Emotional Empathy, Burden and Depression among Family Caregivers of Patients with Schizophrenia

Mona Salem Hussien [(1)], Afaf Mohammed Fahmy [(2)], Asmaa Hafez Afefe Barakat [(3)], Fatma Mohammed Ibrahim [(4)]

(1) Demonstrator at Psychiatric Mental Health Nursing Department- Faculty of Nursing -Aswan   University
(2) Assistant Professor of Psychiatric Mental Health Nursing, Faculty of Nursing – Ain Shams University
(3) Assistant Professor Mental Health Nursing, Faculty of Nursing - Ain Shams University
(4) Assistant Professor of psychiatric Mental Health Nursing, Faculty of Nursing - Ain Shams University

Abstract

Background: Schizophrenia is a mental disease cause social and occupational dysfunction the leads to burden and depression among family caregivers. Empathy enables providing more humanized and better quality care. **Aim:** This study aimed to assess emotional empathy, burden and depression among family caregivers of patients with schizophrenia. **Design:** Cross sectional descriptive research design was utilized in this study. **Subjects:** A purposive sample of 186 caregivers who fulfilled specific inclusion criteria. **Setting:** The study was conducted at outpatient clinic at Aswan Psychiatric hospital for mental health and addiction treatment. **Tools of data collection:** Three tools were used in this study: **(1)** Demographic interviewing questionnaire, **(2)** Burden Assessment Schedule (BAS), **(3)** Multi-Dimensional Emotional Empathy Scale (MDEES), **(4)** Center for Epidemiologic Studies Depression (CES-D). **Results:** Data analysis showed that, less than three quarters of the studied caregivers had severe level of total burden. Regarding depressive symptoms, the majority of the studied caregivers had depressive symptoms. In addition**,** three fifths of them had high level of emotional empathy. There were strong positive correlations between total levels of burden of the studied caregivers and their level emotional empathy and depression. Also, there was a strong negative correlation between total levels of emotional empathy of the studied caregivers and their level of depression. **Conclusion:** Caregivers of patients with schizophrenia who experience severe burden had high emotional empathy and severe depressive symptoms. Also, caregivers with high emotional empathy had mild depressive symptoms. **Recommendation:** Designing and implementing of psycho-educational supportive program for family caregivers of patients with schizophrenia to reduce their burden and depression to enhance their coping abilities and quality of life to overcome their burden of caregiving.

Keywords: Schizophrenia, Caregivers, Depression, Burden, Emotional empathy.

Introduction:

Schizophrenia is a severe mental illness with a lifetime prevalence of approximately 0.4% worldwide. It causes devastating effects on patients and their caregivers and imposes enormous costs on health care systems. Schizophrenia is a heterogeneous disorder with positive symptoms (delusions, hallucinations, thought disorders), negative symptoms (anhedonia, avolition, social withdrawal, poverty of thought), and cognitive dysfunction **(Winship, Dursun, Baker, Balista, Kandratavicius, Maia-de-Oliveira & Howland, 2019).**

Family caregivers play a significant role in providing care and support for relatives who are suffering from mental illness. it was well known that appropriate pharmacological treatment is key to patients' functioning, it also the case that the quality of cargiving by family caregivers is significant **(Rahmani, Ranjbar, Hosseinzadeh, Razavi, Dickens & Vahidi, 2019).**

Caregivers of patients with schizophrenia are experiencing chronic stress in their daily lives due to the destructive and progressive nature of the condition. Constant care for patients with schizophrenia could have a negative impact on family members' mental health and could result in missed work, financial strain, negative impact on leisure and social activities, and family relationships, which in turn could create more psychological distress and influence the ability of the family to cope and function effectively **(Qiu, Liu, Bradshaw, Rooney-Latham, Takamatsu, Bulgakov & Braun, 2020).**

Caregiving burden is described as an appraisal of negative psychological pressure (stressful or harmful), as perceived by caregivers. It is obtained from the procedure of interaction between caregiver and care recipient, which is influenced by various elements related to the internal world and external

surroundings **(Pendergrass, Malnis, Graf, Engel, Graessel, 2018).**

Evidence strongly supports that such stress from caregiving increases vulnerability to emotional distress and to physical and mental health problems, such as depression **(Behrouian, Ramezani, Dehghan, Sabahi & Ebrahimnejad Zarandi, 2020).** Therefore, caregivers of patients are at risk of diseases and problems, such as sadness, loss, anger, despair, hopelessness, shame, guilt, tension, communication pressures, and disability in the care process **(Chen, Zhao, Tang, Jin, Liu, Zhao & Lu, 2019).**

It was reported that families who care for a member with chronic illness have to deal with a high level of burden and distress **(Nuraini, Tumanggor, Hungerford, Lees & Cleary, 2021)** emphasizing that the clinical features of schizophrenia have been well documented as predictors of caregiving burden, such as a longer duration of illness, greater severity of disorganized symptoms, and worse functioning status compared with psychiatric diagnoses. The emergence of uncooperative or disturbed behaviors in severe mental illnesses was found to determine the caregiving burden to a greater degree **(Peng, Chen, Zhang, Yao, Li, Long & Ran, 2019)**

Empathy is a multidimensional skill that encompasses moral, cognitive, emotional, and behavioral aspects and is defined using different theories which states that empathy is comprised of cognitive and affective domains. Cognitive empathy concerns the process of understanding the emotions of others, whereas affective empathy concerns the process of feeling the same emotions as another person. This skill is an important element in the relationship between caregiver and care recipient, as it enables providing more humanized, better-quality care and assists in the creation of a therapeutic bond **(Maximiano-Barreto, Bomfim, Borges, de Moura, Luchesi & Chagas, 2021).**

