

Effect of Educational Supportive Program on Knowledge, Emotional Empathy, and Burden of Schizophrenic Patients' Caregivers

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Abstract

Background: Schizophrenia is a chronic and inarguably one of the most debilitating psychiatric syndromes. Caregivers of Schizophrenic patients load different kinds of burdens among them. Empathy enables providing more humanized and better caregiving. Educational supportive program for patients and their families provide information and support to better understand and cope with illness. **Aim:** To investigate the effect of educational supportive program on knowledge, emotional empathy, and the burden of schizophrenic patients' caregivers. **Design:** A quasi-experimental research design was utilized in this study. **Subjects:** A purposive sample of 150 schizophrenic patients and their caregivers were included. **Setting:** The study was conducted at the outpatient clinic at Sohag Psychiatric Hospital for Mental Health. **Tools of data collection:** Three tools were used in this study: (1) Structured interviewing questionnaire, (2) Caregiver's knowledge regarding Schizophrenia, (3) Burden Assessment Schedule (BAS), and (4) Multi-Dimensional Emotional Empathy Scale (MDEES). **Results:** The results showed that there was a high statistically significant improvement in caregiver's knowledge emotional empathy and burden of schizophrenic patients' caregivers observed post-educational supportive program intervention compared to pre-educational supportive program. There were strong positive correlations between the total levels of burden of the studied caregivers and their level of emotional empathy. Also, there was a strong correlation between the total levels of emotional empathy of the studied caregivers and their level of knowledge. **Conclusion:** The implementation of an educational supportive program has significantly improved schizophrenic patients' knowledge, emotional empathy, and burden. **Recommendation:** An educational supportive program is recommended to see as a better for family caregivers of patients with schizophrenia to improve their knowledge, and emotional empathy, and reduce their burden to help them cope and overcome their burden of caregiving.

Keywords: Burden, Caregivers, educational supportive program, Emotional empathy, Knowledge, Schizophrenia.

Introduction

According to the **World Health Organisation (2019)**, schizophrenia is a serious mental condition that is characterized by abnormalities in thinking, perception, emotions, language, sense of self, and behavior. A serious mental illness with a lifetime frequency of 0.4% worldwide, is schizophrenia. It has terrible impacts on patients and those who care for them, and it costs health care systems a fortune. Schizophrenia is a diverse condition involving cognitive dysfunction, anhedonia, avolition, social disengagement, and thought disorders

as well as positive symptoms (delusions, hallucinations, and thought disorders) (**Winship et al., 2019**).

Relatives with mental illnesses benefit greatly from the care and assistance that family caregivers can give them. It is commonly established that effective medical care is essential for patients to function and that the standard of care provided by family carers is also important (**Rahmani et al., 2019**). Family caregivers are essential in providing care for schizophrenia and are involved in a variety of responsibilities, including performing activities of daily living, preventing accidents, giving medication, managing behavioral issues and money, and looking

for and securing resources (Wan & Wong, 2019). According to a significant quantity of literature (Stanley et al., 2017), high levels of psychological discomfort are prevalent.

The damaging and degenerative character of schizophrenia causes caregivers of patients with the disorder to experience chronic stress in their daily lives. Constant care for patients with schizophrenia may be detrimental to family members' mental health, lead to missed work, put a strain on finances, and have a negative impact on leisure and social activities as well as family relationships. This may increase psychological distress and affect the family's capacity to cope and function well (Qiu et al., 2020).

A caregiver's burden is defined as their assessment of damaging or stressful negative psychological pressure. It is derived from the process of caregiver-care-receiver contact, which is influenced by numerous factors related to the internal and external environments (Pendergrass et al., 2018). The clinical characteristics of schizophrenia, such as a longer illness duration, more severe disorganized symptoms, and worse functioning status compared to psychiatric diagnoses, have been well documented as predictors of caregiving burden. It has been reported that families who care for a member with a chronic illness deal with a high level of burden and distress (Nuraini et al., 2021). A bigger degree of the caregiving burden was discovered to be determined by the onset of uncooperative or disturbed behaviors in severe mental diseases (Peng et al., 2019).

Empathy is a multifaceted skill that includes moral, cognitive, emotional, and behavioral components. According to many views, empathy is made up of affective and cognitive domains. Affective empathy involves experiencing the same emotions as another person, while cognitive empathy is concerned with the process of comprehending others' emotions. This ability is crucial to the interaction between a caregiver and a care recipient because it facilitates the delivery of more individualized, high-quality care and aids in the development of a therapeutic link (Maximiano-Barreto et al., 2021). In many circumstances, empathy is advantageous. But when it comes to taking care of a loved one.

High emotional empathy is troublesome for caregivers because it increases their misery vicariously. A caregiver with high emotional empathy may feel or share the person's distress, which can cause the carer to get overwhelmed by their sense of distress (Hua et al., 2021).

Burden refers to adverse events or difficulties affecting a person's life. Burden can be subjective emotional reactions of the caregivers including feelings of strain, low morale, and anxiety (Shiraishi & Reilly, 2021). The burden can also be the objective physical burden of care as a result of behavioral disruption of a specific patient and social effect on the caregiver's daily life. Additionally, it has been discovered that primary caregivers are burdened by issues with their spouses, their physical and mental health, outside assistance, their daily routines, their patients' needs, their ability to accept responsibility, their ability to manage other people, and their approach to providing care. Most patients in Indian settings are members of nuclear or joint families (Hsiao et al., 2020). Families thus offer their members financial, social, and emotional support. There is ample evidence that people with schizophrenia who already have a diagnosis are negatively impacted by negative emotions that are communicated within the family. Relatives who are dealing with patients who have schizophrenia in such familial situations go through a lot of stress. Primary caregivers are grieving and experiencing loss. They experience stigma and social isolation, just like the patients (Schuster et al., 2020).

A supportive educational program lessens the load on the patient and carer. Other forms of family interventions exist as well. The focus of this systemic interventional strategy is on the requirements of the patient and their family (Sharif et al., 2018). The patient's health and outcome are significantly influenced by the patient's family. Multiple sessions should be held with each person or each group of families as part of an educational and supporting program. Evidence indicates that an efficient educational supportive program will, at least partially, reduce relapse rates, improve rehabilitation, and improve family well-being (Pekkala E, & Merinder, 2021).

