

Effect of Psychoeducational Program on Cognitive Emotion Regulation of Family Caregivers having Patient with Schizophrenia

Hend Ezzat Mohammed¹, Omayma Abo Bakr², Afaf Mohamed Fahmy³

¹M.Sc. in Nursing, ²Professor of Psychiatric Mental Health Nursing, ³Assistant Professor of Psychiatric Mental Health Nursing Faculty of Nursing – Ain Shams University

Abstract

Background: Family caregivers of patient with schizophrenia face many problems related to caregiving as, stress, anxiety and a high level of burdens, cognitive emotion regulation can be viewed as the cognitive part of coping, which involves the management of emotional information **Aim:** to evaluate the effect of psychoeducational program on cognitive emotion regulation of family caregivers having patient with schizophrenia **Study design:** a quasi-experimental design was utilized to conduct this study. **Setting:** this study was conducted in the outpatient clinic in El Abbassia Mental Health Hospital. **Subject:** convenient sample of 50 family caregivers were chosen for conducting this study. Data collection **tools:** (1) Socio-demographic Questionnaire for patients with schizophrenia and their family caregivers (2) Cognitive Emotion Regulation (CER **Results:** the present study revealed that there were highly statistically significant differences were found between pre- post program implementation and regarding adaptive and maladaptive cognitive emotion regulation among family caregivers. **Conclusion:** Caregivers of patient with schizophrenia had high maladaptive cognitive emotion regulation, which decreased after implementation of the management program with a highly statistical significant difference ($P \leq 0.001$). **Recommendations:** Designing a systematically continuous family psychoeducational programs in psychiatric hospitals to provide proper information and psychological support that help caregivers of patient with schizophrenia to improve their understanding, handle difficult thoughts and emotions, reduce maladaptive cognitive emotion regulation.

Keywords: Cognitive emotion regulation, Management program, psychoeducational program, Schizophrenia.

Introduction:

Schizophrenia is the most chronic psychosis in Egypt, accounts for the majority of inpatient in mental health hospital and considers a catastrophic events in the family life, placing burden on them. It is disruptive and distressing illness, is not only affecting life style and socioeconomic status of the patient but also disturbs social, psychological, physical and economical aspects of the family members. Schizophrenia rather than any other physical illness generates very different responses from society. The tradition of tender, love, sympathy, and support that are shown on those with physical ill patients are clearly denied to those with mental illness (Settineri et al., 2014).

Cognitive emotion regulation can be briefly defined as the management of emotions. Cognitive emotion regulation (CER) is described as the “conscious, mental strategies individuals use to cope with the intake of emotionally arousing information”. Research related to this topic has shown that emotion

regulation by cognition is correlated with human life and it helps people to keep control over their emotions during or after the experience of threatening or stressful events. The researches are conducted with aiming to investigate the role of cognitive emotion regulation strategies in amount of stress (Miklósi, Martos, Szabó, Kocsis, Perczel, 2014; Solgi & Yaseminejad, 2018).

CER involves four maladaptive and five adaptive strategies. The four maladaptive CER strategies are rumination, self-blame, blaming of others and catastrophising, and they can lead to psychological and emotional problems such as depression, anxiety or risky behaviours. By contrast, positive refocusing, refocusing on planning, acceptance, putting into perspective and positive reappraisal are the five adaptive strategies that are related to better mental health and well-being. Specifically, a number of previous studies have linked the absence of adaptive strategies and the presence of

maladaptive strategies with psychological adjustments, such as anxious and depressive symptoms, anger and distress and different forms of psychopathology (Extremera, Quintana-Orts, Sánchez-Álvarez, and Rey, 2019).

Psychoeducation is defined as a “systematic, structured, didactic information on the illness and its treatment, and includes integrating emotional aspects in order to enable family to cope with the illness” and improve cognitive emotion regulation. It features common structural components since each program is designed and led by health professionals. A collaborative relationship is established between the mental health professionals and their families, to help the latter to share the burden of the illness and work toward the patients’ recovery (Chien, Leung, Yeung, Wong, 2013).

Significance of the Study

Schizophrenia has destructive effect on family and patient as produce objective and subjective burden and stigma. Important studies have shown psycho-pathological risk and damage in the quality of life of many caregivers. This makes family under stress continuously which produces high expressed emotions toward their patient. Caregiver becomes a hidden patient which in turn affect patient prognosis course negatively (Lippi, 2016).

Cognitive emotion regulation was, thus, set as a moderator within the effect of stress to resilience as well as a mediator. The exposure to stress causes emotion dysregulation, which leads to negative consequences. Individuals with a highly developed ability to regulate their emotional response are more likely to recover after stress than those individuals with a lower level of this ability (Troy & Mauss, 2011).

Aim of the Study:

This study aims to evaluate the effect of psychoeducation program on cognitive emotion regulation strategies of family caregivers having patient with schizophrenia.

This aim was achieved through:

1. Assess the family caregivers cognitive emotion regulation.

2. Design, implement, a psychoeducational program for enhancement cognitive emotion regulation of family caregivers having patient with schizophrenia.

3. Evaluating the effect of psychoeducation program on enhancement cognitive emotion regulation of family caregivers having patients with schizophrenia.

Subjects and Methods:

I. Technical design:

The technical design includes research design, setting, subjects and tools of data collection.

Research design:

A quasi-experimental design (one group pre/post test) was used in the current study. Quasi-experiment is an empirical study used to estimate the causal impact of an intervention on its target population without random assignment. Therefore, the design is most appropriate to investigate the effect of evaluate the effect of psychoeducation program on cognitive emotion regulation strategies of family caregivers having patient with schizophrenia.

Research setting:

The current study was conducted at outpatient clinic in El Abbassia Mental Health Hospital. It is a governmental hospital affiliated to the Ministry of Health. It was built in 1883; it is the largest hospital of 5 mental health hospitals in Egypt. The hospital is located in the middle area of Cairo and serves a vast area of about the two thirds of Greater Cairo. The hospital serves to both urban and rural areas, including areas around Greater Cairo as well. The outpatient units have 6 clinics daily for 6 days per week. They offer services for about 780-1200 patients monthly

Research subjects

• **Type of the sample:** Convenient sample was used in the current study.

• **Sample Size:** The sample was chosen as the number of available family caregivers of patient with schizophrenia and the caregivers of the present study were 50 family caregivers who meet the following criteria:-

- The family care giver and patient with schizophrenia living in the same dwelling
- The family caregiver identified him/herself as the main provider of care for the patient with schizophrenia.
- Willing to participate in the study.
- The family caregiver is free from any psychiatric illness.

Tools for data collection:**Tool (1): Socio-demographic Questionnaire for patients with schizophrenia and their family caregivers:**

It was developed by the researcher and includes the following:-

- Socio-demographic data of the patient such as: age, marital status, economic status, education, occupation, duration.

