

## Impact of psycho educational program on burdens among family caregivers of schizophrenic patients

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**Abstract:** Majority of family caregivers caring for patient with chronic schizophrenia, face a lot of stressors not only due to provide the core long-term assistance of housing and financial aid but related to their roles in caregiving as informal case manager, crisis intervention specialist, and “invisible” rehabilitation person . The aim of the study was to investigate the effect of designed psychoeducational program on improving patient symptoms and reducing caregiving burdens among family caregivers with chronic schizophrenic Patients. The study was conducted in out patient department at Abassia hospital, four developed tools used to collect data, sociodemographic and medical data sheet, and assessment of negative symptoms for schizophrenic patient, sociodemographic data sheet for caregivers, and tool to measure burdens among caregivers, quasi-experimental design(pre ,post and follow up test) was used in this study ;the researcher selected 40 chronic schizophrenic patients with their family caregivers, based on inclusion and exclusion criteria for both, and with random assignment the sample divided into the control and the experimental group, 10sessions(one session every other week) were done in this program for study group for 45-60 minute for each one . The main results revealed that there were no statistically significant differences among groups; the designed program had an effective impact on reducing caregivers burdens in relation to recreational family activity, family interaction within and out side the family, physical health and psychological health of the family members. In addition, family burden decreased in relation to the improvement of patient's symptoms. This study concluded that, When relatives of patients with schizophrenia have enough knowledge and efficient skills to deal with patient problems, it is possible for burden to be reduced and improve patient symptoms. The study recommended further follow-up of the participants will be conducted after 24 and 36 months to assess sustainability effect of the program.

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**Keyword:** psychoeducational program, negative symptoms of schizophrenia, family caregiver, burdens.

### 1. Introduction

Schizophrenia is a serious and chronic mental illness, causing severe stress for those affected persons and their family members caring for them and most schizophrenics experience the illness as episodes of relapse between remissions (**Pollio, et al 2006**). Thus, patients lack social and cognitive skills and are unable to adequately fulfill their roles in society for individuals at their age, Therefore, by choice or by necessity, families members, especially mother or wife, have taken on the responsibility of caring and providing support for those relatives, are often inadequately prepared to be the main caregiver for the ill relative (Dixon et al 2001).

With the current emphasis on community care for mentally ill patients, family intervention, especially using a diverse range of modalities and a group format, could help the caregiver to satisfy their informational needs (Gümüş 2008) and develop a variety of coping strategies ensuring effective care is

provided for a relative with schizophrenia, and thus patient relapses are ultimately reduced (Chien, Chan, &Thompson ,2006).

Caregivers burden as a result of caring, estimate the impact of patient symptoms on family life – on work, leisure, income, children, neighbours, interpersonal relationships within the family, type of care received, and effects of abnormal behaviour .In addition to negative impact of stigma associated with mental illness (Pai,& Kapur 1981).

### Significance of the Study :

Based on Abbassia Medical Record (2010) out patient clinics received monthly from 1600 to 1720 schizophrenic patient with their caregivers for follow up. Also recent researches recorded that about more than two- third of the patient lived with their families and depend on them for majority of their care .while in Arab country, majority of patient lived with and cared for by their family members..

When the caregivers develop and maintain successful management skills for patients symptoms and enhance effective coping methods, it minimizes their burdens, reducing patient hospitalization and relapse rate for schizophrenic patient. Therefore, the psychiatric nurse should motivate the caregivers of schizophrenic patients and their ill relative to increase their knowledge and skills in dealing with patient symptoms.

### **Aims of the study:**

**The aim of this study** has four folds:

- 1-To assess the levels and types burdens among family caregivers of patient with chronic Schizophrenia.
- 2-To design a structured psychoeducational program for reducing burdens among family caregivers of patient with chronic schizophrenia.
- 3- To implement a psychoeducational program for reducing burdens among family caregivers of patient with chronic schizophrenia.
- 4 To evaluate the effectiveness of the designed program on reducing burdens among family caregivers of Patient with chronic schizophrenia.

### **Main Hypothesis**

Family caregivers of chronic schizophrenic patient who receive a designed psychoeducational program have lesser burden and improve patient negative symptoms than those who do not.