Significance of the study:

Caring for family members who have schizophrenia can be quite taxing on the caregivers. According to estimates, up to 90% of caregivers endure moderate to severe stress, and those who care for patients who

have been diagnosed with schizophrenia may be at a higher risk of developing mental illnesses than other caregivers. The hardship of caring for a family member with schizophrenia has been rated as being greater than the burden of caring for people with other psychiatric diseases (Treichel et al., 2020).

Carer stress is considered to be one of the most common psychological effects of caregiving, especially for families caring for people with severe mental illnesses. Depression is one of the most common psychological issues that carers experience. Studies have indicated that carers had a two times higher rate of depression than the overall population (Sun et al., 2019). However, when caring for family, both aspects of empathy may have different consequences on the caregiver's mental health and well-being. Several research studies have shown that emotional and cognitive empathy are both beneficial in varied backgrounds in everyday relationships (Jütten et al., 2019). This problem for caregivers of patients with schizophrenia spectrum illness has only seldom been studied. Since family caregivers of patients with schizophrenia often experience emotional empathy, strain, and depression, this study sought to evaluate these factors (Hua et al., 2021).

One of the most successful therapies in the treatment of schizophrenia patients is the family educational support program. Numerous studies have demonstrated that an educational support program for the relatives of schizophrenia patients not only improves the social and overall functioning of the patients but also their quality of life (Sharif et al., 2018). The contents of educational supportive program programs that are offered in mental health centers across the world vary significantly, despite certain similarities in the underlying ideas. This may be a result of the various demands and attitudes of persons obtaining the education (Papageorgiou et al., 2019).

Aim of the study:

This study aimed to investigate the effect of the educational supportive program on knowledge, emotional empathy, and the burden of schizophrenic patients' caregivers through:

Assessing the knowledge level among schizophrenic patients' caregivers.

Assessing the emotional empathy level among schizophrenic patients' caregivers.

Assessing the burden level among schizophrenic patients' caregivers.

Designing an educational supportive program according to caregivers; needs.

Evaluating the effect of the educational supportive program on knowledge, emotional empathy, and the burden of schizophrenic patients' caregivers.

Research hypothesis:

Schizophrenic patients' caregivers who receive educational supportive program are expected to experience improved knowledge, emotional empathy, and burden post-implementation than pre-implementation.

Subjects and Methods:

Research design:

A quasi-experimental research design was utilized in this study

Setting:

The study was conducted at the outpatient clinic at Sohag Psychiatric Hospital for mental health

Subjects:

A purposive sample of 150 schizophrenic patients and their caregivers were included who were attending follow-up at an outpatient clinic and who fulfilled the following inclusion criteria:

Age: Adult caregivers who are closely related and directly involved with the care of the patient with schizophrenia for at least 6 months.

Free from any physical and psychiatric disorders.

From both sexes

Tools of data collection:

Data collection was obtained by using three instruments as follow:

Tool (I): Structured Interview questionnaire included the following:

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

Patient personal data: It included age, sex, educational level, and duration of illness.

Tool (II): Caregiver's knowledge regarding Schizophrenia: This tool was developed by the researcher based on reviewing the recent related literature (Hua et al., 2021, Sun et al., 2019, Papageorgiou et al., 2019); it was developed and written in Arabic language. It is composed of open and closed-ended questions to assess the nurses' knowledge. It is designed to assess caregiver knowledge about schizophrenia, it includes nature, causation, clinical features, treatment, and prognosis of schizophrenia.

Scoring system:

It included 6 questions, and statements responses in which "Yes," =2, "No"=0 The possible total knowledge score ranges from 6 -12; a Score less than 6 is considered unsatisfactory, and a score equal to and more than 6 is considered satisfactory.

Tool (III): Burden assessment schedule (BAS): A schedule for burden assessment is a useful and trustworthy instrument. It was created by Thara et al. (1998) and used by the researcher to evaluate both the objective and subjective burden faced by those who care for individuals with chronic mental illnesses. The scale, which has a total of 40 items, assesses the burden of caregiving in nine different areas: the spouse relationship factor, the physical and mental health factor, the external support factor, the caregiver's routines, the patient's financial support, the caregiver's assumption of responsibility, the socialization of the patient, and the caregiver's strategy. There were 40 things on the scale. Each item is graded on a Likert scale with a three-point scale: not at all = 1, somewhat = 2, and "very much" = 3. The scale is highly reliable, with Cronbach's alpha values for each item ranging from 0.62 to 0.82 (Bhowmik et al., 2023).

Scoring:

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

Tool (IV): Multi-Dimensional Emotional EmpathyScale (MDEES).

The original MDEES scale is a useful and trustworthy instrument. It was created by

Caruso and Mayer in 1998. It evaluates various aspects of emotional empathy. Six factors make up the scale: emotional contagion, responsive sobbing, emotional attention, feeling for others, and good sharing.

The scale has 30 items, each of which is assessed on a Likert scale of 1 to 5 with 1 being strongly disagreed, 2 disagreed, 2 neutral, 4 agree, and 5 strongly agree. The scale contains six items with negative wording (items 4, 7, 13, 15, 17, 20). Cronbach's alpha was used to calculate the internal consistency for all 30 items, and the result was.88 (Alloway et al., 2016). The overall scale has a range of 30-150, with 30-69 being considered poor.

Validity of the tools:

Five professionals with expertise in the fields of mental health nursing and medicine evaluated the instruments' content validity, clarity, comprehensiveness, appropriateness, and relevance. The panel concluded that no changes were necessary to make the sentences clear and appropriate for the context.

Reliability of the tools:

The internal consistency approach was used in the current study to evaluate the reliability of the two scales. With Cronbach alpha coefficients for the second tool of 0.96 and showed high reliability.

Methods:

The Sohag Faculty of Nursing's Ethical Research Committee had to approve the study . The directors of the previously selected setting were asked in a letter by the dean faculty of nursing at Sohag University for their consent to conduct this study. The study's goal was to obtain permission for data collection.

A pilot study

To test and evaluate the clarity, viability, and applicability of the research tools and to estimate the time required to collect data, a pilot study was conducted at the end of February 2022 on a group of 10% of the sample (15 family caregivers of patients with schizophrenia) who were subsequently included in the study sample. The pilot study's findings indicated that no adjustments were required.

Ethical considerations:

After obtaining official approval to conduct this study, the subjects were notified and given the option of participating or not. If the caregivers

decided to participate, the researcher obtained their verbal agreement; additionally, they were advised of their freedom to withdraw at any time without providing a reason. The study's sole use for the data was to keep it anonymous. The carers were informed of the purpose and design of the study by the researcher, who also assured them that the information would be kept private and used solely for scientific purposes. They were told that their consent to participate in the study was completely voluntary and that they might revoke it at any moment, with no need to justify it.

