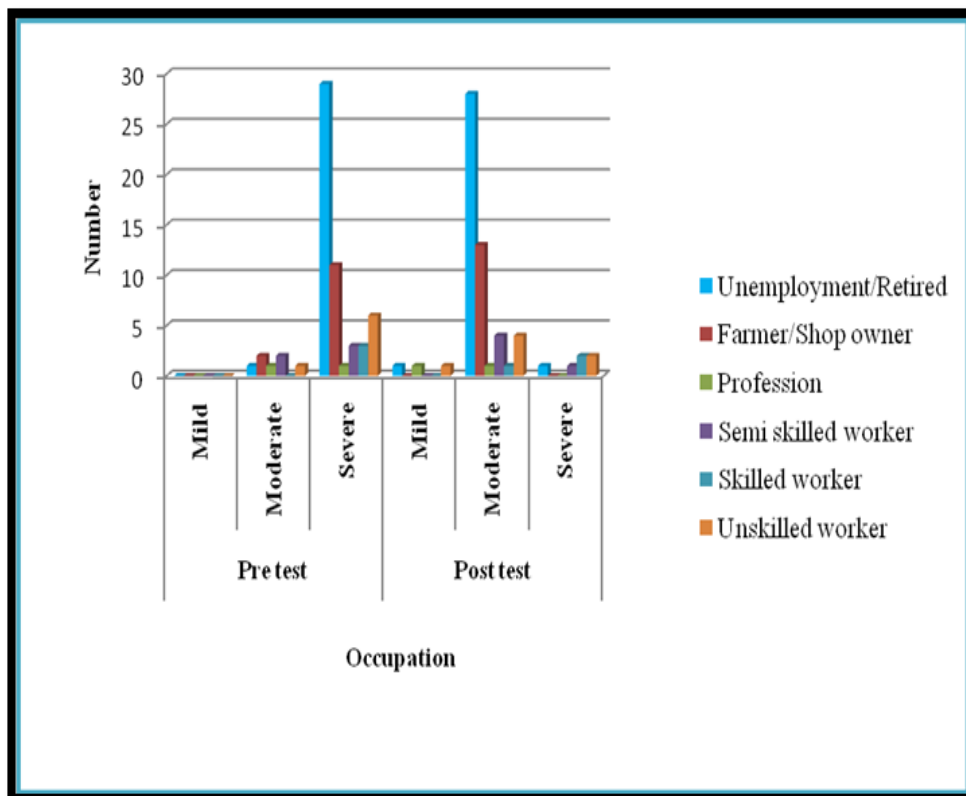


Figure 3. 7 Association between BAS posttest score and occupation of the study group

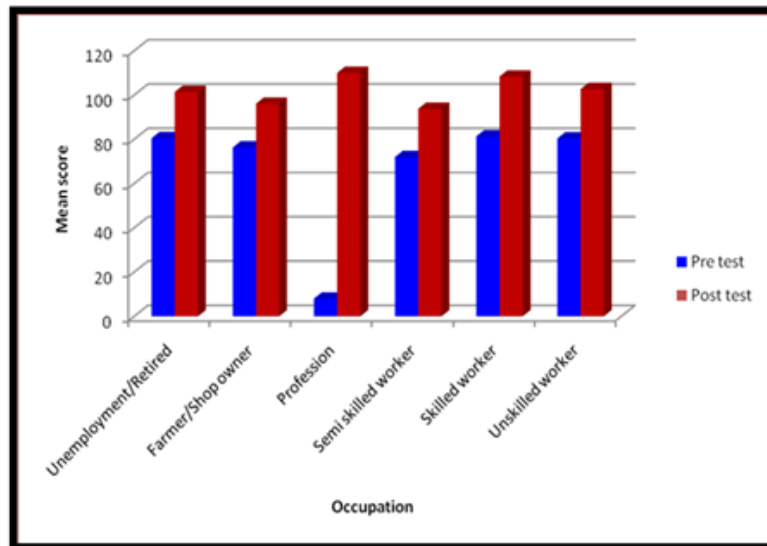


Figure 3.8: Association between posttest BAS score and socio economic status of the study group.

Table 3.7, 3.8 and Figure 3.7,3.8 depict that perceived burden of disease was high among the home makers, unemployed and retired caregivers. Caregivers below the age of 40 years had more perceived burden of disease. Perceived burden of disease was high among the home makers, unemployed and retired. Caregivers from upper lower class had higher burden of disease. Hence the null hypothesis (H₀) is rejected.