### **Sub- Hypotheses:**

- H1-1 Family caregivers of schizophrenic patient are suffering from different types of burdens.
- H1-2 Total mean post-test burdens scores of the study group subjects will be lower than those of pretest – scores.
- H1-3 Total mean burdens scores of the study group subjects after two month will be the same as those of their post –test mean score.

## **2. Subjects and Methods:**

### **Design:**

A quasi experimental research design was utilized to compare between caregivers of schizophrenic patient who attended out patient clinics with their relatives for follow up, in relation to their perceived burdens as a result of caring for their schizophrenic patients at home.

### **Setting:**

This study was conducted in out patient department at Abbassia hospital for mental health.

### **Subjects:**

A sample of convince of 40 schizophrenic

patient with their caregivers, selected based on inclusion and exclusion criteria. Patient diagnosed as having schizophrenia as per the ICD-10 criteria, were selected from the out patient clinics to be included in this study and they met the criteria of inclusion as well.

### **Ethical consideration**

Ethical approval and access to the study venue were obtained before beginning the study <sup>after</sup> completion the program <sup>from</sup> the Clinical Research Ethics Committee of faculty of nursing – Cairo University. An official permission was taken from director of Abbassia mental hospital and from director of out patient department to conduct the study in out patient clinics.

### **Procedure**

The researcher assured voluntary participation, anonymity and confidentiality and oral consent were given from the schizophrenic patient and their caregivers to the researcher before inclusion in the study then written consent from them for participation in the research..

The researcher was not involved in the randomization of caregivers and their relatives. Tool to assess of negative symptoms of schizophrenia was utilized with assistance of psychiatrist. The pre-assessment questionnaire was completed by all participants (study and control) at the same time.

The researcher contacted the subjects individually and started to explain the purpose and the nature of the study to them to gain their acceptance and cooperation.

The sample was randomly divided into the control group, in which caregivers attended with their relatives with schizophrenia for follow up (A monthly meeting with researcher ), and an experimental group, which participated in a family psycho educational intervention program in addition to the routine care. Medication of patients in both groups remained unchanged.

All participants enrolled in the study received routine care for patient with schizophrenia at out patient department in Abbassia mental hospital. Services provided under routine care included follow up for cases, monthly medication management, and crisis services as needed.

All subjects, were assessed at baseline, after completed the intervention, and followed up after 2-month post-intervention.

### **Tools of the study:**

To achieve the aim of this study, The following study tools were constructed and utilized by the researcher after reviewing the related literature , tested for content validity and reliability , and piloted

to collect data pertinent to the study.

#### **Tool (1) Socio demographic and Medical Data Sheet For Patient.**

It was designed by the researcher and included patient age, gender, level of education, marital status, number of hospitalization in last two years, duration of illness, current signs and symptoms, and current antipsychotics medication.

#### **Tool (2) sociodemographic data sheet for family caregivers:**

It was designed by the researcher and include caregiver age, gender, level of education, marital status, duration of caring, and degree of relationship to the patient.

#### **Tool (3) family Burdens Assessment Sheet:**

This sheet Adopted from Pai, and Kapure (1981) and irrelevant items were excluded, to assess the burdens of caring placed on family caregivers of mentally ill patient living in the community. It consists of 19 items, grouped into six categories, includes effect on all aspects of family dimensions: family finance, routine family activity, leisure family activity, interaction within family members, physical health status and mental health status. The content validity of the tool after modification was checked by three experts in the same field. The items are rated on a 3-point Likert-type scale, ('1' - mild burden' and '2' - moderate 'burden' and '3'- severe burden). An overall score was obtained by adding the items, producing a scale that ranges from 20(lowest burden level) to 60 (highest burden level). Reliability coefficient of tool was assessed as  $r = .92$ .

#### **Tool (4): Assessment of Patient Negative Symptoms Tool:**

After reviewed the related literature of Andreasen, (1986), Hooley, Campbell (2002) and Lehman, Kreyenbuhl, Buchanan, et al, (2004), the tool was developed by the researcher to assess patient negative symptoms of schizophrenia as apathy, alogia, avolition, attention impairment and asociality. These five separate global ratings were summated for a total score for negative symptoms. Reliability correlation of these items had been reported as  $r = .87$ . The items of this tool were rated on 5-point likert scale ranging from may be (1) to severe (5). The total higher scores indicating severity of patient symptoms and negatively reflects on the family.