Administrative design:

The chairperson of the Department of Psychiatric/Mental Health Nursing, the ethical committee at the Faculty of Nursing at Sohag University, and official letters from the dean of the faculty to responsible authorities in the previously chosen setting were the authorities from which the researcher officially received permissions to conduct the research study.

Implementation of the study included the following three phases:-

Assessment phase:

Using all official websites, including PubMed, Google Scholar, Medline database, CINAHL, EBESCO, Cochrane Database, and Scopus, as well as scientific books, articles, periodicals, and magazines, it involved reviewing pertinent and recent literature related to the research topic, various studies, and theoretical knowledge of various aspects of the problems.

Implementation Phase: (educational supportive program):- Develop an educational program regarding schizophrenia based on the results of the assessment phase (pre-test) by distributing an illustrated booklet to all caregivers who participated, using PowerPoint presentations in the training setting. The schedule of teaching sessions was implemented as two sessions weekly. Sessions were performed in the Arabic language to ensure that all study subjects were understood, which included (five theoretical sessions). The duration of sessions for each theoretical session ranged from 40-50 minutes.

The content of the educational supportive program 'sessions is presented in the following table

Educational supportive program contents	Teaching methods
1-An introductory session that emphasized establishing rapport between the researchers and the caregivers participating in the study and an explanation of the purpose of the educational supportive program	<ul style="list-style-type: none"> • Discussion
2-Education about schizophrenia definition, causes, clinical features, treatment, and prognosis of schizophrenia.	PowerPoint presentation Discussion
3-Education about the nature of the illness, treatment modalities, drug compliance, and dealing with behavioral issues.	Teaching videos
4-Education about effective communication, crisis management, problem-solving skills training, and coping with schizophrenic patients	PowerPoint presentation <ul style="list-style-type: none"> • Discussion
5-Summary of the educational supportive program and the studied caregivers were asked to answer the questionnaire post-educational supportive program.	<ul style="list-style-type: none"> • Discussion

Evaluating the educational supportive program:

The educational supportive program was evaluated by a jury of 5 nursing and medical experts in the field of Mental-Health Nursing. The research experts in the fields ensured clarity and appropriateness by reviewing the educational supportive program and contents regarding schizophrenia.

The general objectives of the educational supportive program were to improve knowledge, emotional empathy, and the burden of schizophrenic patients' caregivers.

Specific objectives: At the end of the educational program the studied women were able to:

- Definition schizophrenia and Causes of schizophrenia
- Clinical features of schizophrenia and Treatment of schizophrenia
- prognosis of schizophrenia and Drug compliance
- dealing with behavioral issues
- Effective communication, crisis management
- Problem-solving skills training and coping with problems of schizophrenic patients.

The Evaluation phase:

The effect of the educational supportive program was evaluated after one month of the implementation phase using the same tools II, III, and IV using the post-test was used at the pre-test.

Statistical analysis:

The acquired data were tabulated and analyzed with SPSS version 22. The Excel program was used to help make the visuals. Analytical statistics, such as the Repeated-Measures ANOVA, and descriptive statistics, such as the mean and standard deviation (X+SD) for quantitative data or number and percentage (No &%) for qualitative data, were both employed. A Chi-square test was used for the differences between variables pre and post-intervention. Pearson correlation test was used to the association between variables. At a P-value of < 0.05, statistical significance was taken into account.

Results:

Table (1) reveals that (38%) of the studied caregivers' ages were more than 50 years old, and their mean age was 47.33 ± 12.21 years. As regards their sex and marital status, (52% & 50%) of them were female and married respectively. Regarding the relation to the patient, less than one-third (32%) of them were mothers. Regarding the educational level and employment of the caregivers under the study, (40% and 56%) of them finished their primary education and were employed respectively. Regarding caregiving duration, three-fifths (60%) of caregiving duration was more than 5 years.

Table (2): shows that, more than one quarter (26%) of the studied patients' age ranged from 31- 35 years old, their mean age was 36.7 ± 8.67 years. As regards sex and educational level, three-fifths and half (60% & 50%) of them were male and finished secondary education respectively. About the duration of the patient's illness, three-fifths (60%) of them had the illness for more than 5 years.

Table 3 shows that there were highly statistically significant differences between schizophrenic patients' caregivers' pre- and post-educational supportive program knowledge about Schizophrenia ($P < 0.001$).

Figure (1) illustrates that about three-quarters (75 %) of the studied caregivers of patients with schizophrenia had unsatisfactory levels of knowledge about schizophrenia, while one-quarter (25%) of them had satisfactory levels of knowledge about schizophrenia pre-educational supportive program implementation. Post educational supportive program implementation, 78% of the studied caregivers of patients with schizophrenia had a satisfactory level of knowledge level.

Figure (2) illustrates that (52%) of the studied caregivers of patients with schizophrenia had a high level of emotional empathy, while (20%) of them had a low level of emotional empathy pre-educational supportive program implementation with highly statistically significant differences post-implementation as the high level of emotional empathy increased to 78% among caregivers of patient with schizophrenia.

Figure (3) illustrates that there were highly statistically significant differences between pre and post-educational supportive program implementation, in which (45%) of the studied caregivers had severe levels of total burden. and (15%) of them had a very mild level of total burden pre-educational supportive program implementation that improved post-implementation to 20% only had a severe level of total burden.

Table (4) shows that there were weak negative correlations between the total levels of knowledge of the studied caregivers and their burden at p-value =.000. Also, there was a weak positive correlation between the total levels of knowledge of the studied caregivers and their emotional empathy at p-value =.000. Also, there were strong positive correlations between total levels of the burden of the studied caregivers and their level emotional empathy of at p-value =.000.

Table (1): Demographic characteristics of the studied schizophrenic patients' caregivers (N= 150).