Empathy is beneficial in many contexts. However, in the context of providing care for a loved one. A caregiver with high emotional empathy may feel or share the person's distress, which can lead to the caregiver being overwhelmed by the caregiver's own sense of distress, making high emotional empathy problematic for caregivers by increasing their distress vicariously **(Hua, Wells, Brown & Levenson, 2021).**

Significance of the study:

Schizophrenia is one of the most severe chronic mental illnesses that disrupt the functioning of patients in various cases. Fifty percent of the beds of psychiatric hospitals are occupied by patients with schizophrenia. Among mental illnesses, a patient with schizophrenia imposes the highest degree of burnout on his family. Hence, this disease is one of the most critical and disabling mental illnesses **(Goodarzi, Mohammadi Shahboulaghi, Rahgoi & Biglarian, 2018).**

Caring for relatives with schizophrenia may result in a significant burden to caregivers. It is estimated that as high as 90% of caregivers experience moderate to severe burden, and among caregivers of patients diagnosed with schizophrenia are a potential high-risk group for mental disorders. Caring for a relative with schizophrenia has been ranked a greater burden than that associated with caring for patients diagnosed with other psychiatric disorders **(Treichel, Jardim, Kantorski & Alves, 2020).**

Due to the problems that caregivers face, from social to financial to emotional, they became prone to developing serious mental problems; depression is known to be one of the most common psychological consequences of caregiving, especially for families caring for severe mental illness patients. It has been shown that the prevalence of depression among caregivers is two times higher than the general population **(Sun, Ge, Meng, Chen & Liu, 2019).**

Several studies showed that emotional and cognitive empathy are both helpful in various backgrounds in everyday relationships however, in providing care for relatives, these components of empathy may have different influences on caregiver's mental health and well-being **(Jütten, Mark & Sitskoorn, 2019; Lee et Brennan & Daly, 2001).** Only few studies face this issue for caregivers of patient diagnosed with schizophrenia spectrum disorder. Hence, this study aimed to assess emotional empathy, burden, and depression among family caregivers of patient with schizophrenia **(Hua et al., 2021)**

Aim of this study:

The aim of the present study was to assess emotional empathy, burden, and depression among family caregivers of patient with schizophrenia.

Subjects & Methods:

Research design:

Cross sectional descriptive design was used in this study.

Research setting:

The study was conducted in the outpatient clinic of the Aswan hospital for mental health and addiction treatment which affiliated to the Ministry of Health.

Sample:

Purposive sample of 186 family caregivers of patients with schizophrenia who were attending follow-up at outpatient clinic and who fulfilled the following inclusion criteria:

1. Age: adult caregiver who are closely related and directly involved with   care of the patient with schizophrenia for at least one years.
2. Free from any severe physical and psychiatric disorders.
3. Not responsible for caring of other patient in the family.

Tools of data collection:

Data collection was obtained by using three instruments as follow:

1- Interview questionnaire included the following:

a. demographic data of caregivers: it included age, sex, level of education, marital status, employment, family income, relation to patient and caregiving duration.

b. demographic data of patient: it included age, sex, educational level and duration of illness.

c. caregiver's knowledge about Schizophrenia: it designed to assess caregiver knowledge about schizophrenia, it includes nature, causation, clinical features, treatment, and prognosis of schizophrenia.

Scoring system:

It included 6 questions, statements responses in which "Yes," =3, "No"=2 and "I don't know"=1 except for the last question reversed in which "Yes," =2, "No"=3 and "I don't know"=1. The possible total knowledge score range 6 -18; Score 6 -13 is considered unsatisfied and 14-18 is considered satisfactory.

2-Burden assessment schedule (BAS): Burden assessment schedule is a valid and reliable tool. it developed by **Thara et al. (1998)** and adopted by the researcher to assess objective and subjective burden experienced by the caregivers of chronic mental ill patients. it has a total of 40 items, the scale measuring 9 different areas of objective and subjective caregiver burden; spouse relation factor, physical and mental health factor, external support factor, caregiver's routines, financial support of patient, taking responsibility, socialization, patient's behavior, and caregiver's strategy. The scale included 40 items each item is rated on a three-point Likert Scale in which not at all =1, to some extent =2, and "very much" =3. The scale has good reliability with Cronbach's alpha ranges from 0.62 to 0.82 for each of the factors (**Bhowmik, Gaekwad, Chaudhury, Prakash & Saldanha, 2023).**

Scoring:

The total score ranged between 40-120.
Mild burden = 40-66
Moderate burden = 67-93
Sever burden = 94-120

3-Multi-Dimensional Emotional Empathy Scale (MDEES).

The original MDEES scale is valid and reliable tool. It was developed by **Caruso and Mayer, (1998)** and adopted by the researcher**.** It measures multiple dimensions of emotional empathy. The scale consists of six dimensions: suffering, positive sharing, responsive crying, emotional attention, feel for others, and emotional contagion.