- Socio-demographic data of the family caregivers as: age, marital status, income, education, occupation, relation to the patient and if he/ she suffer from any disease.

Tool (2): Cognitive Emotion Regulation (CER):

This scale was adapted by (Garnefski, Kraaij, Spinhov, 2002) to be assessing cognitive emotion regulation of family caregivers. This scale was divided into 2 parts adaptive cognitive emotion regulation and maladaptive cognitive emotion regulation. Maladaptive cognitive emotion regulation was divided into 4 parts each parts was divided into 4 items. **Part (1):** to measure self-blame. **Part (2):** to measure rumination. **Part (3):** to measure catastrophizing. **Part (4):** to measure blame others. While adaptive cognitive emotion regulation was divided into 5 parts each parts was divided into 4 items. **Part (1):** acceptance. **Part (2):** positive refocusing. **Part (3):** refocus on planning. **Part (4):** positive reappraisal. **Part (5):** putting into perspective.

Scoring system: Each item of the cognitive emotion regulation scale that requires participants to respond on a 3-points Likert-type scale, ranging from 1 (always) to 2 (sometimes) and 3 (never). Family caregivers with a total score reach from (0 to 33) is considered low adaptive or maladaptive cognitive emotion regulation while moderate is from 34 to 67 and high from 68 to 100.

II. Operational design:

The operational design includes preparatory phase, validity, reliability, pilot study and fieldwork.

Preparatory phase: It includes reviewing of literature and different studies related cognitive emotion regulation of family caregivers of patient with schizophrenia by using books, articles, periodicals, magazines and internet. After reviewing of recent, current, national and international related literature in various aspects of the problems, the study tools

were designed and translated into Arabic language by language experts and back translated to ensure its accuracy.

Validity and reliability: To achieve the criteria of trustworthiness of the data collection tools in this study, tools were tested and evaluated for content validity. Content validity was tested by five experts in psychiatric mental health nursing. To ascertain relevance, clarity and completeness of the tools, experts elicited responses, which were either agree or disagree for the content reliability. Also, the items on which 85% or more of the experts have agreed were included in the tool. Based on expert's comments and recommendations, minor modifications had been made such as rephrasing and rearrangements of some sentences. In addition, the reliability of tools was assessed through measuring their internal consistency by Cronbach Alpha Coefficient test. It was proved to be high as in the following table:

Tools	Number of items	Face validity	Cronbach's Alpha
Cognitive emotion regulation	36	92	0.81

Pilot study:

A pilot study was under taken after the translation of the tools and before starting the data collection. It was conducted on 5 family caregivers of patient with schizophrenia. The purpose of the pilot study was to test the applicability, feasibility and clarity of the tools. In addition, it served to estimate the approximate time required for interviewing the family caregivers as well as to find out any problems that might interfere with data collection. After obtaining the result of the pilot study, the necessary modifications of tools as, excluded questions, added questions & revised were done then final format was developed under the guidance of supervisors. Family caregivers who participated in the pilot study were excluded from the main study sample.

Field work:

The study was started and finished through the following phases:

A) Assessment and planning phase

The researcher attended the neuropsychiatric outpatient clinic two days per week, from 9.00 AM. To 2.00 PM. The data collection and implementation the program

lasted six months, starting from May 2018 to October 2019 for all family caregivers under the study. A number of interviewed caregivers per week ranged from 1-2. The researcher interviewed each caregiver individually and briefly explained the nature and the purposes of the study, and asked for participation. All caregivers were informed that participation is voluntary.

After obtaining the acceptance of caregivers to participate in the present study. Collection of data as begun with the socio-demographic questionnaire, and it was completed by the researcher within 10 minutes for each caregiver. After that, the cognitive emotion regulation scale was also completed by the researcher within about 30 minutes for each caregiver. So, each caregivers need about 30 minutes to complete the questionnaire. Filling the previous mentioned tools was done by the researcher before implementation of psychoeducational cognitive emotion regulation program according to the caregivers understanding and health condition. All information gathered through data collection tools was interpreted to identify the individualized learning needs. The researcher set up a teaching session plan based on identified needs covering all objectives, these objectives were categorized into general and specific objectives and the program resources, facilities were allocated (printed material and location of session that best serve the caregivers). In addition, the researcher determined the teaching strategy (timetable of sessions, teaching methods, media used and caregivers activities). The appointment for starting teaching sessions was detected and scheduled with the caregivers for the following weeks within the same previously mentioned days.

B) Implementation phase:

The teaching sessions were conducted in the waiting hall in front of outside patient clinics. The program content and its objectives were developed by the researcher in the form of 12 sessions each session take about 30- 90 minutes according to the caregiver understanding and span of attention. The researcher interviewed each family caregiver of patient with schizophrenia sometimes individually or in a group which didn't exceed five caregivers using a period of six months,

starting from May 2018 to October 2019 for all family caregivers under the study.

Every session of the program has general and specific objectives; these were achieved through several teaching methods and media as lecture, group discussion, role playing, booklet, video, and posters. At the beginning of the first session, an orientation of the psychoeducational program and its purpose took place. The importance and benefits of the program were explained to all the caregivers under the study to motivate them to follow instructions which were included in it. Each session started by greeting the caregivers, assessing the caregivers motivation for learning, getting feedback about what was given through the previous session, and present the objectives of the new topic, taking into consideration using simple language to suit the educational level of the caregivers. The researcher emphasized the importance of adherence to each step of the psychoeducational program, and the rationale for and the benefits of engaging in each new behavior were explained. Motivation, problem solving and reinforcement techniques were used to enhance active participation for all caregivers in the program plan. The booklet was handed for every caregiver. The researcher encouraged the caregivers to express their readiness for changing their behavior. After finishing of the program sessions, the researcher thanked the caregivers for participation and asked for any inquiries unclear points.

Program sessions:

Introductory Session: (Time: 30 min)

- During the initial session the researcher explained the overview about program and its objectives and determine the meeting time that was once time / week.

Session 1: Theoretical session (Time: 45 min)

- The main objective was: to help the family caregivers to identify the meaning, causes and signs and symptoms of schizophrenia.

Session 2: Theoretical session (Time: 30 min)

- The main objective was: to help caregiver to recognize myths and misconception about schizophrenia.

Session 3: Theoretical session (Time: 45 min)

- The main objective was: to help the family to discuss meaning of cognitive emotion regulation and explain the cognitive emotion regulation process.

Session 4: Theoretical session (Time: 45min)

- The main objective was: to help the family caregivers to identify maladaptive cognitive emotion regulation patterns.

Session 5: Theoretical session (Time: 45 min)

- The main objective was: to help the family caregivers to identify maladaptive cognitive emotion regulation patterns.