Items	NO.	%
Age (year)		
18:25 years old	12	8.0
26:30 years old	12	8.0
31:35 years old	18	12.0
36:40 years old	15	10.0
41:50 years old	36	24.0
More than 50 years old	57	38.0
Mean ±SD 47.33±12.21		
Sex		
Male	72	48.0
Female	78	52.0
Relation to patient		
Mother	48	32.0
Father	27	18.0
Brother/ Sister	36	24.0
Husband/ Wife	30	20.0
Daughter/ son	9	6.0
Marital status		
Single	30	20.0
Married	75	50.0
Divorced	27	18.0
Widow	18	12.0
Educational level		
Illiterate	27	18.0
Primary education	60	40.0
Secondary education	33	22.0
University education	30	20.0
Employment		
Employed	84	56.0
Unemployed	66	44.0
Caregiving duration		
1-5 years	60	40.0
More than 5 years	90	60.0

Table (2): Demographic characteristics of the studied schizophrenic patients (N= 150)

Items	No.	%
Age (year)		
18:25 years old	30	20.0
26:30 years old	21	14.0
31-35 years old	39	26.0
36:40 years old	21	14.0
41:50 years old	33	22.0
More than 50 years old	9	6.0
Mean \pm SD 36.7\pm8.67		
Sex		
Male	90	60.0
Female	60	40.0
Educational level		
Illiterate	72	48.0
Primary education	78	52.0
Duration of patient's illness		
Less than 5 years	60	40.0
More than 5 years	90	60.0

Table (3) Comparison between schizophrenic patients' caregivers' Knowledge regarding Schizophrenia pre and post-educational supportive program N= (150)

Caregivers' Knowledge	Pre- educational supportive program		Post-educational supportive program		X ²	P-value
	No	%	N	%		
Definition of Schizophrenia	60	40	135	90	144.76	<0.001**
Causes of schizophrenia	48	32	141	94	133.22	<0.001**
Clinical features of schizophrenia	75	50	144	96	115.55	<0.001**
Treatment of schizophrenia	45	30	141	94	127.44	<0.001**
Prognosis of schizophrenia.	39	26	138	92	126.33	<0.001**

**; Highly significant at p-value < 0.001

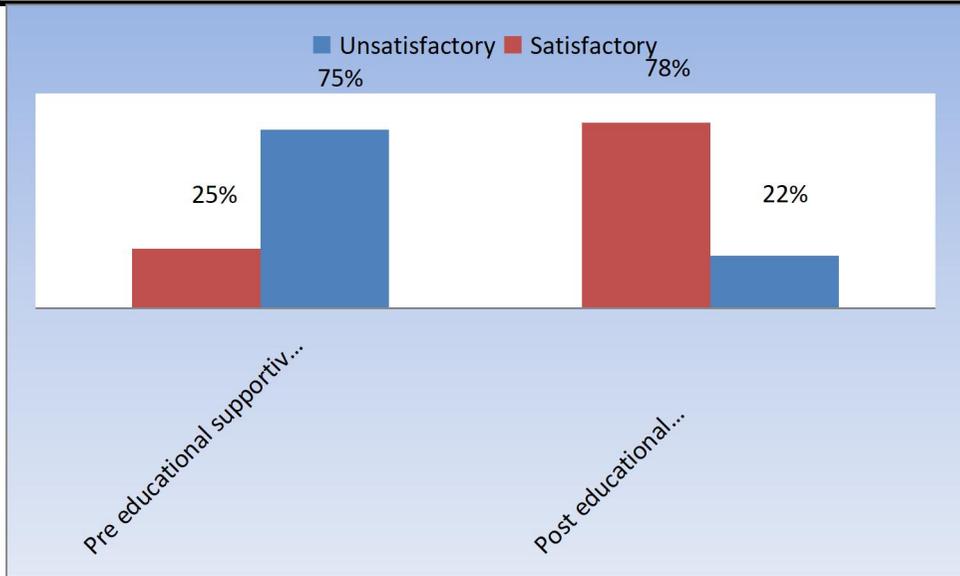


Figure (1): Total knowledge level of the studied caregivers about schizophrenia disorder (n=150).

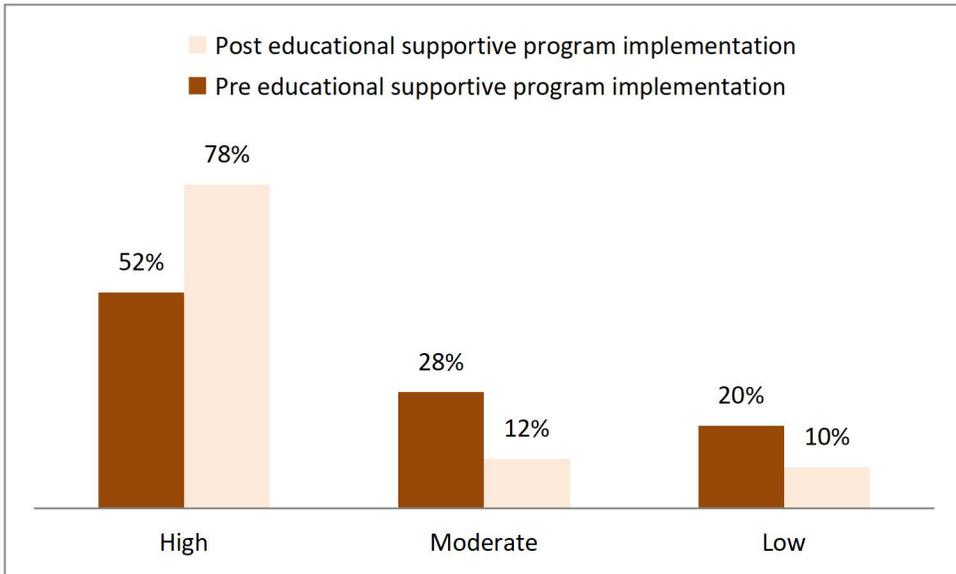


Figure (2): Emotional empathy level among the studied caregivers of patients with schizophrenia (N=150)

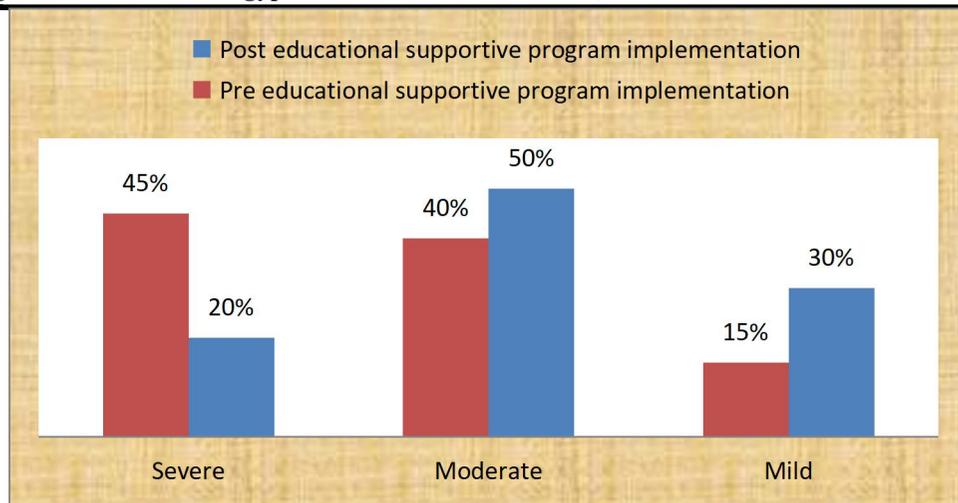


Figure (3): Total levels of burden among the studied caregivers of patients with schizophrenia (N=150)

Table (4): Correlation between knowledge, emotional empathy, and burden among the studied caregivers of patients with schizophrenia (n=150).