#### **A designed psycho educational nursing program:**

Family caregiver as a primary resource for adults

with mental illness, yet they often lack the knowledge and skills needed to assist their mentally ill relatives. This psychoeducational program consisted of 10 sessions. These sessions were held once every other week (duration of patient follow up in out patient clinic).

The purpose of the program was to provide families with the knowledge of the mental illness in general and schizophrenia in particular, its treatment as well as mental health services, help caregivers with needed skills to overcome negative symptoms of schizophrenia, deal with stigma of mental illness, encourages the utilization of the social resources available and the employment of more frequently active and interactive help-seeking coping strategies.

#### **Statistical Analysis**

##### **Descriptive statistics:**

Quantitative variables were summarized using number of observations, the mean as a measure of central tendency, and the standard deviation as a measure of dispersion.

##### **Analytical statistics:**

Covered three periods: baseline, six month (finished of the program) post randomization, and two month later of finished program. Demographic differences between the two study groups were assessed by an independent sample t-test two-tailed. Comparison of means of the pre and post-test measurement scores between the two groups, using a paired-tail (t-test).

Repeated-measures multivariate analyses of variance test (ANOVA) were performed for the dependent variables to determine whether treatment produced the interactive effects postulated (group x time).

### **3. Results:**

#### **1-sociodemographic data for caregivers:**

Table (1) showed caregivers characteristics according to their age, gender, educational level, degree of relation patient, and duration of caring. The age of the caregiver ranged from 20-49 years old. The mean age of the control group was  $x = 35.35 + 3.12$ , the mean of the study group was  $x = 32.56 + 4.24$ . It was found that there was no significant statistical differences between two groups in relation to age ( $x = 3.1$ ;  $p = .07$ ). In control and study group, 4 (20%) of sample were males caregivers and 16 (80%) were females caregivers.

In relation to educational level, table (1) shows that, There was no significant statistical differences between the two groups ( $x = 1.09$ ;  $p = 0.7$ ). While "Degree of caregivers relation to their schizophrenic relatives" were 70% female of first degree

relationship in control group. In the study group 65% were female of first degree relation.

Regarding "Duration of caring to their ill relatives", the mean score of control group was

( $x=3.68+0.29$ ) and the study group was ( $x=4.33+0.60$ ). It was found there was no significance statistical differences between the groups in relation to duration of caring ( $x= 6.22$ ;  $p=0.09$ ).

**Table (1): Caregivers characteristics according to their age, gender, educational level, degree of relation patient, and duration of caring.**

Items	Control group( n=20)		Study group(n=20)	
	No	%	No	%
<u>Age/ year:</u>				
20-29	4	20	6	30
30-39	11	11	8	40
40-49	5	5	6	30
	$x=35.35+3.12$		$x=32.56+4.24$	
<u>Gender :</u>				
-Male	4	20	4	20
-Female	16	80	16	80
<u>Educational level:</u>				
-Read and write	2	10	3	15
-Primary school	2	10	2	10
-Preparatory school	7	35	6	30
-Secondary school	8	40	6	30
-university	1	5	3	15
<u>Caregiver relation to patient:</u>				
*Female – first degree.	14	70	13	65
**Female second degree	2	10	3	15
***Male –first degree	4	20	4	20
<u>Duration of caring:</u>				
2- <4	7	35	12	60
4-<6	6	30	5	25
6-<8	5	25	2	10
8+	2	10	1	5
	$x =3.68+0.29$		$x=4.33+0.60$	

\* Female First Degree Like: Mother, Sister, Wife, and Daughter.

\*\* Female Second Degree Like: Aunt, Niece, and Mother in Low.

\*\*\* Male First Degree Like: Father, Brother, Son, and Husband

## 2-sociodemographic and medical data for schizophrenic patients:

**Table (2)** shows schizophrenic patients characteristics according to their gender, age, marital status, and number of patient admission in last two years.

Regarding gender of schizophrenic patients, as In control group 55% of patients were males, and 45% were females. While in the study group, 50% was males and the same percent were females. The age of the patient ranged between 20 -50 years old. The mean age of control group was ( $x=28.24+3.83$ ). In the study group, the mean age was ( $x= 26.55+2.16$ ). It was found that there was no significance statistical differences between two groups in relation to age ( $x =27. 9$ ;  $p=0.7$ ).