Session 6: Practical session (Time: 90 min)

- The main objective was: to help the family caregivers to apply the plan of time management through: write down your short-term and long-term goals, determine what your time is worth, keep a time log analyze your time log and set up a plan to eliminate time-wasters.

Session 7: Practical session (Time: 90 min)

- The main objective was: to help the family caregivers to developing skills of cognitive restructure to overcome thoughts disorder through training of caregivers on some skills as: ideas termination and self monitoring skills.

Session 8: Practical session (Time: 90 min)

- The main objective was: to help the family caregivers to design personal plan for managing negative thoughts and emotions through: list the automatic negative emotion, practice Mindfulness, think positive and release the negative thoughts emotion and replace with positive ones.

Session 9: Practical session (Time: 90 min)

- The main objective was: to help the family caregivers to demonstrate critical problem solving techniques to management the range of difficult behavior through: defining the problem, analyzing the problem, developing possibilities, selecting the best solution, implementing and evaluating.

Session 10: Practical session (Time: 90min)

- The main objective was: to help the family caregivers to demonstrate the steps of deep breathing technique.

Session 11: Practical session (Time: 90 min)

- The main objective was: to help the family caregivers to Demonstrate the steps of progressive muscles relaxation technique.

Session 12: Practical session (Time: 90 min)

- The main objective was: to help the family caregivers to apply the practice of guided imagery technique.

Ending session: Evaluation session (Time: 60 min)

- Global summarization of the session and termination of the intervention sessions for family caregivers

- Evaluate the effectiveness and the outcomes of the program implementation.

Evaluation phase:

Evaluation of outcome of the program was carried out by the researcher immediately after implementation of the program (post- test) by using the same study tools that have been used in pretest to estimate the effect of psychoeducational program on cognitive emotion regulation of family caregivers having patient with schizophrenia.

Ethical considerations:-

The ethical research considerations in this study include the following: A written initial approval was obtained from the research ethical committee at the faculty of nursing, Ain Shams University. Individual oral consent was obtained from each participating family caregivers after explaining the nature and benefits of the study. The researcher cleared the objectives and aim of the study to participating family caregivers. The researcher maintained anonymity and confidentiality of participating family caregivers. Participating family caregivers were allowed to choose to participate or not in the study, and given the right to withdraw at any time from the study without giving reasons.

III. Administrative design

Approval was obtained from Dean of faculty of nursing, Ain Shams University, then written official letter sent to the director of

Abbassia psychiatric hospital, include the aim of the study and steps of the psychoeducational cognitive emotional program, to the get permission to conduct the study.

IV. Statistical design

The collected data were organized, analyzed using appropriate statistical significant tests. The data were collected and coded using the Computer Statistical Package for Social Science (SPSS), version 20, and was also used to do the statistical analysis of data. Data were presented using descriptive statistics in the form of frequencies and percentages. Chi-square tests were used to compare frequencies and correlation between study variables. $p\text{-value} > 0.05$ Not significant (NS). $p\text{-value} \leq 0.05$ Significant (S). $p\text{-value} \leq 0.01$ Highly Significant (HS).

Results:

Table (1): represented distribution of the studied patients according to their socio demographic characteristics. It was found that more than half (56%) of the studied patients ranged from 20-40 years old with mean age $37.2 + 10.89$ years. Also, more than half (54%) of the studied patients were males. In relation to the studied patient's it was revealed that less than half (44%) of the studied patients had secondary education and (40%) of the patients had primary education. Regarding the studied patients' occupation and marital status it was found that most (82%) of the studied patients were unemployed and about two thirds of them (68%) were single. Furthermore, more than two thirds (70%) of the studied patients were urban. Also, less than half (46% and 42%) of the studied patients had illness duration from (3-5 years) and more than 5 years respectively. Also, less than two thirds (60%) of the studied patients adhere to treatment.

Table (2) represented distribution of the studied caregivers according to their sociodemographic characteristics. It was found that more than half (56%) of the studied caregivers were females. More than two thirds (78%) of the studied family caregivers their ages were from >40 years with mean age $50.5 + 12.95$. Also, more than half (54%) of the studied family caregivers were mothers and fathers. Regarding the studied caregivers' occupation and marital status it was found that more than

half (54%) of the studied caregivers were married and employed. Also, majority (82%) of the studied family caregivers had no enough income. While about two thirds of the studied family caregivers (64%) were financially obligated to pay for patient care and the majority (82%) of their studied caregivers needed special care. Also, about half (50%) of the studied caregivers suffer from chronic disease.

Table (3) shows that, there were no statistical significant relations ($p \leq 0.05$) between patients' age, sex, residence marital status and total maladaptive cognitive emotion regulation score and highly statistical significant relations were observed as regards occupational status ($p \leq 0.001$) pre program and statistical significant relations post program. Also, there were almost statistical significant relations between illness duration and maladaptive cognitive emotion regulation preprogram however, there were no significant relations post program.

Table (4) shows that, there were no statistical significant relations ($p \leq 0.05$) between patients' age, sex, marital status, illness duration and total adaptive cognitive emotion regulation score and highly statistical significant relations were observed as regards residence ($p \leq 0.001$) pre program however there were no statistical significant relations post program.

Table (5) represents that, there were highly statistical significant relations were observed between family maladaptive cognitive emotion regulation score pre and post program and their degree of relation with the patient, marital status and special care and ($P \leq 0.001$). While, there were no statistical significant relations were found regarding their education and chronic illness ($p \geq 0.05$).

Table(6):represents that, there were highly statistical significant relations were observed between family adaptive cognitive emotion regulation score at pre and post program and their degree of relation with the patient, educational level ,chronic illness and special care at pre program only ($P \leq 0.001$). While, there were no statistical significant relations were found regarding their income and marital status ($p \geq 0.05$).

Table (1): Distribution of patients having schizophrenia according to their socio-demographic characteristics (n=50).

Items	N	%
Age:		
< 20 years	3	6
20-40 years	28	56
>40-60 years	19	38
Mean + SD:37.2 + 10.89		
Sex:		
Male	27	54
Female	23	46
Level of education:		
Primary	22	44
Secondary	22	44
University	6	12
Occupation:		
Unemployed	41	82
Employed	9	18
Marital status:		
Married	8	16
single	34	68
Widowed	2	4
Divorced	6	12
Residence		
Urban	35	70
Rural	15	30
Illness duration		
1- < 3years	6	12
3 - 5 years	23	46
More than 5years	21	42
Adherence to treatment		
Adhere	30	60
Not adhere	20	40

Table (2): Distribution of studied family caregivers according to their socio-demographic characteristics (n=50).