The studied variable	Total knowledge	Total emotional empathy	Total burden	
Total knowledge	r test P value			
Total emotional Empathy	r test	.367**		
	P value	.000		
Total burden	r test	-.306**	.842**	
	P value	.000	.000	

Discussion

According to **Ribe et al. (2018)**, social support is an important determinant of carer well-being and a key predictor of their quality of life. It is also closely related to the appearance of depression and feelings of load. There is evidence that perceived social support has a strong beneficial relationship with patient recovery in addition to being extremely helpful for family caregivers (**Sun et al., 2019**).

The results of the current study's analysis of the demographic features of the carers under study revealed that more than one-third of them were older than 50, and their mean age was 47.33 ± 12.21 years. Less than one-third of those who were related to the sick were moms. More than two-fifths of the carers in the study completed their primary education, and more than half of them were employed, according to their educational status and job status, respectively.

These findings are in line with a study by **Yu et al. (2018)** titled "Assessment of burden among family carers of schizophrenia" which discovered that the majority of the carers were over 50 and had just a primary education. A little bit more than half of the carers had jobs, and parents made up the majority of their connections to the care receiver.

The current study differs from a study by **Rahmani et al. (2022)** titled "Carer Burden and the Associated Factors in the family carers of patients with schizophrenia" which revealed that the mean age of carers was less than 50 years. More participants were researched up to high school, and most of the participants and half of the participants were unemployed.

In the current study, more than half of the carers were female and in committed relationships. These findings support a study by **Aubeeluck et al. (2020)** titled "The burdens of family carers of

schizophrenia in Mauritius" which discovered that more than half of the carers were married women.

Less than two-thirds of the patients in the current study had illnesses that lasted more than five years, and more than five years were spent providing treatment for them, according to the study's results. These findings are consistent with a study conducted by **Rahmani et al., (2022)**, which found that the average disease duration was greater than 10 years and most of the participants provided caregiving for more than 10 years.

According to the current study's findings about the demographics of the researched patients, more than 25% of them were between the ages of 31 and less than 35 years old, with a mean age of 36.78.67 years. In terms of gender, they were mostly male—between three-fifths and fifty percent. These findings are consistent with a study by **Souza et al., (2017)** that evaluated "Factors associated with the burden of family caregivers of patients with mental disorders" and discovered that only a third of the study subjects were younger than 40 years old.

Additionally, these findings are in line with a study by **Ribé et al. (2018)** that evaluated the "Quality of Life in Family Caregivers of schizophrenia patients in Spain: Caregiver Characteristics, caregiving burden, Family Functioning, and social and professional support" and discovered that the majority of caregivers were men under the age of 40. However, these findings are at odds with those of **Sharma (2017)**, who conducted a study titled "Burden, perceived stigma, and coping style of caregivers of patients with schizophrenia and bipolar disorder" and reported that the age range of studied patients with schizophrenia was 40–59 years, with half of them being male.

Half of the patients in the current study have completed their secondary education in terms of educational attainment. The results are consistent with a study by **Thunyadee et al., (2015)** titled "Descriptive characteristics of the individuals with schizophrenia," which found that nearly half of them had completed some form of secondary education.

The results of the current study revealed that there were highly statistically significant variations between the knowledge of schizophrenia held by caregivers of schizophrenic patients before and after participating in an educational support program. It represented the advantages of knowing about educational assistance programs, according to the

study.

The current study found that before the implementation of an educational supportive program, around three-quarters of the caregivers of patients with schizophrenia had unsatisfactory levels of knowledge regarding the disorder, whereas one-quarter had satisfactory levels. This supported the researcher's hypothesis that the caregiver's understudy needed to take part in this program to increase their expertise.

This is corroborated by a study by **Koschorke et al. (2017)** that examined "Experiences of stigma and discrimination faced by family caregivers of people with schizophrenia in India" and discovered that the sample of caregivers that they studied had a low level of knowledge about schizophrenia. The findings, however, conflict with a study by **Lopez et al. (2018)** titled "Psychosis literacy among Latinos and their caregivers" which claimed that carers reported considerably satisfactory psychosis literacy.

The current study found that after the implementation of an educational supportive program, more than 75% of the caregivers of patients with schizophrenia had satisfactory knowledge levels. It showed the success of the educational support program, according to the researcher.

More than half of the caregivers of patients with schizophrenia who were studied had high levels of emotional empathy, according to the study's findings. However, after the implementation of an educational support program, those caregivers' high levels of emotional empathy increased to more than three quarters, with highly statistically significant differences. This might be because empathic people can be able to put themselves in other people's shoes and feel the emotions and sentiments that come from other people, thereby understanding the needs of others based on their motivations.

Additionally, prior research has shown how familial interactions can positively affect empathy, leading to increased levels of empathy. Furthermore, a close bond between two people can lead to altruistic behavior and aid in the development of affective empathy, which could contribute to the explanation of the strong association between affective empathy and informal carer status in the present study (**Maximiano-Barreto et al., 2022**). This may

help to explain why three-fifths of the carers for schizophrenia patients in the study showed high levels of emotional empathy.

Less than half of the carers in the study reported significant levels of overall burden, according to the study's findings. This might be because caring for persons with serious mental illnesses like schizophrenia is difficult for carers because of the mounting demands and responsibilities, and there is growing worry about their capacity to handle or cope. This increased load may be caused by the physical and emotional tiredness of caring for others, the stress of dealing with disruptive behavior, the disturbance of daily routines in families, the stigma they experience, and the restriction of social activities due to financial hardship. A study by **Stanley et al. (2017)** that evaluated "psychological distress, perceived burden, and quality of life in carers of persons with schizophrenia" and discovered high perceived load in carers of patients with schizophrenia supports the conclusion. This finding conflicts with a study by **Rahmani et al. (2022)**, which found that participants felt a high level of burden as a result of their caregiving responsibilities, with 38.2% of the carers reporting a severe burden, 29.4% a moderate burden, and 19.39% a mild burden.