Table 3.9: Association between pretest, posttest FCOPES score and demographic variables of the study group (n = 120)

Demographic variables	N	Pretest Mean	Posttest Mean
Occupation			
Unemployment/Retired	30	80.5	101.43
Farmer/Shop owner	13	76.30	96.07
Profession	2	8	110
Semi-skilled worker	5	72	93.8
Skilled worker	3	81.33	108.33
Unskilled worker	7	80.42	102.71
F-value		1.17	2.68
p-value		0.3351 NS	0.0310 S

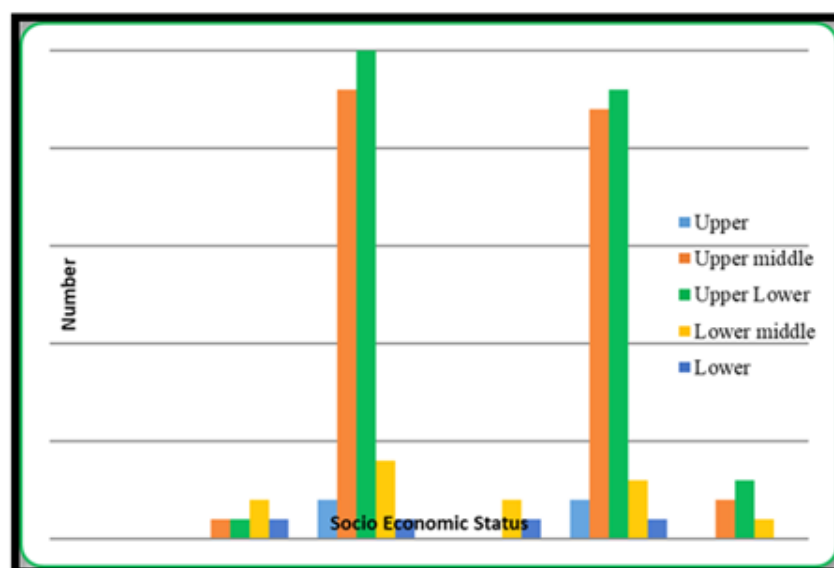


Figure 3.9 Association between FCOPES posttest score with occupation of the study group

Table 3.9 and Figure 3.9 show there was statistically significant association found between posttest FCOPEs score and occupation of the caregivers with p-value 0.0310. The caregivers in profession had better coping strategies. Hence the null hypothesis (H02) is rejected.

IV. Discussion

Regardless of language, culture or country, care giving has become everyday part of life for millions of people around the globe. It is invisible yet valuable care. It is essential that researchers around the world continue to explore the link between care giving and its impact on caregivers' emotional and physical health.²⁷

In case of mental disorders the family is considered as single unit with the patient. Caring for caregivers is essential. This study focused on the caregivers of patients with schizophrenia.

This was a quasi-experimental study recruiting one hundred twenty caregivers of patients with schizophrenia by convenient sampling method. It is comparable with previous psycho educational studies by Prema and Kodandaram²⁸ with sixty families in 1998 in India and by Kulhara et.al.²⁹ with seventy six family caregivers in 2009 in India.

4.1 The major findings of the study:

- Socio-demographic variables were similar in the two groups in terms of age, sex, marital status, religion, occupation, education, socio-economic status, relationship with patients, and average monthly family income of the caregivers and frequency of contact with the patient.
- The study group has shown enhanced knowledge about schizophrenia and its management. There was change in attitude with regard to the prognosis and future expectations from the patients.
- The WHOQOL-BREF score in the study group showed improvement in all domains except environmental domain at follow up after three months.
- The outcome of family psycho education program showed lowered Expressed Emotions (EE) in terms of Perceived Criticism and Emotional Involvement of caregivers with their patients.
- There was decrease in the overall burden score and severity of burden among the study group.
- The family psycho education program enhanced coping strategies among the study group. 'Seeking spiritual support' and 'Mobilizing family to accept help' was the strongest coping strategy while 'Reframing' was the weakest coping strategy.
- Findings related to the association between pretest and posttest KI, WHOQOL-BREF, FEICS, BAS and FCOPEs revealed significant association between Knowledge Interview posttest score and occupation. Among the study group caregivers in the profession had better knowledge score.
- Significant association was found between BAS posttest score and demographic variables such as occupation and socio economic status among the study group.
- Home makers, unemployed, retired and those from upper lower socio economic status had highest perceived burden of the disease.
- Significant association was found between FCOPEs posttest score and occupation among the study group. Caregivers in the profession had better coping strategies.

The results of Mann Whitney Z test for pretest-posttest and follow up comparison of knowledge interview score of the control and the study group caregivers show the p- value of KI score in all items among the study group caregivers at posttest and follow up was < 0.0001 which is statistically significant. Thus it indicates family psycho education is significantly effective in improving the knowledge of caregivers regarding schizophrenia.