Items	N	%
Sex		
Male	22	44
Female	28	56
Age:		
20-30 years	5	10
>30-40 years	6	12
>40 years	39	78
Mean + SD:50.5 + 12.95		
Degree of relation:		
Father/mother	27	54
Husbnd/wife	6	12
Brother/sister	10	20
Son/daughter	7	14
Marital status:		
Married	27	54
Divorced	2	4
Widowed	11	22
single	10	20
Occupation:		
Student	0	0
Unemployed	19	38
Employed	27	54
Retired	4	8
Family income:		
Enough	9	18
Not enough	41	82
Financially obligated to pay for patient care		
Yes	32	64
No	18	36
special care of the patient		
Yes	41	82
No	9	18
chronic diseases of the caregiver:		
Yes	25	50
No	25	50

Mean values of Maladaptive cognitive emotion regulation subscales and total scale in

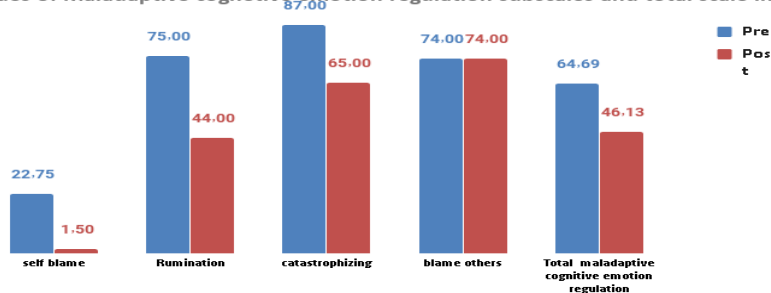


Figure (1) reveals that, there was reduction in the total level of maladaptive and highly statistically significant differences with mean difference (-18,56) and strategies of (self-blame, rumination, catastrophizing) with mean difference (-21,75/-31,100/-22) respectively post program implementation except blame others there was no change post program ($P > 0.05$ NS).

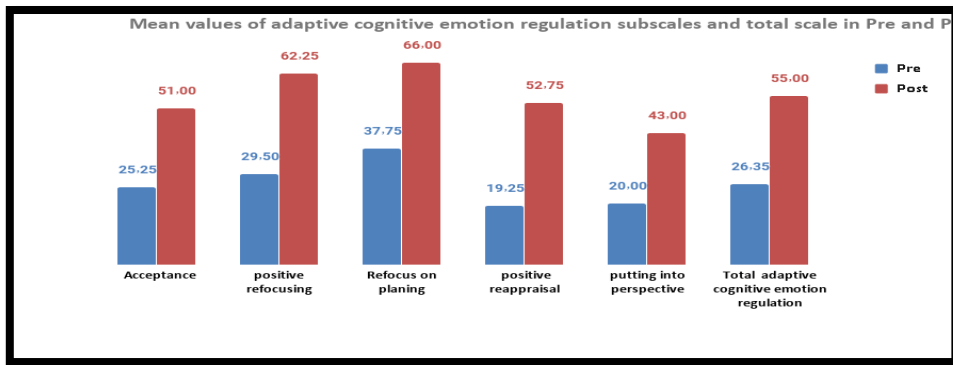


Figure (2) reveals that, there was increase in the total level of adaptive cognitive emotion regulation and highly statistically significant differences with mean difference (28.65) and strategies of(acceptance, positive refocusing, refocus on planning, positive reappraisals, putting into perspective) with mean difference (25.75/32.75/28.75/33.50/23) respectively post program implementation.

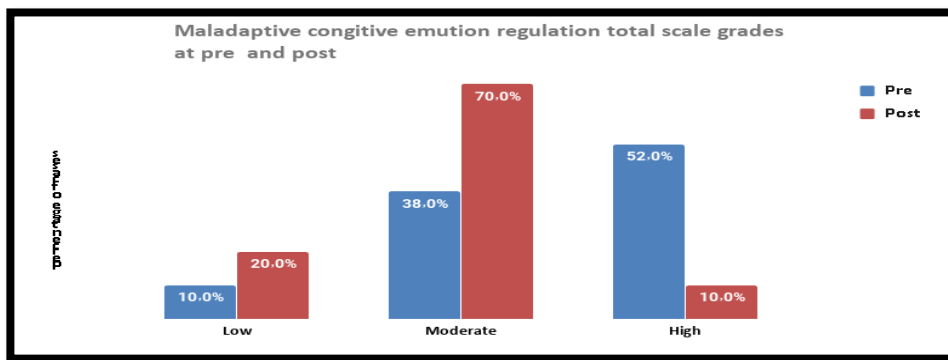


Figure (3): Reveals that percentage of cases had mal adaptive cognitive emotion regulation pre program with low, moderate and high were (10%,38%,52%) respectively revealing that there were increase in percentage of cases with low and moderate maladaptive cognitive emotion regulation by change (10% and 32%) respectively post program while percentage of cases post program had maladaptive cognitive emotion regulation were (20%,70%,10%) respectively and there were decrease in percentage of cases with maladaptive cognitive emotion regulation by change 42% postprogram.

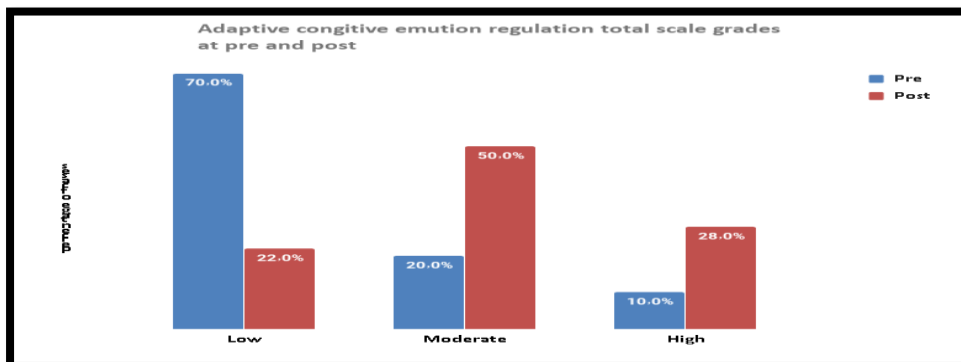


Figure (4):Reveals that percentage of cases had adaptive cognitive emotion regulation pre program with low, moderate and high were (70%,20%,10%) respectively revealing that there were decrease in percentage of cases had low adaptive cognitive emotion regulation by change (48%) post program while percentage of cases post program had adaptive cognitive emotion regulation were (22%,50%,28%) respectively and there were increase percentage of cases with moderate and high adaptive cognitive emotion regulation by change (30% and 18%) respectively post program.

Table (3): Relations between socio-demographic characteristics of patient having schizophrenia with total maladaptive cognitive emotion regulation of caregiver (n=50).