The scale consists of 30 items rated on a 5-point Likert scale in which strongly disagree=1, disagree =2, neutral =3, agree =4, and strongly agree =5 for each item. There are six negatively worded items were included in the scale (items 4, 7, 13, 15, 17, 20). Internal consistency for all 30 items was computed using Cronbach's alpha: α =.88 **(Alloway, Copello, Loesch, Soares, Watkins, Miller & Ray, 2016).**

Scoring:

The total scale is ranged between 30-150

30-69= low emotional empathy
70-109= moderate emotional empathy
 110-150= high emotional empathy

4-IV- Center for Epidemiologic Studies Depression (CES-D)

CES-D is a valid and reliable tool. it was developed by **radloff, (1977)** and adopted by the researcher. CES-D is one of the most widely used instruments for assessing depression in family caregivers of patient with psychiatric disorders. The items of the scale   are symptoms

associated with depression**.** It includes 20 items rated on a 4-point Likert scale (0-3) which are: Rarely (Less than 1 day) =0, Some (1-2 days) =1, Occasionally (3-4 days) =2 and Most (5-7 days) =3. The CES-D has exhibited a good internal consistency with Cronbach's alpha coefficients ranging from 0.83 to 0.95 **(Jiang, Wang, Zhang, Li, Wu, & Tao, 2019).**

-Scoring system:
The score is the sum of the 20 questions. Possible range is 0-60. A score of 16 points or more is considered having depressive symptoms **(Vilagut et al., 2016)**

A. Preparatory phase:
It includes reviewing past, current, local and international related literature and theoretical knowledge of various aspects of the study using books, articles, periodicals, journals and internet.

In this procedure, the researcher also translated the instruments from English formats into Arabic language, rendered the same English formats into bilingual experts for more verification of translation of the Arabic formats, the resulting versions were translated back into the original language by other bilingual experts, and minor discrepancies in the content were found and necessary modifications were done.

B. Pilot study:

The pilot study was carried out at the end of January 2022 before data collection on a group of 10% of the sample (18) family caregivers having patient with schizophrenia) who were later included in the study sample to test and evaluate the clarity, feasibility, and applicability of the research tools, in order to estimate the time needed to collect data. According to the pilot study results, no necessary modifications were done.

C. Fieldwork:
The actual fieldwork for the process of the data collection has consumed six-months started at beginning of March 2022 and was completed by the end of August 2022, through the following steps:

The researcher individually interviewed the caregivers who agreed to participate in the study. After distributing the tools, the researcher explained the aim and objectives to them and

assisted each family caregiver in filling in the sheet.

Data were collected daily for 4 days a week (Sunday, Monday, Wednesday, and Thursday) during the morning shift (9.00 a.m:2.00p.m.) for 25-30 minutes for each participant. Confidentiality of obtained information was assured, and the subjects were informed about their right to participate or not in the study. The participants were also assured about anonymity, and that data will only be used for the purpose of the study

D. Ethical considerations:
After securing official requirements for carrying out this study, the subjects were informed about choosing to participate or not. The researcher took oral consent from the caregivers if they agreed to participate, besides, they were informed about their right to withdraw at any time without giving any reason. Data were anonymous, and only used for the purpose of the study. The researcher explained the aim and nature of this study to the caregivers with reassurance about confidentiality of the information given and that it will be used for scientific research only.

III- Administrative design:
The researcher in order to obtain an approval to conduct the research study, the researcher received official permissions from the following authorities:

The chairperson and the council members of Psychiatric/ Mental Health Nursing Department, the Ethical Committee at Faculty of Nursing Ainshams University, and official letters from the Dean of the faculty to responsible authorities in the Aswan hospital for mental health and addiction treatment.

IV-Statistical design:
The statistical analysis of data was done by using the computer software of Microsoft Excel Program and Statistical Package for Social Science (SPSS) version 22. Data were presented using descriptive statistics in the form of frequencies and percentage for categorical data, the arithmetic mean (X) and standard deviation (SD) for quantitative data. R-test to assess the correlation between the study variables and P-value to test association between two variables. Degrees of significance of results were considered as follows:

-P-value > 0.05 Not significant (NS)
- P-value ≤ 0.05 Significant (S)

- P-value ≤ 0.01 high significant (HS)

Results:

Table (1) This table reveals that, two fifths (40.3%) of the studied caregivers' age was more than 50 years old, and their mean age was 46.24±12.31 years. As regard to their sex and marital status, more than half (53.8% & 54.8%) of them were female and married respectively. Regarding the relation to the patient, less than one third (31.2%) of them were mothers. In relation to the educational level and employment of the caregivers under the study, more than two fifths (43.5%) and more than half (53.2%) of them finished their primary education and were employed respectively. Regarding the adequacy of monthly income, three quarters (75.8%) of them had adequate monthly income. In relation to caregiving duration, less than two thirds (63.4%) of caregiving duration was more than 5 years.

Table (2): shows that, less than one quarter (23.1%) of the studied patients` age ranged from 31: 35 years old, their mean age was 35.9±8.91 years. As regard to sex and educational level, less than three fifths and half (59.7% & 50%) of them were male and finished secondary education respectively. In relation to duration of patient`s illness, less than two thirds (63.4%) of them had the illness for more than 5 years

Figure (1) illustrates that, about three quarters (74 %) of the studied caregivers of patient with schizophrenia had unsatisfactory level of knowledge about schizophrenia, while one quarter (26%) of them had satisfactory level of knowledge about schizophrenia.

Figure (2) shows that, more than two thirds (67.7%) and more than half (63.5%, 60.8%, 59.7%, 57% & 55.9%) of the studied caregivers had high emotional empathy regarding responsive crying, positive sharing, emotional attention, suffering, feel of others, and emotional contagion respectively.

Figure (3) illustrates that, three fifths (60.8%) of the studied caregivers of patient with schizophrenia had high level of emotional empathy, while only (14%) of them had low level of emotional empathy.

Figure (4) shows that, more than half (60.8%, 59.1%, 54.3% & 51.1%) and less than half (46.2%) of the studied caregivers had severe burden at physical and mental health factors, socialization factors, patient behavior factor, caregivers' routine factors, and taking responsibilities factor respectively. Also, less than three quarter (72.5%) and more than half (63.3%, 58.6%, & 58.1%) of the studied caregivers had moderate burden at spouse related factors (married caregivers), caregiver's strategies factor, financial support factors, and external support factor, respectively.