As regard "marital status" of schizophrenic patient, in control group 55% of patients were divorced, and 25% were singles. While in study group 45%were divorced, 30% were married, and 15%were singles. In relation to "duration of illness" of schizophrenic patient, the mean score of control group was ( $x= 6.04+2.08$ ). While for the study group, ( $x=5.17+3.67$ ).it was found no significance statistical differences was found between two groups in relation to duration of illness ( $x=5.3$ ;  $p 0.06$  ).

According to the number of patient admission in last two years, It was found that there was no significance statistical difference between both group in relation number of hospitalization in last two years ( $x=2 .7$  ;  $p= 0. 06$  ).

**Table (2) Schizophrenic Patient characteristics According To Their Age , Gender, Marital Status, Illness History , And Number Of Admission In Last 2 Years.**

Items	Control group (n= 20)		Experimental group (n=20)	
	Number	percent	Number	percent
<u>Age/ years:</u>				
20-29	13	65	10	50
30-39	3	15	6	30
40-49	4	20	4	20
	$x=28.24+3.8$		$x= 26.55+2.16$	
<u>Gender:</u>				
Male	11	55	10	50
- Female	9	45	10	50
<u>Marital status:</u>				
Single	5	25	3	15
Married	4	20	6	30
Divorced	11	55	9	45
Widow	1	5	2	10
<u>Illness history :</u>				
< + 10	6	30	5	25
8-	1	5	4	20
6-	6	30	7	35
4-	5	25	1	5
2-	2	10	3	15
	$x=6.04+2.08$		$x=5.17+3.67$	
<u>Number of pt admission in last 2 years:</u>				
-No	3	15	9	45
-One time	11	55	2	10
-Two time	1	5	6	30
-Three time	5	25	3	15
	$x=2.89+1,31$		$x=3.62+2.01$	

### 3- Assessment of the studied caregivers burdens Scores at pre, post and follows up the program.

Table (3) figure (1): Assessment of Outcome Scores of caregivers burdens, at Time 1, 2 & 3 and ANOVA test

Regarding the base line assessment, there were not statistically significant differences among the control and the study group. A significant statistical difference were found between pre and post program for the study group assessment regarding to, "recreational activity" (  $t=3.50$ ;  $p<0.002$ ), "effect on family interaction"(  $t=2.75$  ;  $p <0.04$  ), and "caregivers physical health" (  $t=2.08$ ;  $p< 0.03$ ) and "caregiver psychological health" (  $t=3.79$ :  $p 0.04$  ).also there were no statistically significant differences in scores of burdens between post and follow up among study group.

### 4-Assessment of patient negative symptoms

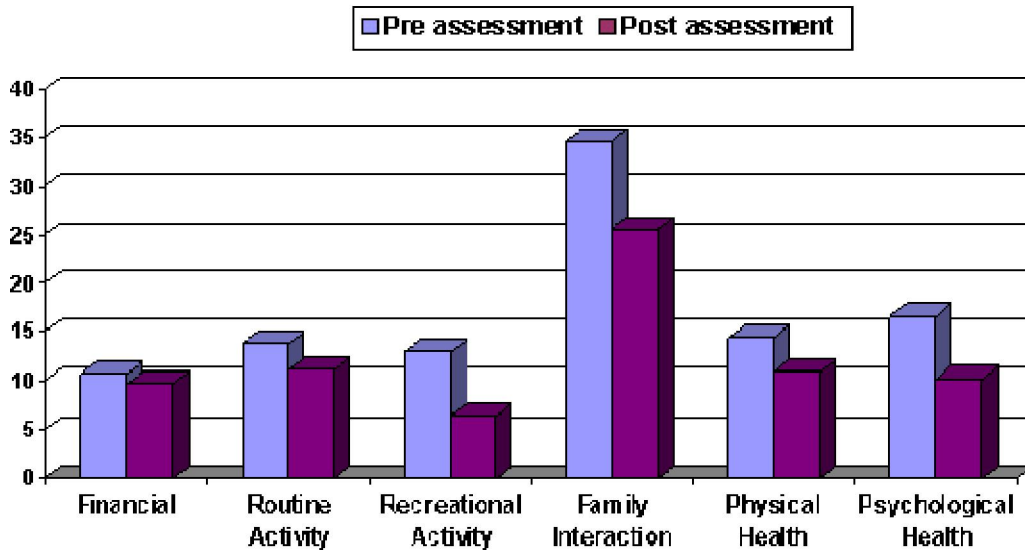
#### Scores:

Table (4) , figure (2) Assessment of negative patient symptoms scores, at time 1, 2 & 3 and ANOVA test.

