

Original Article

Psycho-educational program to enhance expressed emotion and reduce burden of care among family caregivers of patients with polysubstance abuse

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Abstract

Objectives: Polysubstance abuse can result in significant adverse effects on an individual's physical, mental, and social health, affecting families and leading to increased stress, anxiety, depression, and financial difficulties. This study evaluated the effect of a psychoeducational program to enhance expressed emotion (EE) and reduce the burden of care among family caregivers of patients with polysubstance abuse.

Methods: The study was conducted at the addiction clinic in the El Abasia Psychiatric and Mental Health Hospital, in Egypt using a quasi-experimental design that involved a pre-test and a post-test. The study involved 62 caregivers of polysubstance abuse patients, and data were collected in the period from June to December 2022. The data were collected by online survey which includes socio-demographic data assessment questionnaire, caregivers' knowledge about polysubstance abuse form, patterns of EE scale, and Zarit Burden Interview scale.

Results: The ages of 72.60% of family caregivers ranged from 30 to 40 years. The total knowledge score was 54.6% pre-program implementation versus 87.2% post-program. Furthermore, 70.7% of caregivers had high EE pre-program versus 26.4% post-program. In addition, 78.4% of caregivers reported high burden pre-program implementation versus 32.8% post-program. The scores related to caregivers' EEs and burden following the implementation of a psycho-educational program were significantly improved, ($p < 0.001$). The total EE and total burden scores of caregivers were more significantly positively correlated pre-program than post-program implementation ($p < 0.001$).

Conclusion: Implementing the psycho-educational intervention had resulted in a positive statistically significant impact on improving the EE of family caregivers and decreasing the burden of patient care.

Keywords: Caregiver burdens; caregiver; educational program; emotions; substance abuse.

Polysubstance abuse is a widespread issue that affects nearly all countries. This type of substance abuse causes significant harm to the user's physical, mental, and socioeconomic wellbeing, as well as those who care for them.^[1] Family caregivers have a major responsibility in supporting people with substance use problems especially in developing coun-

tries where joint families and stronger familial bonds are more common. Their role includes helping addicted patients to start treatment, improving health and preventing relapses.^[2]

Caregivers face various challenges, including stress, anxiety, depression, communication difficulties, financial problems, and social isolation. Caregiver burden is the strain experi-

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enced by caregivers when caring for their loved ones, encompassing both subjective and objective outcomes.^[3] Expressed emotion (EE) is used to measure how family members and patients interact with each other, as well as their interpersonal relationships. It is an important feature of the family context that reveals essential aspects of interpersonal relationships.^[4]

Care burden indicates physical, mental, financial, or social reactions by the caregiver. This happens when there is an imbalance between the needs of the patient and the available health services and can be influenced by the family caregiver's multiple roles, mental and physical health, finances, and the quality of government health services.^[5]

This burden can be attributed to various factors such as the patient's level of dependence, the number of caregiving tasks required, the caregiver's knowledge and skill level, their level of preparedness, and access to resources.^[1] The presence of a family member dependent on substances can significantly impact various features of family life, including relationships, social activities, and finances. According to Sharma et al.,^[6] this can lead to conflicts, negatively affecting the wellbeing of other family members and conciseness of the entire family.

On the other hand, polysubstance abuse is a disease influenced by biological, psychological, and social factors. Hence, psychiatric mental health nurses must be able to plan and execute psycho-educational programs to enhance EEs and reduce the burden of care by improving coping patterns, stress management, problem-solving skills, family resilience, and psychosocial support.^[7]

Polysubstance abuse is a widespread issue that affects nearly every country and around 190 million individuals worldwide.^[7] Addiction is a critical problem in Egypt due to the ever-changing patterns of substance abuse and a rapidly growing population of 87,963,276 people. In a study by Mehany et al.,^[8] on 1000 Egyptians from 18 to 30 years old show that about one-fifth (19.1%) of the study's participants regularly use substances.

Family caregivers of patients with polysubstance abuse may experience verbal violence, financial instability, and reduced physical and psychological wellbeing, leading to incalculable losses. According to Yu et al.,^[9] the caregiver may experience anxiety, pressure, embarrassment, fears, frustration, and aggression, which can burden the family and lead to increase of negative EE toward the patient.

The implementation of psycho-educational intervention could improve emotional aspects and mitigate family caregivers' burdens when caring for polysubstance abuse. It should include all dimensions of health to ensure its effectiveness in improving caregiver's emotions and decreasing the burdens, so this study aimed to assess the effect of a psycho-educational program to enhance EE and reduce the burden of care among family caregivers of patients with polysubstance abuse.

What is presently known on this subject?

- Polysubstance abuse has well-documented negative effects on individuals' physical, mental, and social health, impacting families, and causing stress. Prior research emphasizes the challenges faced by family caregivers, including heightened expressed emotion and burden due to substance abuse.

What does this article add to the existing knowledge?

- This study introduces a novel psycho-educational program that uniquely targets family caregivers of polysubstance abuse patients. By focusing on enhancing expressed emotion and reducing caregiver burden, the program offers a holistic approach that can foster a more supportive environment for patients' recovery, distinguishing it from previous interventions.

What are the implications for practice?