Figure (5) shows that, less than three quarters (73.6%) of the studied caregivers had severe level of total burden. Also, only (11%) of them had very mild level of total burden. While only (5.4%) of them had moderate level of total burden.

Figure (6) illustrates that, the majority (85.5%) of the studied caregivers of patient with schizophrenia had depressive symptoms.

Table (3) shows that, there were weak negative correlations between total levels of knowledge of the studied caregivers and their burden, and depression in which r=-.308, & -.261 at p value =.000 respectively. Also, there was a weak positive correlation between total levels of knowledge of the studied caregivers and their emotional empathy in which r= .363 at p value =.000.

Also, there were strong positive correlations between total levels of burden of the studied caregivers and their level emotional empathy and depression of in which r=.833, & .879 at p value =.000. Also, there was a strong negative correlation between total levels of emotional empathy of the studied caregivers and their level of depression in which r= -.884 at p value =.000.

Table (1): Frequency distribution of the studied caregivers of patient with schizophrenia according to their demographic characteristics (186).

Items	NO.	%
Age (year)		
18:25 years old	14	7.5
26:30 years old	11	5.9
31:35 years old	20	10.8
36:40 years old	12	6.5
41:50 years old	54	29.0
More than 50 years old	75	40.3
Mean ±SD 46.24±12.31		
Sex		
Male	86	46.2
Female	100	53.8
Relation to patient		
Mother	58	31.2
Father	32	17.2
Brother/ Sister	52	28.0
Husband/ Wife	32	17.2
Daughter/ son	12	6.5
Marital status		
Single	33	17.7
Married	102	54.8
Divorced	37	19.9
Widow	14	7.5
Educational level		
Illiterate	28	15.1
Primary education	81	43.5
Secondary education	47	25.3
University education	30	16.1
Employment		
Employed	99	53.2
Unemployed	87	46.8
Caregiving duration		
1-5 years	68	36.6
More than 5 years	118	63.4
Adequacy of monthly income		
Enough=adequate	141	75.8
Not enough	39	21.0
Adequate and sufficient	6	3.2

Table (2): Frequency distribution of the studied patients with schizophrenia according to their demographic characteristics (n=186).

Items	No.	%
Age (year)		
18:25 years old	37	19.9
26:30 years old	24	12.9
31:35 years old	43	23.1
36:40 years old	33	17.7
41:50 years old	40	21.5
More than 50 years old	9	4.8
Mean ± SD 35.9±8.91		
Sex		
Male	111	59.7
Female	75	40.3
Educational level		
Illiterate	20	10.8
Primary education	60	32.3
Duration of patient`s illness	93	50.0
Less than 5 years	68	36.6
More than 5 years	118	63.4

Figure (1): Frequency distribution of the studied caregivers according to their total knowledge about schizophrenia disorder (n=186).

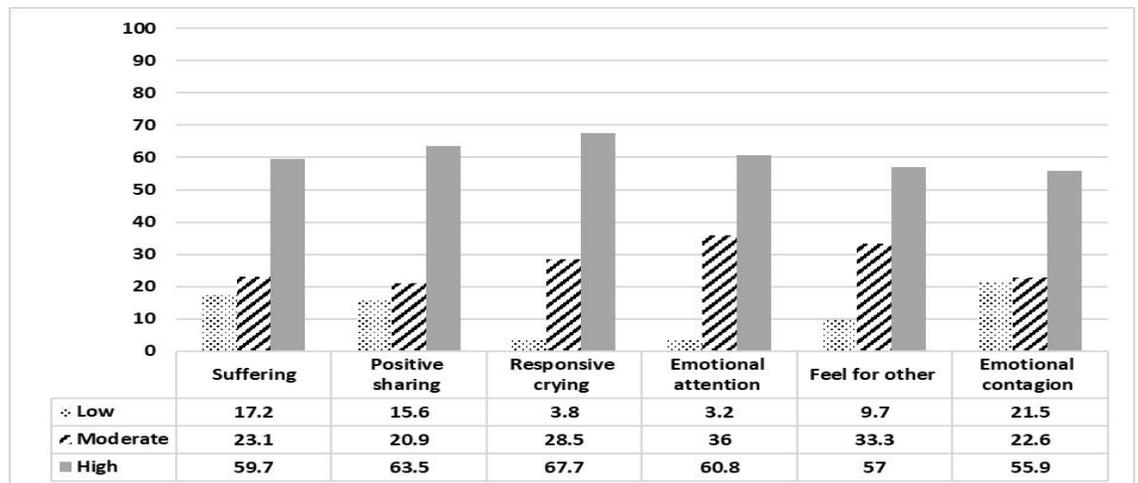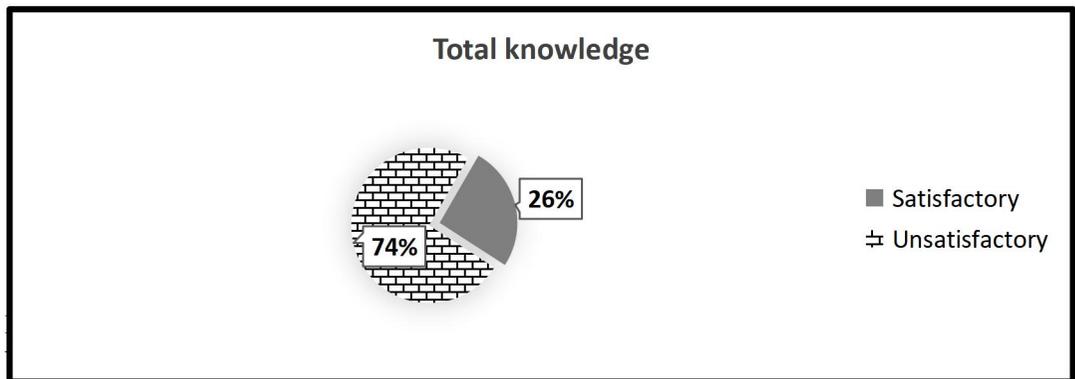|	Suffering	Positive sharing	Responsive crying	Emotional attention	Feel for other	Emotional contagion
Low	17.2	15.6	3.8	3.2	9.7	21.5
Moderate	23.1	20.9	28.5	36	33.3	22.6
High	59.7	63.5	67.7	60.8	57	55.9