According to several studies, family educational supportive programs can lessen the stress on families and carers (**Magliano et al., 2016; Yamaguchi et al., 2016; Chien and Wong, 2017**). On the other hand, **González-Blanch et al. (2019)** reported that a brief family educational supportive program is not enough to lessen family stress (**Carrà et al., 2017**). Family education (**Chan et al., 2019**) and family group therapy did not appear to have any positive benefits on family outcomes in some other research either. The cited research's variations could be attributable to various family burden assessment techniques, but more crucially, to various intervention types.

Less than half of the carers in the study had a severe level of the total burden, but this had improved after implementation, according to the study's results, which showed that there were highly statistically significant changes between pre and post-educational supporting program implementation. It supported the success of the implementation of educational supportive programs, according to the researcher. The carer's understanding of the condition has significantly improved in the intervention group. This illustrates the usefulness of the knowledge imparted through educational supportive programs and its immediately discernible impact (**Cassidy et al.,**

2021). It has been discovered that disease awareness is related to individuals taking their medications more consistently. The Cochrane study emphasizes the advantages of patient educational supportive programs in lowering readmission and relapse rates, encouraging medication adherence, and cutting down on hospital stays. These findings imply that an educational support program is a clinically helpful and cost-effective intervention since it benefits both patients and their family caregivers (**Xia et al., 2019**). In a recent Italian multicenter research of 136 carers, the crucial significance of family support in caring was confirmed. Caregivers' personal development was connected with strong family functioning and sufficient professional assistance (**Galderisi et al., 2016**).

Due to a greater understanding of all illness stages and early management, educational supportive programs have a significant impact on the severity of symptoms. This is in line with other studies conducted throughout the world, which discovered that educational supportive programs help patients learn more about their illnesses and stick to their treatments. Additionally, educational supportive program therapy helps to lower the risk of schizophrenia relapses. It demonstrated a considerable improvement in patient's psychological health and objective quality of life (**Sauvanaud et al., 2017**).

According to the study's findings, there were weak negative correlations between the caregivers' load and their overall knowledge levels. Furthermore, there was a marginally favorable association between the carers' overall knowledge levels and their emotional empathy. Also, there were significant positive associations between the caregivers' overall levels of hardship and their emotional empathy.

The results of the current investigation revealed that the load of the carers and their overall knowledge levels had only weakly negative relationships. This might be a result of the fact that in the current study, more than half of the caregivers had only received a minimal education and had inadequate awareness of the illness. Furthermore, more than two-thirds of them were older than forty and had been providing care for patients for more than five years.

These findings are also corroborated by a study conducted by **Wan and Wong (2019)** to evaluate the stress and burden placed on family carers of individuals with schizophrenia and early psychosis in Hong Kong, which revealed a negative relationship between the caregivers' knowledge and their burden. Additionally, the findings of the current study indicated a weakly positive association between the caregivers' overall knowledge levels and their emotional empathy. This could be explained by the idea that when carers possess good knowledge, the intellectual cognition processes of interpretation, sensitivity, conclusion, and intuition result in good empathy and care behavior from caregivers.

This finding is corroborated by a study by **Wijma et al. (2018)** titled "A Virtual Reality Intervention to Improve the Understanding and Empathy of People with dementia in Informal Carers," which discovered that carers must have subjective knowledge of their patient's illnesses to foster empathy and a general understanding of their patients.

Additionally, there was a significant positive link between the caregivers' overall levels of hardship and their emotional empathy. This could be explained by the fact that those who care for schizophrenia patients and have a high level of emotional empathy may become unduly entangled, carrying the additional load of experiencing the pain and suffering a loved one is going through as a result of a cruel, upsetting, and chronic illness. Chronically feeling both their distress and the distress of the person they are caring for could considerably increase the chance of these caregivers acquiring depressive and anxiety symptoms.

This result is consistent with a study by **Hua et al. (2021)** that evaluated "Emotional and cognitive empathy in carers of people with neurodegenerative disease: Relationships with caregivers mental health" and found that family caregivers who have higher levels of emotional empathy tend to have worse mental health when dealing with the suffering of others. This finding, however, conflicts with one made by **Di Lorenzo et al., (2021)**, who assessed "Empathy and perceived burden in caregivers of patients with schizophrenia spectrum disorders" and discovered that a low level of emotional empathy is associated with a heavy load. High levels of emotional empathy were discovered to be protective against stress among family carers.

Additionally, **Jütten et al., (2019)** study on "Empathy in Informal Dementia Caregivers and its Relationship with Depression, Anxiety, and Burden"

found no link between emotional empathy and caregivers' burden.

Furthermore, this study contradicts earlier research on the detrimental effects of emotional empathy on the well-being of family carers (**Hua et al., 2021; Jütten et al., 2019; Maximiano-Barreto et al., 2021**). This discrepancy may be explained by the characteristics and sample size as well as the scale employed to quantify depressed symptoms. In general, those who care for schizophrenia patients who are heavily burdened exhibited significant levels of emotional empathy and severe depressed symptoms. Between the carers' overall levels of emotional empathy and their burden. Additionally, this outcome is consistent with findings from earlier research on the general public and among those who care for psychiatric patients, where emotional empathy, in general, was viewed as a helpful psychological defense mechanism in various populations (**Di Lorenzo et al., 2021**).

Conclusion:

Based on the results of this study, the current study concluded that the implementation of an educational supportive program has significantly improved schizophrenic patients' knowledge, emotional empathy, and burden.

Recommendation:

Based on the findings and conclusion of this study, the following recommendations suggested:

Educational supportive programs are suggested as a better option for family caregivers of schizophrenia patients to increase their knowledge, foster emotional empathy, and lessen their stress to assist them in coping with and overcoming their caregiving load.

To improve the generalizability of the results, do comparable research in various settings and with various populations.

Family caregivers of schizophrenia patients should get scientific guidelines and written instructions regarding the disorder in outpatient units.

Ongoing education and training programs about schizophrenia for all family members who care for individuals who have the illness to increase their understanding, lessen their workload, and foster emotional empathy.