Similar findings were reported in the systematic review reporting 44 research studies. Psycho education was found to be consistently effective in improving family members' knowledge, coping strategies and should be routinely provided to family members as early as possible following contact with health services.³⁰

The previous randomized controlled trials by Andreica-Sandica of family intervention in schizophrenia report that family programs involving group approach might show nonsignificant positive effect on duration and rates of patient readmission when compared both with standard care and with other single modalities. The single family intervention usually provides individualized psychological support for family members in terms of information on the mental illness, patient management and coping with the illness and its symptoms. It also provides information on how to identify and solve the specific health problems and the needs of an individual family accurately.

These findings are in consonance with that of Moller-Leimkuhler,³⁰ who reported significant improvements in wellbeing, self-rated symptoms and subjective quality of life in two thirds of the relatives of patients with schizophrenia after psycho education.

Foldemo et.al.³¹ have found that parents of patients with schizophrenia were significantly less satisfied with their overall quality of life. Result indicates that caregiving can influence the family situation.

This is comparable with the findings in the study of Cohen et.al³² who reported reduced level of expressed emotions of the caregivers with the implementation of family psycho education. In the study of Holmes et. al. they found that awareness about the disease and social functioning increased and the high level of expressed emotion of the family decreased. Similar findings were reported by Jose Gutierrez-Maldonado, Alejandra, and Caqueourizar³³ in developing Latin American country on 45 caregivers of patients with schizophrenia with weekly psycho education for 5 months and found significant reduction on burden of disease. Many studies including by Creado et.al.³⁴ also found that better coping mechanisms such as problem solving can decrease the burden of illness on caregivers and may even improve the level of functioning of patients. The effectiveness of intervention has been demonstrated in a study by Magliano et al.³⁵ who found that the provision of psychoeducational intervention was associated with a statistically significant improvement in family burden and coping strategies.

There was statistically significant association found between the knowledge interview posttest score with the occupation. Caregivers in the profession had better knowledge score at posttest with p-values < 0.05. There was statistically significant association found between the BAS posttest score with occupation and socio economic status of the study group. Caregivers those who were home makers, unemployed or retired and caregivers from upper lower socio economic status had highest perceived burden of disease with

p-value < 0.05. Statistically significant association was found between FCOPES posttest score with occupation of the caregivers with p-value 0.0310 .The caregivers in profession had better coping strategies.

There was no significant association found between WHOQOL-BREF OAQOL, OAPOH and FEICS posttest score and selected demographic variables of caregivers.

4.2 Limitations of the Study:

It was limited to the caregivers who were attending the psychiatric wards of selected tertiary care hospital of Nagpur, which may not be the true representative of the entire population of the caregivers. Confirmation is therefore needed for more diverse and large group of caregivers with further longitudinal follow up. Self-reporting has its own limitations due to the element of subjectivity. The personal nature of the questions may make the caregivers reluctant to answer fully.

V. Conclusions

This study was conducted with the aim of examining the effects of family psychoeducation in caregivers of patients with schizophrenia, with regards to the effect of family psychoeducation on caregivers' knowledge, QOL, expressed emotions, burden of disease and coping with further exploring the association with caregivers' socio demographic variables.

The study group were administered Knowledge Interview (KI), WHOQOL-BREF scale, Family Emotional Involvement And Criticism Scale (FEICS), Burden Assessment Schedule, (BAS), Family Crisis Oriented Personal Evaluation Scale (FCOPES) at intake, after one month and three months.

Intervention was done in the form of family psycho education of the study group in five session of one hour each, 2-3 days apart, using Family psycho-education module developed by NIMHANS/ WHO using flash cards as visual aids and by distribution of booklet. Mean scores and SD for all the variables were obtained for both the groups at intake, after one month and after three months. Statistical analysis was carried out using Epi infoTM 7 and STATA version 13.0.

This study advocates that psycho education should be routinely provided to the caregivers of patients with schizophrenia as early as possible following contact with health services. Suggestions are made for optimal psycho educational intervention design and its successful implementation in the clinical area.

Acknowledgement

Our gratitude goes to the patients and caregivers without whom this research project could not have been completed. Our sincere thanks to Dr. S. Saxena, Director, Department of mental health and substance abuse, WHO, Geneva, Switzerland for permitting us to use the WHOQOL-BREF scale in Hindi version. Our special thanks to the Dean, Heads of department and Nursing staff of selected Government Medical College of Nagpur for granting permission and extending support to conduct this study. The authors sincerely extend thanks to Dr. Anagha Nasery, Head of the department of statistics, Dharampeth M.P.Deo Memorial Science College, Nagpur and Mr. Suresh More, Assistant Professor cum Statistician, Department of Community Medicine, Government Medical College and hospital Nagpur for all the statistical support.

Financial implications: Self-funded.

Conflict of interest: None

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Dr. Bharati Suresh Batra “Effect of family psycho education on Knowledge, Quality of Life, Expressed Emotions, Burden of Disease and coping among caregivers of patients with schizophrenia”. *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, vol. 17, no. 8, 2018, pp 59-73.