Figure (3): Frequency distribution of the studied caregivers of patient with schizophrenia according to their level of emotional empathy (n=186).
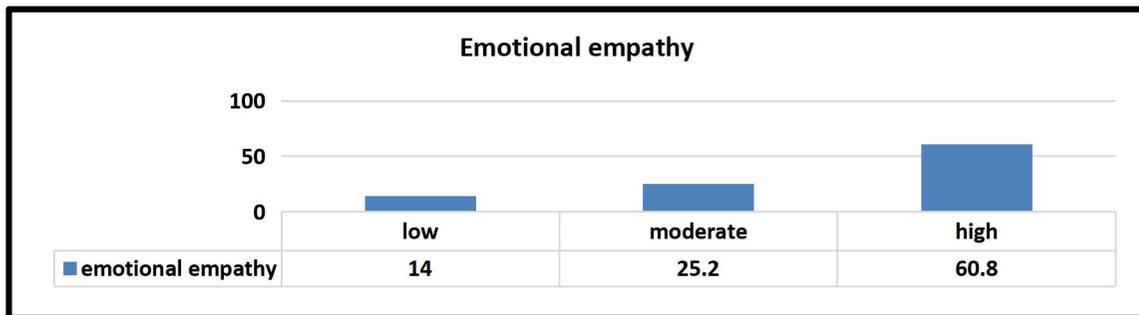

Figure (4): Frequency distribution of the studied caregivers of patient with schizophrenia according to their level of burden of related factors.
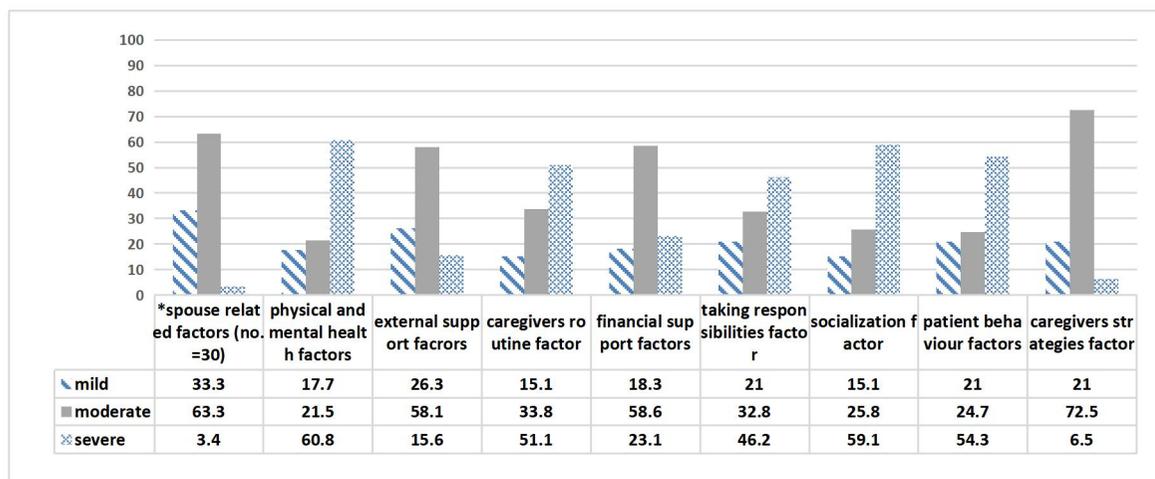

	*spouse related factors (no.=30)	physical and mental health factors	external support facrors	caregivers routine factor	financial support factors	taking responsibilities factor	socialization factor	patient behaviour factors	caregivers strategies factor
mild	33.3	17.7	26.3	15.1	18.3	21	15.1	21	21
moderate	63.3	21.5	58.1	33.8	58.6	32.8	25.8	24.7	72.5
severe	3.4	60.8	15.6	51.1	23.1	46.2	59.1	54.3	6.5