At the base line of assessment, there was a statistically significant difference between control and study groups in relation to "patient avolition", as ( $t=3.19$ ;  $p< 0.04$ ), while other negative patient symptoms were not statistically significantly differences. While post program, there were a significant statistical differences between control group and study group assessment in "Avolition" (  $t= 2.08$ ;  $p< 0.02$ ), and "Asociability" (  $t=2.29$ ;  $p<0.04$ ). Also there were no statistically significant differences in scores of patient negative symptoms between post and follow up among study group.

**Table (3): Assessment of caregivers burdens Scores at Time 1, 2 & 3 and ANOVA test (Group x Time)**

Instrument	Study Group (n = 20)						Control group (n = 20)					
	Time 1		Time 2		Time 3		Time 1		Time 2			
	M	(SD)	M	(SD)	M	(SD)	M	(SD)	M	(SD)	F	df
<b>Family burden</b>												
Financial burden	10.65	0.67	9.70	0.53	8.90	1.52	11.05	0.83	13.90	0.551	43.66	4.09
Family routine	13.90	1.68	8.05	0.76	9.15	1.50	14.25	1.52	11.99	1.66	59.20	8.28
Leisure	13.00	1.87	6.30	0.46	6.00	0.94	14.00	1.12	13.20	1.86	12.73	1.51
Interaction	34.65	6.21	18.55	1.05	19.06	1.63	36.95	6.53	10.70	1.30	173.88**	20.19
Physical health	14.45	1.72	8.90	1.46	8.15	1.34	14.05	1.89	12.85	2.50	121.00*	35.79
Mental health	16.60	3.38	10.20	1.74	13.00	1.65	19.20	2.90	16.70	1.56	188.15**	68.53



**Figure (1) Comparison between Pre and Post assessment in Study Groups In Relation To Caregivers Perceived Burdens**

Table ( 4) assessment of negative patient symptoms scores at interview time points and results of ANOVA test For study and control group participants

Negative patient symptoms	Study Group T1		T2		T3		Control Group T1		T2		F	df
	M	SD	M	SD	M	SD	M	SD	M	SD		
1-Apathy	8.90	3.37	7.35	2.02	8.01	2.05	9.40	3.70	10.82	3.68	84.04	52.42
2-Avolition	22.50	6.60	14.75	1.94	15.63	1.94	26.40	4.95	25.75	2.37	47.01*	40.63
3-Asociability	12.90	4.41	10.16	2.17	12.07	2.84	13.45	2.50	12.55	2.83	14.16**	6.62
4-Alogia	11.44	3.09	11.94	3.51	12.01	2.57	15.47	3.45	10.76	2.89	15.23	3.98
5-Attention-impairment	14.86	5.12	12.17	2.43	10.96	1.89	13.99	6.09	12.00	4.41	23.03**	12.57