Sociodemographic	Items	Maladaptive cognitive emotion regulation pre					Maladaptive cognitive emotion regulation post				
		N	Mean	SD	T	P-value	N	Mean	SD	T	P-value
Sex	Male	27	63.89	24.13	- 0,26	0.79341 P > 0.05 NS	27	44.21	16.71	- 0,83	0.40818 P > 0.05 NS
	Female	23	65.63	22.16			23	48.37	18.51		
Age	Up to 40 years	31	64.32	24.01	- 0,14	0.88535 P > 0.05 NS	31	43.55	16.73	- 1,34	0.18640 P > 0.05 NS
	More than 40 years	19	65.30	21.95			19	50.33	18.37		
Occupational level	Un employed	41	69.13	21.17	3,17	0.00265 P < 0.01 HS	41	48.48	16.54	2,10	0.04139 P < 0.05 S
	Employed	9	44.44	21.07			9	35.42	18.75		
Residence	Rural	15	68.75	12.33	0,81	0.41982 P > 0.05 NS	15	44.58	13.12	- 0,40	0.68780 P > 0.05 NS
	Urban	35	62.95	26.29			35	46.79	19.21		
Marital status	Married	8	69.53	11.90	0,51	0.60362 P > 0.05 NS	8	52.34	16.35	2,87	0.06683 P > 0.05 NS
	Divorced or widowed	8	69.53	16.51			8	56.25	17.44		
	Single	34	62.41	26.13			34	42.28	16.86		
Illness duration	1 -< 3 years	6	76.56	17.65	2,57	0.06573 P ≈ 0.05 Almost S	6	52.08	21.53	0,41	0.74344 P > 0.05 NS
	From 3 to 5 years	10	77.50	14.72			10	48.75	12.43		
	More than 5 years	13	56.97	28.73			13	44.23	17.39		

- Highly significant difference $p \leq 0.001$ Statistical significant difference $P \leq 0.05$
- No statistical significant difference $P \geq 0.05$

Table (4): Relations between socio-demographic characteristics of patient having schizophrenia with total adaptive cognitive emotion regulation of caregiver (n=50).

Sociodemographic		Adaptive cognitive emotion regulation					Adaptive cognitive emotion regulation				
		N	Mean	SD	T	P-value	N	Mean	SD	T	P-value
Sex	Male	27	22.04	26.06	-1.2	0.21555	27	54.35	24.42	-0.2	0.83840
	Female	23	31.41	26.65	6	P > 0.05 NS	23	55.76	23.97	1	
Age	up to 40 years	31	22.74	22.53	-1.2	0.22203	31	53.63	22.85	-0.5	0.61065
	More than 40 years	19	32.24	31.69	4	P > 0.05 NS	19	57.24	26.21	1	P > 0.05 NS
Occupational level	Un employed	41	25.43	25.27	-0.5	0.60394	41	53.66	23.97	-0.8	0.40408
	Employed	9	30.56	32.85	2	P > 0.05 NS	9	61.11	24.47	4	P > 0.05 NS
Residence	Rural	15	11.00	14.01	-2.8	0.00600	15	54.00	19.15	-0.1	0.84922
	Urban	35	32.93	27.95	8	P < 0.01 HS	35	55.43	26.02	9	P > 0.05 NS
Marital status	Mrrried	8	15.00	16.96	0.93	0.40140	8	49.38	12.87	0.64	P > 0.05 NS
	Divorced or widowed	8	25.63	23.90		P > 0.05 NS	8	49.38	29.87		0.53296
	Single	34	29.19	28.63		NS	34	57.65	24.63		
Illness duration	1 < 3 years	6	10.42	5.57	1.02	0.39138	6	45.00	27.61		0.68865
	From 3 to 5 years	10	23.25	26.46		P > 0.05 NS	10	58.75	25.31	0.49	P > 0.05 NS
	More than 5 years	13	31.73	35.30		NS	13	58.08	26.81		NS

Table (5): Relations between socio-demographic characteristics of the studied family caregivers with their total maladaptive cognitive emotion regulation (n=50).

sociodemographic		Maladaptive cognitive emotion regulation pre					Maladaptive cognitive emotion regulation post				
		N	Mean	SD	F	P value	N	Mean	SD	F	P value
Relation to patient	Father and Mother	27	69.10	15.63	2.68	0.05765 P ≈ 0.05 Almost S	27	44.91	15.98	5.70	0.00211 P < 0.01 HS
	Husband and wife	6	56.77	19.80			6	46.88	16.65		
	Brother and sister	10	50.00	37.03			10	35.00	16.46		
	Son and daughter	7	75.45	15.56			7	66.07	8.92		
Marital status	Married	27	60.76	27.03	3.42	0.04097 P < 0.05 S	27	44.21	18.74	4.94	0.01128 P < 0.05 S
	Unmarried	10	80.94	15.48			10	60.00	12.66		
	Divorced or widowed	13	60.34	11.30			13	39.42	12.34		
Educational level	Illiterate	7	63.84	10.80	0.01	0.99837 P > 0.05 NS	7	48.21	8.63	1.31	0.28131 P > 0.05 NS
	Primary level	16	65.04	14.44			16	40.23	17.82		
	Secondary level	13	65.39	19.41			13	52.89	12.47		
	Higher education	14	64.06	36.81			14	45.54	22.79		
Special care	Yes	41	71.11	17.24	5.22	0.00000 P < 0.001 HS	41	48.93	16.13	2.55	0.01388 P < 0.05 S
	No	9	35.42	24.21			9	33.33	18.75		
Chronic illness	Yes	25	67.25	16.76	0.78	0.43711 P > 0.05 NS	25	47.25	17.24	0.45	0.65412 P > 0.05 NS
	No	25	62.13	28.07			25	45.00			

Table (6): Relations between socio-demographic characteristics of the studied family caregivers with their total maladaptive cognitive emotion regulation (n=50).

sociodemographic		Adaptive cognitive emotion regulation pre					Adaptive cognitive emotion regulation post				
		N	Mean	SD	F	P value	N	Mean	SD	F	P value
Relation to patient	Father and Mother	27	18.24	13.95	3.20	0.03208	27	49.17	17.96	5.13	0.00381
	Husband and wife	6	23.33	37.80		P < 0.05 S	6	57.92	21.99		P < 0.01 HS
	Brother and sister	10	46.00	37.44			10	77.50	27.23		
	Son and daughter	7	32.14	24.56			7	42.86	24.60		
Marital status	Married	27	25.37	31.14	0.65	0.52730	27	57.31	24.59	0.27	0.76114
	Unmarried	10	34.50	27.78		P > 0.05 NS	10	51.50	32.28		P > 0.05 NS
	Divorced or widowed	13	22.12	10.35			13	52.88	15.13		
Educational level	Illiterate	7	13.57	9.45	6.06	0.00145	7	43.57	12.24		0.04151
	Primary level	16	16.09	17.08		P < 0.01 HS	16	49.84	15.15	2.97	P < 0.05 S
	Secondary level	13	22.31	27.28			13	51.54	28.48		
	Higher education	14	48.21	28.81			14	69.82	27.08		
Income	Sufficient	9	32.22	28.73	0.79	0.43607	9	54.72	24.22	-0.04	0.96452
	Insufficient	37	24.39	26.35		P > 0.05 NS	37	55.14	24.96		P > 0.05 NS
Special care	Yes	41	22.62	23.16	-2.2	0.03214	41	52.50	23.37	-1.6	0.11655
	No	9	43.33	34.89	1	P < 0.05 S	9	66.39	24.75	0	P > 0.05 NS
Chronic illness	Yes	25	16.90	16.04	-2.6	0.01013	25	42.40	18.01	-4.3	0.00007
	No	25	35.80	31.44	8	P < 0.05 S	25	67.60	22.78	4	P < 0.001 HS

Discussion:

Concerning age, the findings of the present study showed that, more than half of the studied patients aged from more than 20 to 39 with mean age 37.2. This result indicates that the symptoms of schizophrenia usually become apparent during adolescence or early adulthood.