Figure (5): Frequency distribution of the studied caregivers of patient with schizophrenia according to their total levels of burden (n=186).
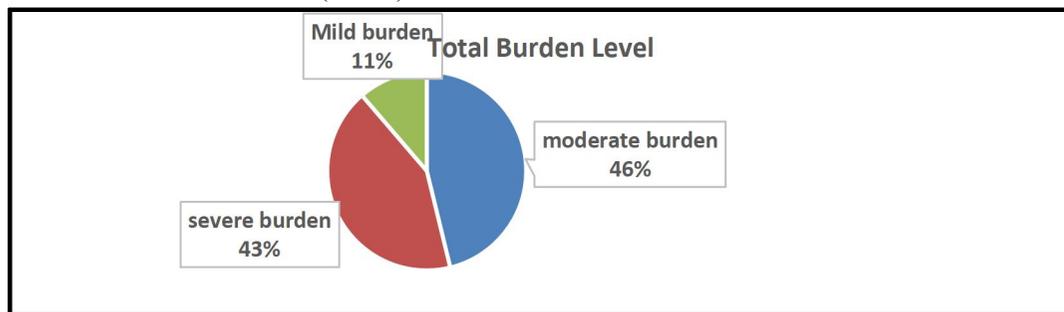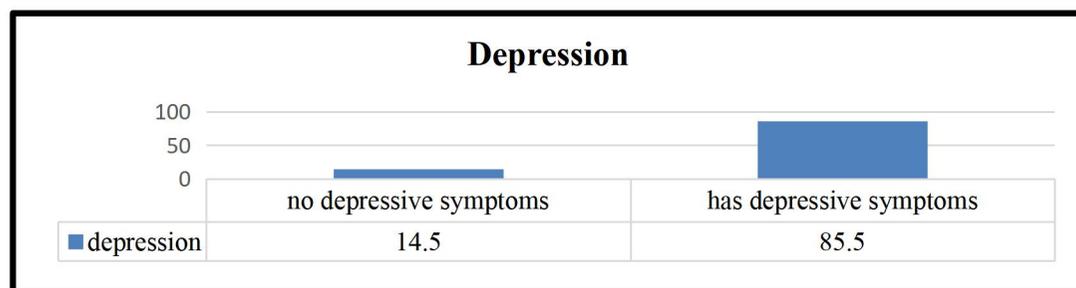
Figure (6): Frequency distribution of the studied caregivers of patient with schizophrenia according to their depressive symptoms (n=186).

Table (3): Correlation between knowledge, emotional empathy, burden, and depression among the studied caregivers of patients with schizophrenia (n=186).

The studied variable		Total knowledge	Total emotional empathy	Total burden	Total depression
Total knowledge	**r test**				
	P value				
Total emotional empathy	**r test**	.363**			
	P value	.000			
Total burden	**r test**	-.308**	.833**		
	P value	.000	.000		
Total depression	**r test**	-.261**	-.884**	.879**	
	P value	.000	.000	.000	

*Significant at p ‹ 0.05.   **highly significant at p ‹ 0.01.

Discussion:

Part I: Demographic characteristics of the patients and family caregivers under the study.

Regarding the demographic characteristics of studied caregivers, the finding of the current study showed that shows that, two fifths of the studied caregivers' age was more than 50 years old, and their mean age was 46.24±12.31 years. Regarding the relation to the patient, less than one third of them were mothers. In relation to the educational level and employment of the caregivers under the study, more than two fifths and more than half of them finished their primary education and were employed respectively.

These results are consistent with the study conducted by **Yu, Liu, Zhou, Chen, Zhang, Hu & Xiao, (2018)** who entitled "Assessment of burden among family caregivers of schizophrenia" and found most of the caregivers were above 50 years, and most of them with primary education. Slightly more than half of the caregivers were employed and

most of their relationships to the care-recipient were parents.

The present study is in disagreement with a study conducted by **Rahmani, Roshangar, Gholizadeh & Asghari, (2022)** and entitled "Caregiver burden and the associated factors in the family caregivers of patients with schizophrenia" and found that the mean age of caregivers was less than 50 years. more participants were studied up to high school, and half of them were spouse of the patient and most of the participants were unemployed.

In relation to caregivers' gender and marital status of current study, more than half of them were female and married.

These results are in agreement with the study carried out by **Aubeeluck & Luximon-Ramma, (2020),** and entitled "the burdens of family caregivers of schizophrenia in Mauritius" and found that more than half of the carers were female and married.

Furthermore, three quarters of the studied caregivers in current study had adequate monthly income.

This result is in similar with a study conducted by **García-Mochón, Peña-Longobardo, del Río-Lozano, Oliva-Moreno, Larrañaga-Padilla & García-Calvente, (2019)** to assess "determinants of burden and satisfaction in informal caregivers" and found that most of caregivers have adequate family income.

However, the present study is in disagreement with a study carried out by **Rahmani, et al., (2022),** and found that Most of the caregivers perceived their income as inadequate.

Also, the result of the current study showed that, less than two thirds of them the studied patient had the illness for more than 5 years, and the caregiving duration was more than 5 years.

These results are in line with a study carried by **Rahmani et al., (2022)** and mentioned that the average disease duration was more than 10 years, and most of participants provided caregiving for more than ten years.

Regarding the demographic characteristics of studied patients, the finding of the current study showed that, less than one quarter of the studied patients` age ranged from $31 \leq 35$ years old, their mean age was 35.9 ± 8.91 years. As regard to their gender, less than three fifths and half of them were male.

These results are in accordance with **Souza, Guimarães, de Araújo Vilela, de Assis, Oliveira, Souza & Barbosa, (2017)** who carried out a study to assess "Factors associated with the burden of family caregivers of patients with mental disorders" and found that less than third of the studied subjects their age was under 40 years.

Also, these results are consistent with a study carried out by **Ribé, Salamero, Pérez-Testor, Mercadal, Aguilera & Cleris, (2018)** to assess "Quality of life in family caregivers of schizophrenia patients in Spain: caregiver characteristics, caregiving burden, family functioning, and social and professional support" and found, the majority were men underage of 40 years. However, these finding are contradicted with the finding of, **Sharma, (2017)** who carried out a study entitled "Burden, perceived stigma and coping style of caregivers of patients with schizophrenia and bipolar disorder" and indicated that age range of studied patients with schizophrenia was 40<59 years and half of them were male.

In relation to educational level of patient in the current study, half of them were finished secondary education.

The finding is in similar with the study who carried by **Thunyadee, Sitthimongkol, Sangon, Chai-Aroon & Hegadoren, (2015)** who entitled **"**Descriptive characteristics of the individuals with schizophrenia" indicated that almost half of them having some secondary school education.