References:

1. Alloway, T. P., Copello, E., Loesch, M., Soares, C., Watkins, J., Miller, D., & Ray, S. (2016). Investigating the reliability and validity of the Multidimensional Emotional Empathy Scale. *Measurement, 90*, 438-442.
2. Aubeeluck, N. D., & Luximon-Ramma, A. (2020). The burdens of family caregivers of schizophrenia in Mauritius. *SciMedicineJournal, 2*(3), 118-131.
3. Bhowmik, M., Gaekwad, S. J., Chaudhury, S., Prakash, J., & Saldanha, D. (2023). Relation of expressed emotions and burden of care in primary caregivers to the severity of illness in schizophrenia patients: A cross-sectional, hospital-based study.
4. Carrà G, Montomoli C, Clerici M, Cazzullo CL (2017) Family interventions for schizophrenia in Italy: randomized controlled trial. *Eur Arch Psychiatry Clin Neurosci 257*:23.
5. Cassidy E, Hill S, O'Callaghan E. (2021). Efficacy of a psychoeducational intervention in improving relatives' knowledge about schizophrenia and reducing rehospitalization. *Eur Psychiatry. 16*:446–50. doi: 10.1016/s0924-9338(01)00605-8
6. Chan SW, Yip B, Tso S, Cheng BS, Tam W (2009) Evaluation of a psychoeducation program for Chinese clients with schizophrenia and their family caregivers. *Patient Educ Couns 75*:67–76.
7. Chien WT, Wong KF (2017) A family psychoeducation group program for Chinese people with schizophrenia in Hong Kong. *Psychiatr Serv 58*:1003–1006.
8. Di Lorenzo, R., Girone, A., Panzera, N., Fiore, G., Pinelli, M., Venturi, G., ... & Ferri, P. (2021). Empathy and perceived burden in caregivers of patients with schizophrenia spectrum disorders. *BMC Health Services Research, 21*, 1-13.
9. Galderisi S, Rossi A, Rocca P, Bertolino A, Mucci A, Bucci P, et al. (2016). Pathways to functional outcome in subjects with schizophrenia living in the community and their unaffected first-degree relatives. *Schizophr Res. 175*:154–60. doi: 10.1016/j.schres.2016.04.043
10. González-Blanch C, Martín-Muñoz V, Pardo-García G, Martínez-García O, Álvarez-Jiménez M, Rodríguez-Sánchez JM, et al. (2019). Effects of family psychoeducation on expressed emotion and burden of care in first-episode psychosis: a prospective observational study. *Span J Psychol 13*:389–395.
11. Hsiao CY, Lu HL, Tsai YF. (2020). Caregiver burden and health-related quality of life among primary family caregivers of individuals with schizophrenia: a cross-sectional study. *Qual Life Res.; 29*(10):2745–57. <https://doi.org/10.1007/s11136-020-02518-1>.
- Hua, A. Y., Wells, J. L., Brown, C. L., & Levenson, R. W. (2021). Emotional and cognitive empathy in caregivers of people with neurodegenerative disease: relationships with caregiver mental health. *Clinical Psychological Science, 9*(3), 449-466.
- Jütten, L. H., Mark, R. E., & Sitskoorn, M. M. (2019). Empathy in informal dementia caregivers and its relationship with depression, anxiety, and burden. *International journal of clinical and health psychology, 19*(1), 12-21.
- Koschorke, M., Padmavati, R., Kumar, S., Cohen, A., Weiss, H. A., Chatterjee, S., ... & Thornicroft, G. (2017). Experiences of stigma and discrimination faced by family caregivers of people with schizophrenia in India. *Social science & medicine, 178*, 66-77.
- López, S. R., Gamez, D., Mejia, Y., Calderon, V., Lopez, D., Ullman, J. B., & Kopelowicz, A. (2018). Psychosis literacy among Latinos with first-episode psychosis and their caregivers. *Psychiatric services, 69*(11), 1153- 1159.
- Magliano L, Fiorillo A, Malangone C, De Rosa C, Maj M (2016) Special section: a memorial tribute: patient functioning and family burden in a controlled, real-world trial of family psychoeducation for schizophrenia. *Psychiatr Serv 57*:1784–1791.
- Maximiano-Barreto, M. A., Bomfim, A. J. D. L., Borges, M. M., de Moura, A. B., Luchesi, B. M., & Chagas, M. H. N. (2021). Recognition of facial expressions of emotion and depressive symptoms among caregivers with different levels of empathy. *Clinical Gerontologist, 1*-8.
- Nuraini, T., Tumanggor, R. D., Hungerford, C., Lees, D., & Cleary, M. (2021). Caregiver burden for people with schizophrenia in Medan, Indonesia. *Issues in Mental Health Nursing, 42*(8), 790-793.
- Papageorgiou G, Cañas F, Zink M, Rossi A (2019) Country differences in patient characteristics and treatment in schizophrenia: data from a physician-based survey in Europe. *Eur Psychiatry 26*:17–28.
- Pekkala E, & Merinder L. (2021). Psychoeducation for schizophrenia. *Cochrane Database Syst Rev.*(2): CD002831.
- Pendergrass, A., Malnis, C., Graf, U., Engel, S., Graessel, E. (2018). Screening for caregivers at risk: Extended validation of the short version