As regards gender, the current study showed an increase in the number of male patients than female patients. This result might be attributed to the

period of data collection and availability of the patients at this time.

In relation to educational status, the current study result revealed that less than half of patients had primary or secondary education. This might be due to the patient's ability to engage in self-initiated goal-directed activity. This can persist into residual phase-resulting in marked impairments in the patient's educational, social, vocational, and personal functioning.

Regarding marital status, the present study result revealed that, two thirds of patients were single. This finding was expected because poor social adjustment is well known as a major symptom of schizophrenia. This may be owing to the early onset and the nature of mental illness that hinder normal social life such as establishing relationships, developing their social skills, and maintenance of work.

As regards occupation, the current study result revealed that most of the studied patients were not working. This finding indicates that schizophrenia reduces people's motivation so that they are less able to work or participate in leisure activities. Schizophrenics may have difficulty of preserving at work, they become less interested and their work function gradually deteriorated. Also ,this may be related to stigma attached by mental illness that prohibits the patients from developing normal relationships with their colleagues at work, consequently this will make the patients less motivated in their social skills which may impair their ability to stay oriented to work task.

Regarding to the socio demographic characteristics of the studied family caregivers, revealed that more than two thirds of the studied caregivers their ages ranged from more than 44 to 60 years with mean age 50 y. More than half of the studied family caregivers were mothers and fathers and more than half of the studied caregivers were females. From the researcher point of view, most of caregiver who had patient with schizophrenia were parents who had patient aged from 36 to 45 years.

The majority of the caregivers were females (n=80,73%). Most of the study participants were aged between 36 and 45 y with mean age being 43.82.

The result of the current study, found that nearly to three quarters of the studied family caregivers have insufficient income and about two thirds of the studied family caregivers were financially obligated to pay for patient care. This result may be due to medical treatment and the care of the patient with schizophrenia require high costs in addition to the expenses of the family caregiver.

Concerning to special care of patients and chronic disease of caregivers the majority of their patients needed special care from studied caregivers such as helping them to eat, drink or dress. Also, about half of the studied caregivers suffer from chronic disease. From the researcher point of view, this result could be due to

schizophrenia is type from disability need to special care.

Concerning to acceptance, the findings of the current study clarified that around one quarter of the studied caregivers had acceptance .According the researcher points of view, acceptance is poorly used by the studied caregivers in the current study because the studied caregivers unable to accept illness or accept patient.

Also, on the same line **Fouad, Mounir and El Masry, (2013)** who reported that more than half of caregivers with schizophrenia never accept the patient.

This result also came in harmony with a study was conducted in Tanzania by **Iseselo et al., (2016)** entitled "The psychosocial problems of families caring for relatives with mental illnesses and their coping strategies" who found that acceptance was the most frequently cited strategies for coping so as to avoid the dissatisfaction and disappointment that could have resulted from the patient's bizarre behaviour.

In agreement with **Mohammed, (2019); Mohammed (2020)** who found that caregivers develop different kinds of coping strategies to deal with burden which include finding a reasonable solution, looking for support or trying to avoid situation.

On the other hand, these results disagreed with **Abd El-Menem Abd El-Nabi Fathalla, (2018)** who stated that Egyptian family is more accepting and supportive of their mentally illness, as it has a sense of commitment to an unchangeable situation.

Regarding to positive refocusing, the findings of the current study only around one quarter of the studied caregivers were using positive refocusing.

According the researcher points of view, positive refocusing is poorly used by the studied caregivers in the current study and this refers that studied caregivers had no positive, happy and unpleasant thoughts. This explain that the studied caregivers were thinking more about threatening and stressful events in relation to illness .In addition that because of The demanding caregiving role, they were not invited to events because of the unpredictability of their relative's illness. Also, they feel cut off from society as they steadily lost friends and social contacts and may be their works.

On the same line Sidhom, **Abdelfattah, Carter, El-Dosoky, and Fakhr 2014**,who found that majority of studied caregivers always had Frustration and disappointment. Also, **Iseselo, (2016); Ramadan, (2019)** stated that family

caregivers felt helpless when they could do nothing about their relative's condition and when they were fearful of his or her aggressive behaviour. Helplessness was observed when family caregivers could do nothing about the situation. Some caregivers displayed signs of despair due to the difficult life situation caused by the patient's critical demands coupled with unrealistic daily income. They had no means of coping or adapting to manage their situation either due to persistent bizarre behavior by the patient or their own lack of energy.

Concerning to refocus on planning, previous results also showed that around one third of studied caregivers were using refocus on planning strategy to a high degree.

According to the researcher points of view, this means that these studied caregivers think about what to do, how to adapt with illness such as thinking of the best thing can do for the patient, planning for life, how to change the negative situations associated with the patient's illness and planning life of the patient. In other meaning, the caregivers who had putting into perspective they feel more life satisfaction, more positive coping and less anxiety.

On the same line **Garland, Gaylord, Fredrickson, (2011); Li et al., (2015)** reported that using planning as a coping strategy was positively related to optimism and high self esteem, which help in recovery process. Moreover, the use of planning as a coping strategy was negatively related to anxiety.

In contrast **Min et al. (2013)** who reported that refocusing on planning was the common strategy contributing to depression.

Regarding to positive reappraisal, the findings of the current study found that Less than one quarter of the studied caregivers were using positive reappraisal.

According to the researcher points of view, positive reappraisal is poorly used by the studied caregivers in the current study this means that the studied caregivers unable to denotes that the studied caregivers were not capable of giving a positive meaning to negative events such as difficult situations associated with the patient's illness or when the patient makes mistakes they cannot appraise that he/she a patient. In other meaning, the caregivers who had positive reappraisal they feel less stress and anxiety, more quality of life and more positive coping.

In agreement with **Grover, Pradyumna, and Chakrabarti, (2015)** who showed that positive reappraisal strategy is a positive cognitive

strategy negatively related to anxiety, stress related to quality of life.