However, the present study is contradicted with **Marimbe, Cowan, Kajawu, Muchirahondo & Lund, (2016)** who achieved a study to assess "Perceived burden of care and reported coping strategies and needs for family caregivers of people with mental disorders" and mentioned that less than half of studied participants had basic education.

Part II: Knowledge of caregivers about schizophrenia:

Data analysis of the current study showed that three quarters of the studied caregivers of patient with schizophrenia had unsatisfactory level of knowledge about schizophrenia, while one quarter of them had satisfactory level of knowledge about schizophrenia.

This could be explained as, forty three percent of studied caregivers finished primary education. increase caregivers' education level tends to have more knowledge related to the disease.

This is supported with a study conducted by **Koschorke, Padmavati, Kumar, Cohen, Weiss, Chatterjee & Thornicroft, (2017)** to assess "Experiences of stigma and discrimination faced by family caregivers of people with schizophrenia in India" and found that knowledge about schizophrenia was relatively low in the sample of caregivers taking part in their study.

However, the result is in disagreement with study carried by **López, Gamez, Mejia, Calderon, Lopez, Ullman & Kopelowicz, (2018)** and entitled "Psychosis literacy among Latinos and their caregivers" and stated that caregivers reported significantly satisfactory psychosis literacy.

Part III: Emotional empathy among caregivers of patients with schizophrenia disorder.

Finding of current study show that, more than two thirds and more than half of the studied caregivers had high emotional empathy regarding

responsive crying, positive sharing, emotional attention, suffering, feel of others, and emotional contagion.

This could be due to those empathetic individuals are possibly capable of placing themselves in the position of others and experiencing emotions and feelings stemming from other individuals, thereby understanding the needs of others based on their motivations.

The study done by **Tully, Ames, Garcia & Donohue, (2016)** that entitled "Quadratic Associations Between Empathy and Depression as Moderated by Emotion Dysregulation" supported the current study analysis which indicated that tendencies to respond to others' distress with excessively high affective empathy in combination with poor emotion regulation are high.

Also, these results are in accordance with a study conducted by **Borges et al., (2021)** that entitled "Depression and empathy in health professionals who work in the long-term care institutions for older adults" and stated that the frequent use of the empathic capacity to deal with the patient's suffering leads to physical and emotional exhaustion.

Also, finding of current study revealed that three fifths of the studied caregivers of patient with schizophrenia had high level of emotional empathy.

previous literature has demonstrated that family relationships can have a positive impact on empathy, resulting in higher empathy levels. Moreover, a close relationship between two individuals can generate helping behavior and assist in the development of affective empathy, which may help explain the strong relationship demonstrated between affective empathy and informal caregiver status in the current study (**Maximiano-Barreto et al., 2022**). This can explain why three-fifths of the studied caregivers of patients with schizophrenia had a high level of emotional empathy

Part IV: Burden among caregivers of patients with schizophrenia disorder.

The result of current study shows that, more than half and less than half of the studied caregivers had severe burden at physical and mental health factors, socialization factors, patient behavior factor, caregivers' routine factors, and taking responsibilities factor respectively. Also, less than three quarter and more than half of the studied caregivers had moderate burden at Spouse related factors, caregiver's strategies factor, financial support factors, and external support factor.

Also, less than three quarters of the studied caregivers had severe level of total burden.

This might be due to caregiving for people with a severe mental disorder such as schizophrenia creates a challenge for caregivers due to increasing demands and responsibilities, and there is increasing concern about their ability to manage or cope. This elevated level of burden might be owing to the physical and emotional drain, exhaustion of caregiving process, the stress of coping with disruptive behavior, disruption of family routines, the stigma they face, and the restriction of social activities to economic hardship.

The result is supported with a study carried by **Stanley, Balakrishnan & Ilangovan, (2017)** who assessed "psychological distress, perceived burden and quality of life in caregivers of persons with schizophrenia" and found high perceived burden in caregivers of patients with schizophrenia.

This result is contradicted with a study carried out by **Rahmani et al., (2022)** who mentioned that participants experienced a high level of burden concerning their caregiving role, with 38.2% of the caregivers experiencing a severe caregiving burden, 29.4% perceived moderate caregiving burden, and 19.39% reported mild caregiving burden.

Part V: Depression among caregivers of patients with schizophrenia disorder

Data analysis of the current study showed that the majority of the studied caregivers of patient with schizophrenia had depressive symptoms.

High prevalence of depressive symptoms among caregivers of schizophrenics can be explained primarily due to many burdens; financial burden, role burden, physical burden, time burden and emotional burden. Also, stigma attached to schizophrenia plays an important part in the high prevalence of depressive symptoms among caregivers.

This finding is in agreement with a study done by **Stanley** et **al., (2017)** and quality of life in caregivers of persons with schizophrenia" and found high depressive symptoms among caregivers of persons with schizophrenia.

Also, the finding is in line with study conducted by **Chou, Hsiao, Chang & Yen,**

(2021) to assess "Predictors of depressive symptoms in caregivers of patient with mental disorder: A one-year follow-up study" and stated that more than two-thirds of caregivers reported depressive symptoms.

Part VII: Correlation between the studied variable

Regarding the correlation between knowledge, emotional empathy, burden, and depression among the studied caregivers of patients with schizophrenia, Data analysis revealed that there were weak negative correlations between total level of knowledge of the studied caregivers and their burden, and depression.

This could be due to more than half of caregivers in current study finished basic education and had unsatisfactory level of knowledge about the disease. Also, more than two thirds of their age were above forty years and caring for patient for more than five years.

Also, this could be explained as, when the family caregivers did not know the nature of their loved ones' mental illness, don't know how the illness would develop in the long term or how they would be able to manage their patients when they are in a critical condition, this increase caregiver distress as burden and depression.