\* $p < 0.001$

\*\* $p < 0.005$

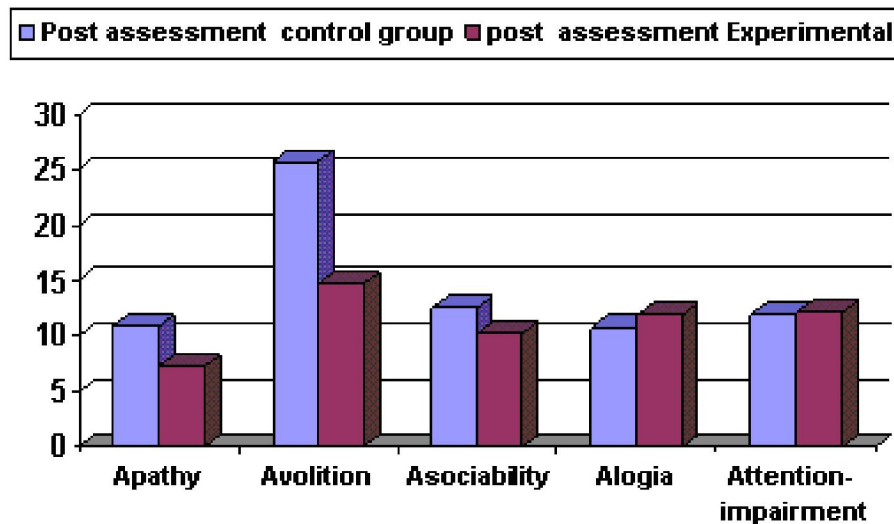


Figure (2) comparison between post assessment of negative Patient Symptoms in control and study group ( time 2)

#### 4. Discussion

Studies have indicated that there is a severe burden imposed upon the whole family when caring for a patient with schizophrenia, because of unpredictable and bizarre behavior, external stressors of stigma and isolation, family conflict, emotional frustration and burnout. In this respect, findings of the study revealed that there was no significant statistical differences between score of pre assessment of the control and study group in relation caregivers perception of burden ( table 3). These findings indicates that both group has the

same base line assessment of caregivers burdens and they have the same rating of experiences with their relatives.

The present study indicated statistically significant decrease in scores of caregivers burdens between pre and post study group in relation to recreational activity, effect on family interaction, physical and psychological health of the caregiver.

These results might be attributed to the strong desire of the participants to receive the needed information about their relatives' illness, also the lack of caregiver skills to handle patient problems, allowing more interaction between each others and



sharing experiences, in addition to giving chances to express their held feeling related to care giving duties and burdens. Also El-Shafei , Kamel, Criag et al ., (2002): added that educating the caregivers about negative symptoms reduces the family's tendency to criticize the patient behavior , which in turn encourages social engagement.

These results were consistent with (Roick et.al. 2006) and(Khashaba, Sherra., Shalendah and Abdel-Hameed(2007) who found that significant decrease in family burden in terms of daily life activities, interactions with patient, and mental health after attending educational program . they added the role of limited social networks of the family members due to the disruption of social and leisure activities as well as to the stigmatization that often occurs hand-in-hand with a diagnosis of mental illness within and out side family members .

In the same dimension, (Awad & Voruganti,2008) emphasizes on the role gender of the career and duration of caring as most critical factor in increasing rate of depression by about 60% in the caregivers ,due to poor socialization with others, in addition to lack of social and working support, course of the disease, and major disruptions in family life, therefore all these factors were associated with a considerable negative effect on physical and psychological health of the caregiver .

Also ( Pharoah, et. al.2006) suggested that family members who do not understand relatives'behaviors, such as hostility, apathy, and social withdrawal,are falsely attribute these behaviors to negative aspects and react more negatively, criticize to their ill relatives .

The current results revealed no statistically significant differences between scores of post and follow up of the study group. These results indicated that the program had a sustained effect on the participants, because teaching and practicing new helpful skills with the caregivers as problem solving and communication skills in managing patient problems and demands of burden had positive effect and minimize tension, and distress among patients and their relatives, so they repeated practicing.

The present study revealed significant decrease in patient negative symptoms scores between pre and post assessment of the study groups in relation to negative patient symptoms as " Avolition " ( $t= 10.19$ ;  $p< 0.03s$ ), and "Asociability " ( $t=3.37$  ;  $p<0.01$ ). These results can be interpreted as program had significant effect on improving caregiver information related to medication compliance, how to manage side effects of psychotropic medication, and early detection of relapse signs , so the caregiver become more aware of patient behavior .

In this respect , (Gümüş ,2008) Proved that family group intervention was associated with reduced negative symptoms and reduced use of psychiatric services after one year.

Regarding these results, ((Magliano,& Fiorillo 2007 )) reported that medication compliance as one variables of treatment adherence of family intervention were positively contributed to negative symptoms of schizophrenia, where schizophrenic patient with compliance on medication, became actively involved in psychosocial rehabilitation and become more sociable in living in the community.

Hoening,& Hamilton (1966):suggest that caregivers of schizophrenic patients contribute negative symptoms , such as apathy, social withdrawal, and poor personal hygiene, to be more controllable by the patient, so they react negatively with their schizophrenic patients ,which lead to limited patient interaction with other and decrease desire to relate , which manifested in his/her relation with family members or colleges.