This result supported by the study developed by **Hofmann et al., (2012)** about "Cognitive reappraisal and expressive suppression strategies role in the emotion regulation" the study explained that when facing an emotional experience, reappraisal decreases amygdala activation by rethinking, reframing, reinterpreting and or cognitively transforming one's appraisal of meaning. Reappraisal has been found to alleviate the negative effects of grief, burnout, anxiety, stress, depression, trauma (**Hassan, Mohamed, El naser, Sayed, 2011**).

Concerning to putting into perspective (table 8, figure 2), the findings of the current study less than one quarter of the studied caregivers were using putting into perspective.

According to the researcher points of view, putting into perspective is poorly used by the studied caregivers in the current study this means that the studied caregivers unable to brush aside the seriousness of the event /emphasizing the relativity when comparing it to other events. It is noticed that the studied caregivers didn't think that all difficulties because of the patient's illness could have been much worse, others who had experiences that were more worse than with the patient, all difficulties because of the patient's illness were not too bad compared with other things in life, telling self that there are matters in life more important than thinking in illness. In other meaning, the caregivers who had putting into perspective they feel more life satisfaction and related to resilience.

Min, Yu, Lee, Chae, (2013); Esmailinasab, Andami, Makhmali, (2016) who found that More frequently use of putting into perspective predicted higher level of resilience and life satisfaction. There is strong relation between putting into perspective strategy and life satisfaction.

Concerning to the relationship between demographic characteristics of the studied patients with total maladaptive cognitive emotion regulation, the current study revealed that, there were highly statistical significant relations ($p \leq 0.001$) between occupation of patient and total maladaptive cognitive emotion regulation.

From the researcher point of view, these results might be because patients with no occupation become more dependent on others, decrease cognitive and social skills compare to patient who work and stay more time at home which cause more burden on caregivers. Also,

caregivers blame patient for causing burden and have catastrophizing emotions and thoughts about patient future if patient becomes alone.

This result supported by the study developed by **Mohammed (2019)**, the study revealed that, there were statistical significant relations between occupation of patient with psychotic disorder and adaptation so caregivers were more adaptive when patient having occupation.

Concerning to the relationship between demographic characteristics of the studied patients with total adaptive cognitive emotion regulation, the current study revealed that, there were highly statistical significant relations ($p \leq 0.001$) between **residence** and total adaptive cognitive emotion regulation.

From the researcher point of view, this results of the current study may be because in some developing countries as in Egypt; rural have less education, less service and mis understanding for schizophrenia. Some rural caregivers have lack information about schizophrenia thinking that schizophrenia is a magic or sorcery and go to sheikh for treatment.

Inconsistent with **Minh, Ziger, Schomerus, (2016)** who revealed that there was a statistically significant relationship between residence and social support provided to caregivers, as rural caregivers received higher social support and less negative perception compared with urban ones. This might be interpreted as an urbanized lifestyle brings in its own loneliness, and urbanization has been shown to lead to isolation related to absence of extended families in these areas that provide plenty of care and support for their members. The different life between the rural of Europe and Egyptian rural was related to burdens.

Regarding to relationship between demographic characteristics of the studied family caregivers with total maladaptive cognitive emotion regulation among family caregivers, the findings of the present study illustrated that, there was statistical significant relations were noticed as regards **marital status** of the caregivers and relation to the patient ($p \leq 0.05$).also ,there were highly statistical significant relations between special care of the patient and total maladaptive cognitive emotion regulation $p \leq (0.001)$.

According to researcher opinion, these results of the current study may be due to in some developing countries as in Egypt; the personal characteristics may influence the direction of cognitive emotion regulation and play an exacerbating or buffering role in emotional

reactivity to daily life stress. When caregivers become married, parent or the patient need special care, this increase responsibilities and burden which lead to maladaptive cognitive emotion regulation. Also parents are more emotional, effected and committed care toward their sons and daughter. Parents have catastrophizing thinking about who will take care of their ill family member in the future.

Margetić et al. (2013) showed that the relation between parents and children category and category of siblings may arise due to higher emotional engagement and attachment between parents and children comparing to siblings. Parents may reflect worry about possible relapse, blame themselves, feeling of personal responsibility for the illness, worries regarding the future related to their permanent responsibility for the patient and the question of who will take care of the patient leads to relation in maladaptation.

Geriani (2015); Abd El-Menemet al., (2018) suggested that as a result of prolonged distress and the physical demands of caregiving; the family caregivers' physiological functioning is compromised. Where the highest scores of burden were related to investing time and physical efforts in caring for their mentally ill family members, being maladaptive.

Also, there was statistical significant relations were noticed between **chronic illness** and total adaptive cognitive emotion regulation $p \leq (p \leq 0.05)$. Also, there were highly statistical significant relations between **educational level of the caregiver** and total adaptive cognitive emotion regulation $p \leq (0.001)$.

According to researcher opinion, higher level of education can support the caregivers to getting more knowledge to deal with the stressful event and more awareness with nature of schizophrenia lead to high adaptive cognitive emotion regulation.

In agreement with **Yaziciet al., (2016)** who stated that when the education level of the caregiver increased, caregiver burden decreased. Also, **Rahmani, (2019)** found that the education level had a positive correlation with caregiver's coping. It could be explained that the more highly educated caregivers could get a better jobs, more support resources and higher salaries to help them deal with their problems.

Conclusion:

Based on the results of the current study; it can be concluded that:

Caregivers of patient with schizophrenia had high maladaptive cognitive emotion regulation and low adaptive cognitive emotion regulation,

which improved after implementation of the psycho education program. Also, there were highly statistically significant relations between maladaptive cognitive emotion regulation and sociodemographic data of patient such as occupation and caregiver such as relation to the patient, marital status and special care. In addition, there were highly statistically significant relations between adaptive cognitive emotion regulation and sociodemographic data of caregiver such as educational level.

Recommendations:

- Replication of the current study on a larger sample is recommended to achieve generalization of the results and wider utilization of the designed program.

- Designing a systematically continuous family psychoeducational programs in psychiatric hospitals to provide proper information and psychological support that help caregivers of patient with schizophrenia to improve their understanding, handle difficult thoughts and emotions, decrease maladaptive cognitive emotion regulation and increase maladaptive cognitive emotion regulation

- Preparation of booklets about the types of support system that available in Abbassia mental health hospital and how to reach them to help the family caregivers to overcome the obstacles that they face in caring of the patient with schizophrenia.

- A simplified, comprehensive and illustrated Arabic booklet about cognitive emotion regulation and types of burden related to schizophrenia should be distributed for each newly attending family caregivers of patient with schizophrenia in neuropsychiatric outpatient clinic.

- Establish awareness program in the psychiatric hospitals for family caregivers of patient with schizophrenia about meaning of cognitive emotion regulation and its effect on quality of life of caregivers and patient.