These results are supported with the study done by **Ebrahimi et al., (2018)** who mentioned that there was negative correlation between distress level of the studied caregivers and their knowledge.

Also, these results are supported with the study done by **Wan, & Wong, (2019)** to assess "Stress and burden faced by family caregivers of people with schizophrenia and early psychosis in Hong Kong" and found that there were negative correlations between levels of knowledge of the studied caregivers and their burden and depression.

Also, the result of current study revealed that there was a weak positive correlation between total levels of knowledge of the studied caregivers and their emotional empathy.

This could be explained as when caregivers had good knowledge, in the process of intellectual cognition, interpretation, sensitivity, conclusion, and intuition will produce good empathy and care behavior from caregivers.

This result is supported with a study conducted by **Putri & Bintari, (2017)** that entitled "Mindfulness-Based Stress Reduction (MBSR) for Reducing Stress Among Informal Caregivers of Schizophrenia" and indicated that increase in mindfulness and knowledge of participants about their condition as an informal caregivers increase empathy with the patients and accept responsibility.

Also, the result is in line with a study achieved by **Wijma, Veerbeek, Prins, Pot & Willemse, (2018)** about "A virtual reality intervention to improve the understanding and empathy for people with dementia in informal caregivers" and found subjective knowledge about illness is essential for caregivers to develop empathy and a general comprehension for their patients.

In addition, there was strong positive correlation between total levels of burden of the studied caregivers and their level emotional empathy.

This could be explained as caregivers of patient of schizophrenia with high in emotional empathy may become overly enmeshed, taking on the added burden of feeling the distress and suffering experienced by a loved one who is dealing with the ravages of a cruel, distressing, and chronic illness. For these caregivers, chronically experiencing a combination of their own distress and that of the person in their care could greatly heighten risk for developing symptoms of depression and anxiety.

This finding is in line with a study conducted by **Hua et al., (2021)** to assess "Emotional and cognitive empathy in caregivers of people with neurodegenerative disease: Relationships with caregiver mental health" and indicated that high levels of emotional empathy are associated with poorer mental health in the context of others' suffering among family caregivers.

However, this result is in disagreement with a study achieved by **Di Lorenzo, Girone, Panzera, Fiore, Pinelli, Venturi & Ferri, (2021)** to assess "Empathy and perceived burden in caregivers of patients with schizophrenia spectrum disorders" and found reduced level of emotional empathy is concomitant with high burden. They found that high emotional empathy protective against burden among family caregivers.

Also, a study conducted by **Jütten, Mark & Sitskoorn, (2019)** to assess "Empathy in informal dementia caregivers and its relationship with depression, anxiety and burden" and reveal no significant relationship between emotional empathy and burden among family caregivers.

Furthermore, result of the current study revealed that there was strong positive correlation between total levels of burden of the studied caregivers and their depression.

It might be explained that caregivers of patients with schizophrenia experience more stress due to the nature of the symptoms as well as the prolonged duration of illness. Spending more time with the patient, being assaulted by the patient, interruption to work, disputes with children and other relatives and feelings of increased psychological burden are factors associated with caregiver depression.

This finding in line with a study conducted by **Sun et al., (2019)** to assess "the influence of social support and care burden on depression among caregivers of patients with severe mental illness in rural areas of Sichuan, China" and found positive correlation between care burden and depression in caregivers of patient with severe mental disorder.

Also, the result of current study showed that there was a strong negative correlation between total levels of emotional empathy of the studied caregivers and their level of depression.

This is in line with a study conducted by **Sutter, Perrin, Chang, Hoyos, Buraye & Arango-Lasprilla, (2014)** to assess "Linking family dynamics and the mental health of Colombian dementia caregivers" and revealed that empathy was significantly negatively related to depression.

Also, this result is also in agreement with findings from previous studies in the general population and in caregivers of psychiatric patients, where emotional empathy in general was perceived as a beneficial defensive psychological mechanism in different stressful life situations **(Di Lorenzo et al., 2021; Kerem et al., 2001; Shim et al., 2012; Sutter et al., 2014)**

However, this result is in contradiction with the finding by **Wilkinson, Whittington, Perry & Eames, (2017)** who focused on the relationship between empathy and burnout in

health professionals and mentioned that there was positive correlation between total levels of emotional empathy of the studied caregivers and their level of depression, a concept related to burnout. A possible explanation for this difference in results lie in the questionnaires used. the studies in the review by **Wilkinson et al. (2017)** used the burnout questionnaire MBI which includes the subscales emotional exhaustion, depersonalization, and personal accomplishment. However, this result measured caregiver depression using CES-D scale for assessing depression covers affective, psychological, and somatic symptoms. The items of the scale are symptoms associated with depression.

Furthermore, this study is in contradiction with previous studies **(Hua et al., 2021; Jütten et al., 2019; Maximiano-Barreto et al., 2021)** regarding the adverse impact of emotional empathy on their well-being of familial caregivers. The characteristics and size of the sample as well as the scale used to measure depressive symptoms may explain this divergence.

In general caregivers of patient with schizophrenia who experience severe burden had high emotional empathy and severe depressive symptoms.

Conclusion:

Caregivers of patient with schizophrenia who experience severe burden had high emotional empathy and severe depressive symptoms. Also, caregivers with high emotional empathy had mild depressive symptoms.

Recommendations:

1. Designing and implementing of psycho-educational supportive program for family caregivers of patients with schizophrenia to reduce their burden and depression and to enhance their coping abilities and quality of life to overcome their burden of caregiving.

2. Further qualitative research regarding emotional empathy, burden and depression among family caregivers of patients with Schizophrenia.

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