The present study revealed no significant differences reported between post and follow up scores, this result may related to program effect in teaching effective skills as problem solving , and communication skills which help caregivers in lowering their expectation toward the patient . Also identification of caregiver needs with the space of relieve emotion and ventilation with other participants had a positive impact on the caregiver – patient relationship.

These results of present study supported by Gümüş 2008, who reported family psycho education serves to broaden and enrich the social environment of both the patients and families a likes.

In conclusion , psycho educational program for the caregivers was designed to teach family members with schizophrenic patient about schizophrenia, help caregiver in problem-solving, communication training , behavioral management , and identification of both the patients and caregivers needs .studies showed that caregivers who participated in the program improved their knowledge about schizophrenia , importance of compliance of medication ,side effects of psychotropic medication and how to manage.

### **Conclusion:**

In conclusion , the study revealed that caregiver perception of burdens" in relation to recreational family activity, family interaction, physical health and psychological health, were decrease among study group more than control group , also two month's later after ending the program, the caregivers showed significant decreasing in ( follow up mean scores )of burdens



of caring for schizophrenic patient, hence this psychoeducational program could be effective in decreasing burdens of caregivers with schizophrenic patient.

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#### References

1. Khashaba A., Sherra Kh., Shalendah A and Abdel-Hameed,S(2007) Knowledge and attitude toward mental illness in a sample of the relatives of Arab psychiatric patients in Saudi Arabia E.in journal of current psychiatry Ain shams , Vol. 14 No.1 March .
2. AwadA.G. and L.N. Voruganti, (2008), The burden schizophrenia on caregivers: a review. *Pharmacoeconomics*, **26** pp. 149–162.
3. Gümüş. A 2008, Health Education Needs of Patients With Schizophrenia and Their RelativesArchives of Psychiatric Nursing Volume 22, Issue 3, June Pages 156-165.
4. Chien WT, ChanWCS, Thompson DR. 2006., Effects of a mutual support group for families of Chinese people with schizophrenia: 18-month follow-up. *Br J Psychiatry*.;189:41–9.
5. Dixon L, McFarlane WR, Lefley H, Lucksted A, Cohen M, Falloon I, Mueser K, Miklowitz D, Solomon P,Sondheimer D. Evidence-based practices for services to families of people with psychiatric disabilities. *Psychiatr Serv*. 2001; 52:903-910.
6. El-Shafei ,A.,G., AKamel, M.,D., Criag T., Effat ,S,G., Omar, A., N.,& EL-Nahas, G,S. (2002): An Educational Program for knowledge and attitude change in families of patients with schizophrenia. MD Thesis in Ain Shams university, Faculty of Medicine.
7. Hoenig J, Hamilton MW (1966): The schizophrenic patient in the community and his effect on the household. *International Journal of Social Psychiatry* 12:165–176, 9
8. Hooley JM, Campbell C. Control and controllability: beliefs and behaviour in high and low expressed emotion relatives. *Psychol Med*. 2002;32:1091-1099.
9. Lehman A, Kreyenbuhl R, Buchanan R, et al (2004): The Schizophrenia Patient Outcomes Research Team (PORT): updated treatment Recommendations 2003. *Schizophrenia Bulletin* 30:193–217.
10. Magliano L, Fiorillo A. 2007., Psychoeducational family interventions for schizophrenia in the last decade: from explanatory to pragmatic trials. *Epidemiological Psychiatric Sociale*.;16:22–34.
11. Pai S, Kapur RL. The burden on the family of a psychiatric patient: development of an interview schedule. *Br J Psychiatry*. 1981; 138:332–335. Pharoah F, Mari J, Rathbone J, Wong W. 2006, Family intervention for schizophrenia. *Cochrane Database Systematic Review*.;4:CD000088.
12. Pollio DE, North CS, Reid DL, et al (2006).: Living with severe mental illness—what families and friends must know: evaluation of a one-day psychoeducation workshop. *Social Work* 51:31–38.
13. Roick C, Heider D, Toumi M, Angermeyer MC. (2006): The impact of caregivers characteristics, patients conditions and regional differences on family burden in schizophrenia: a longitudinal analysis. *Acta Psychiatr Scand*.; 114:363–374. doi: 10.1111/j.1600-0447.2006.00797.x.

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