- Self-help group service should be available in Abbassia mental health hospital psychiatric hospital to provide opportunity for caregivers to share their feelings, problems, ideas and information with others who are undergoing similar experiences.

- Continuous training of psychiatric nurses team to knows how to assist the caregivers and teaching new skills to deal with

their negative thoughts and emotions in positive and productive manner.

- Counseling clinics for family caregivers caring for patient with schizophrenia are needed to minimize their burdens and inform them about the coping strategies for dealing with their patients.

References:

- Abd El-Menem S, Abd El-Nabi A, Fathalla H (2018):** Resilience, burden, and quality of life in Egyptian family caregivers of patients with schizophrenia. *Egyptian Nursing Journal*; 15: 196-204.
- Abdelfattah A, Carter J, El-Dosoky A, and Fakh M. (2014):** Patients' Perspectives on Stigma of Mental Illness (an Egyptian Study in a Private Hospital), *Front Psychiatry*.; 5: 166. doi: 10.3389/fpsy.2014.00166
- Chien W, Leung S, Yeung F, Wong W. (2013):** Current approaches to treatments for schizophrenia spectrum disorders, part II: psychosocial interventions and patient-focused perspectives in psychiatric care. *Neuropsychiatr Dis Treat* (2013) 9:1463–81. doi:10.2147/NDT.S49263
- Esmailinasab M, Andami A, Makhmali A. (2016):** Emotion Regulation and Life Satisfaction in University Students: Gender Differences, *Tarbiat Modares University*, DOI: 10.15405/epsbs.2016.11.82
- Extremera N, Quintana-Orts C, Sánchez-Álvarez N, and Rey L (2019):** The Role of Cognitive Emotion Regulation Strategies on Problematic Smartphone Use: Comparison between Problematic and Non-Problematic Adolescent Users; *Int J Environ Res Public Health*; 16(17); PMC6747355.
- Fouad A, Mounir M and El Masry N. (2013):** Psychosocial Burden among Caregivers Of Patients psychosocial burden among caregivers of patients with schizophrenia in Egypt; 19(6): 611. Department of Psychiatry, Faculty of Medicine, Zagazig University, Sharkia, Egypt.
- Garland E, Gaylord S, Fredrickson B. (2011):** Positive Reappraisal Mediates the Stress-Reductive Effects of Mindfulness: An Upward Spiral Process, *University of Utah Mindfulness* 2(1):59-67.
- Geriani D, Satish K, Shivakumar S, Kanchan T. (2015):** Burden of Care on Caregivers of Schizophrenia Patients: A Correlation to Personality and Coping, *Journal of Clinical and Diagnostic Research*; 9(3): VC01-VC04, DOI: 10.7860/JCDR/2015/11342.5654
- Grover S, Pradyumna, & Chakrabarti S. (2015):** Coping among the caregivers of patients with

- schizophrenia, 24(1): 5–11. *Ind Psychiatry Jdoi: 10.4103/ 0972-6748.160907.*
- Hassan WA, Mohamed II, Elnaser AE, Sayed NE (2011):** Burden and coping strategies in caregivers of schizophrenia patients. *J Am Sci; 7(5): 802–11.*
- Hofmann W, Schmeichel J, Baddeley D. (2012):** Executive functions and self-regulation. *Trends CognSci Journal; 16(3):174-180.*
- Isekelo M Kajula L, Yahya K, (2016):** The psychosocial problems of families caring for relatives with mental illnesses and their coping strategies: a qualitative urban based study in Dar es Salaam, Tanzania, *BMC Psychiatry volume 16, Article number: 146.*
- Li L, Zhu X, Yang Y, He J, Yi J, Wang Y, Zhang J, (2015):** Cognitive emotion regulation: characteristics and effect on quality of life in women with breast cancer. *Health and Quality of Life Outcomes volume 13.*
- Lippi G, (2016):** Schizophrenia in a member of the family: Burden, expressed emotion and addressing the needs of the whole family, *S Afr J Psychiatr; 22(1): 922. Published online 2016 Aug 31. doi:10.4102/sajpsychiatry.v22i1.922https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6138106/*
- Margetić B, Jakovljević M, Furjan Z, Margetić B. (2013):** Quality of Life of Key Caregivers of Schizophrenia Patients and Association with Kinship, *Central European journal of public health 21(4): 220-223. DOI: 10.21101/cejph.a3918*
- Miklósi, M., Martos, T., Szabó, M., KocsisBogár, K., PerczelForintos, D. (2014):** Cognitive emotion regulation and stress: A multiple mediation approach. *Translational Neuroscience; 5(1): 64-71.*
- Min J, Yu JJ, Lee C, Chae J. (2013):** Cognitive emotion regulation strategies contributing to resilience in patients with depression and/or anxiety disorders. *Compr Psychiat; 54: 1190–7.*
- Minh T, Zieger A, Schomerus G. (2016):** Influence of urbanity on perception of mental illness stigma: a population based study in urban and rural Hanoi, Vietnam. <https://doi.org/10.1177/0020764016670430>
- Mohammed A (2019):** Suggested guidelines: burden and coping strategies among family caregivers of psychotic patients. Assiut university faculty of nursing Doctor degree.
- Mohammed A, (2020):** Effect of applying acceptance and commitment therapy" on auditory hallucination among patient with schizophrenia, Doctor degree, Alexandria.
- Rahmani F, Ranjbar F, Hosseinzadeh M, Sajjad S, Dickens G, Vahidi M. (2019):** Coping strategies of family caregivers of patients with schizophrenia in Iran: A cross-sectional survey, *Int J Nurs Sci. 10; 6(2): 148–153. doi: 10.1016/j.ijnss. 2019.03.006*
- Ramadan E (2019):** A study of posttraumatic stress disorder and stress burden in a sample of Egyptian caregivers of patients with severe mental illness. Degree of master, Alexandria university faculty of medicine.
- Settineri S, Rizzo R, Liotta M, Mento C (2014):** Caregiver's burden and quality of life: caring for physical & mental illness. *Int J Psychol Res 7:30–39.*
- Solgi, Z, Yaseminejad P, (2018):** The role of cognitive emotion regulation strategies in depression, anxiety and stress of coronary heart disease patients Department of Psychology, Payame Noor University, P.O. Box: 193953697, Tehran, Iran.
- Troy A &Mauss I. (2011):** Resilience in the face of stress: emotion regulation as a protective factor. *Thornhill J: NMS Psychiatry, China, 6thed, pp16.*
- Yazici E, Karabulut U, Yildiz M, Baskan S, Inan E, Çakir U, Boşgelmez S, and Turgut C, (2016):** Burden on Caregivers of Patients with Schizophrenia and Related Factors, *NoroPsikiyatr Ars, Jun; 53(2): 96–101, doi: 10.5152/npa.2015.9963.*