- of the Burden Scale for Family Caregivers (BSFC-s) with a valid classification system for caregivers caring for an older person at home. *BMC Health Services Research*, 18(1),229.
22. **Peng, M. M., Chen, H. L., Zhang, T., Yao, Y.Y., Li, Z. H., Long, L., ... & Ran, M. S. (2019).** Disease-related stressors of caregiving burden among different types of family caregivers of persons with schizophrenia in rural China. *International Journal of Social Psychiatry*, 65(7-8), 603-614.
 23. **Qiu, P. L., Liu, S. Y., Bradshaw, M., Rooney-Latham, S., Takamatsu, S., Bulgakov, T. S., ... & Braun, U. (2020).** Multi-locus phylogeny and taxonomy of an unresolved, heterogeneous species complex within the genus *Golovinomyces* (Ascomycota, Erysiphales), including *G. ambrosiae*, *G. circumfusus* and *G. spadiceus*. *BMC Microbiology*, 20(1), 1-16.
 24. **Rahmani, F., Ranjbar, F., Hosseinzadeh, M., Razavi, S. S., Dickens, G. L., & Vahidi, M. (2019).** Coping strategies of family caregivers of patients with schizophrenia in Iran: A cross-sectional survey. *International journal of nursing sciences*, 6(2), 148-153.
 25. **Rahmani, F., Roshangar, F., Gholizadeh, L., & Asghari, E. (2022).** Caregiver burden and the associated factors in the family caregivers of patients with schizophrenia. *Nursing Open*, 9(4), 1995-2002.
 26. **Ribé, J. M., Salamero, M., Pérez-Testor, C., Mercadal, J., Aguilera, C., & Cleris, M. (2018).** Quality of life in family caregivers of schizophrenia patients in Spain: caregiver characteristics, caregiving burden, family functioning, and social and professional support. *International journal of psychiatry in clinical practice*, 22(1), 25-33.
 27. **Ribé, J. M., Salamero, M., Pérez-Testor, C., Mercadal, J., Aguilera, C., & Cleris, M. (2018).** Quality of life in family caregivers of schizophrenia patients in Spain: Caregiver characteristics, caregiving burden, family functioning, and social and professional support. *International Journal of Psychiatry in Clinical Practice*, 22(1), 25–33. doi:10.1080/13651501.2017.1360500.
 28. **Sauvanaud F, Kebir O, Vlasie M, Doste V, Amado I, Krebs MO (2017)** Therapeutic benefit of a registered psychoeducation program on treatment adherence, objective and subjective quality of life: French pilot study for schizophrenia. *Encephale* 43:235–240.
 29. **Sauvanaud F, Kebir O, Vlasie M, Doste V, Amado I, Krebs MO (2017)** Therapeutic benefit of a registered psychoeducation program on treatment adherence, objective and subjective quality of life: French pilot study for schizophrenia. *Encephale* 43:235–240.
 - Schuster F, Holzhüter F, Heres S, Hamann J. Caregiver involvement in psychiatric inpatient treatment – a representative survey among triads of patients, caregivers, and hospital psychiatrists. *Epidemiol Psychiatr Sci*. 2020; 29:e129. <https://doi.org/10.1017/S2045796020000426>.
 - Sharif F, Shaygan M, Mani A (2018).** Effect of a psycho-educational intervention for family members on caregiver burdens and psychiatric symptoms in patients with schizophrenia in Shiraz, Iran. *BMC Psychiatry* 12:48.
 - Sharma, H., Sharma, B., & Sharma, D. B. (2017).** Burden, perceived stigma and coping style of caregivers of patients with schizophrenia and bipolar disorder. *Int J Health Sci Res*, 7(11), 84-94.
 - Shiraishi N, & Reilly J. (2019).** Positive and negative impacts of schizophrenia on family caregivers: a systematic review and qualitative meta-summary. *Soc Psychiatry Psychiatr Epidemiol.*;54(3):277–90. <https://doi.org/10.1007/s00127-018-1617-8>.
 - Souza, A. L. R., Guimarães, R. A., de Araújo Vilela, D., De Assis, R. M., de Almeida Cavalcante Oliveira, L. M., Souza, M. R., ... & Barbosa, M. A. (2017).** Factors associated with the burden of family caregivers of patients with mental disorders: a cross-sectional study. *BMC Psychiatry*, 17(1), 1-10
 - Stanley, S., Balakrishnan, S., & Ilangovan, S. (2017).** Psychological distress, perceived burden and quality of life in caregivers of persons with schizophrenia. *Journal of Mental Health*, 26(2), 134-14.
 - Stanley, S., Balakrishnan, S., & Ilangovan, S. (2017).** Psychological distress, perceived burden and quality of life in caregivers of persons with schizophrenia. *Journal of Mental Health*, 26 (2), 134–141. doi:10.1080/09638237.2016.1276537.
 - Sun, X., Ge, J., Meng, H., Chen, Z., & Liu, D. (2019).** The influence of social support and care burden on depression among caregivers of patients with severe mental illness in rural areas of Sichuan, China. *International Journal of Environmental Research and Public Health*, 16(11), 1961.
 - Sun, X., Ge, J., Meng, H., Chen, Z., & Liu, D. (2019).** The influence of social support and care burden on depression among caregivers of patients with severe mental illness in rural areas of Sichuan, China. *International Journal of Environmental Research and Public Health*, 16 (11), 1961. doi:10.3390/ijerph16111961.

39. **Thara, R., Padmavati, R., Kumar, S., & Srinivasan, L. (1998).** Instrument to assess the burden on caregivers of chronic mentally ill. *Indian Journal of Psychiatry*, 40 (1), 21.
40. **Thunyadee, C., Sitthimongkol, Y., Sangon, S., Chai-Aroon, T., & Hegadoren, K. M. (2015).** Predictors of depressive symptoms and physical health in caregivers of individuals with schizophrenia. *Nursing & health sciences*, 17(4), 412-419.
41. **Treichel, C. A. D. S., Jardim, V. M. D. R., Kantorski, L. P., & Alves, P. F. (2020).** Gender differences in the manifestation of burden among family caregivers of people with mental disorders. *International Journal of Mental Health Nursing*, 29(6), 1120-1130.
42. **Wan, K. F., & Wong, M. M. (2019).** Stress and burden faced by family caregivers of people with schizophrenia and early psychosis in Hong Kong. *Internal Medicine Journal*, 49, 9-15.
43. **Wijma, E. M., Veerbeek, M. A., Prins, M., Pot, A. M., & Willemse, B. M. (2018).** A virtual reality intervention to improve the understanding and empathy for people with dementia in informal caregivers: results of a pilot study. *Aging & mental health*, 22(9), 1121-1129.
44. **Winship, I. R., Dursun, S. M., Baker, G. B., Balista, P. A., Kandratavicius, L., Maia-de-Oliveira, J. P., ... & Howland, J. G. (2019).** An overview of animal models related to schizophrenia. *The Canadian Journal of Psychiatry*, 64(1), 5-17.
45. **World Health Organisation. (2019).** Schizophrenia-key facts. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/schizophrenia>.
46. **Xia J, Merinder LB, Belgamwar MR. Psychoeducation for schizophrenia. Cochrane Database Syst Rev. (2019) 2011): CD002831. doi: 10.1002/14651858.CD002831.pub2**
47. **Yamaguchi H, Takahashi A, Takano A, Kojima T. (2016)** Direct effects of short-term psychoeducational intervention for relatives of patients with schizophrenia in Japan. *Psychiatry Clin Neurosci* 60:590–597.
48. **Yu, Y., Liu, Z. W., Zhou, W., Chen, X. C., Zhang, X. Y., Hu, M., & Xiao, S. Y. (2018).** Assessment of burden among family caregivers of schizophrenia: psychometric testing for short-form Zarit burden interviews. *Frontiers in Psychology*, 9, 2539.