- The study's practical impact is significant, as it presents a structured intervention that effectively enhances caregivers' expressed emotion and reduces burden. This program's success holds potential for implementation in addiction clinics and mental health institutions, providing a model for improving caregivers' well-being and potentially benefiting patients' recovery from polysubstance abuse.

Materials and Method

Study Design

A quasi-experimental design as pre-posttest was used in this study. It is an empirical interventional design which is usually used to assess the effect of specific intervention on determined parameters of participants.

Study Area

This study was conducted in the addiction clinic at El Abbassia Psychiatric and Mental Health Hospital, Ministry of Health, Egypt. The clinic provides screening for addiction new cases, and provides treatment, and follow-up for existing cases.

Population

The study was conducted on 62 family caregivers who are providing the care of patients with polysubstance abuse. They provided a consent to participate in the study for six consecutive months. They were selected based on the inclusion criteria which include both male and female family caregivers were included, living with the patient with polysubstance abuse and identify themselves as the primary provider of direct care for the patient.

Sampling and Sample Size

A purposive sampling technique has been employed in the study to select the family caregivers. The sample size was determined using Raosoft's method.^[10] The sample was determined to be 62 caregivers as they available at the time of data collection.

Tools for Data Collection

The data were collected by one for demographic variables and three tools adopted from previous validated studies. The tool used in this study were judged by three professors in psychiatric nursing to ensure their consistency, completeness, relevance, and precision, indicating the tools' validity.

Tool I: Socio-demographic Data Assessment Questionnaire

An interview questionnaire developed by the researchers included the assessment of demographic characteristics of family caregivers of patients with polysubstance abuse, such as age, income per month, educational level, occupation, degree of relation to the patient, and the presence of chronic disease.

Tool II: Knowledge of Caregivers About Polysubstance Abuse Form

This tool was developed to measure family caregivers' knowledge of polysubstance abuse and how they understood it, its causes, type, warning signs, and treatment measures. Cronbach's alpha was used to assess the internal consistency and reliability of the tool, it was above the acceptable level $r > 0.7$.

Tool III: EE Scale

The EE scale was adapted from Berksun.^[11] The researchers used this tool to assess the family caregivers' EE. It was modified and rephrased to meet the study's objectives after a review of relevant literature in the field. This scale encompassed two parts. Part 1 was designed to assess high EE and comprised three domains: 1. criticism, which is a statement that expresses disapproval and comprises 8 items; 2. hostility, which is unfriendly or aggressive behavior towards people or ideas and comprises 13 items; and 3. over-involvement, which is an excessive, or unusually significant involvement and consists of 15 statements. Part 2 measured low EE and comprised two domains: 1. warmth refers to being kind, trustworthy, supportive, mature, and understanding and comprises 13 items; and 2. positive remarks comprises 11 items.

The questionnaire used in the study consisted of 60 statements. These statements were divided into eight statements related to criticism: 13 statements related to hostility, 15 statements related to over-involvement, 13 items related to warmth, and 11 items related to positive remarks. Each statement on the EE scale required study participants to select a response on a three-point Likert scale. The responses ranged from always (1), sometimes (2), to never (3), except for the section related to warmth and positive remarks, which ranged from never (1), sometimes (2), to always (3). Family caregivers who scored 60% or higher were considered to have low EE, while those who scored <60% had high EE. Cronbach's alpha was above the acceptable level $r > 0.7$.

Tool IV. Zarit Burden Interview Scale

Zarit et al.^[12] developed the scale in 1980 to identify the burden of family caregivers. It comprised 22 items, its subscales are four: physical burden of 3 items, psychological burden of 6 items, social burden of 7 items, and financial burden of 3 items. The questionnaire includes areas that affect the care-

giver's wellbeing, including mental and physical health, social life, financial situation, and relationship with patients.

The scoring system was a 5-point Likert scale, from 0 to 4 points, where 0 corresponds to "never," and 4 to "nearly always." The overall score ranges from 0 to 88, with a higher score indicating greater burden. Scores between 0 and 20 imply minimal or negligible burden, between 21 and 40 indicating mild burden, between 41 and 60 referring to moderate-to-severe burden, and 61 and 88 indicating severe burden. Cronbach's alpha was used to assess the internal consistency of the study was above the acceptable level $r > 0.7$.

Procedures

In the primary phase, the researchers searched for available literature and decided the appropriate data collection technique and tools. Language experts translated the instruments into English, and any inconsistencies were resolved through back-translation.

Fieldwork

The psycho-educational intervention was delivered over six consecutive months, which included initial assessment before implementing the program, implementation, and post-program assessment. The program started in June 2022 and was completed by the end of December 2022.

In June 2022, before administering the psycho-educational program aimed at improving EE and reducing family caregiver burden caring for polysubstance abused patients, all study participants underwent a baseline assessment. Each caregiver was given a data collection tool, and the researchers assisted participants who encountered difficulties while completing the questionnaires.

Based on the baseline assessment data, the researchers designed a psycho-educational program validated by three expert psychiatrists and psychiatric/mental health nursing professors before being implemented with the study participants in August 2022.

During the study, the researchers have attended to the hospital for data collection 3 days a week to arrange and implement the program and assess its effectiveness. The participants were divided into nine subgroups, each one has 6–7 individuals. Each group received 12 sessions (four theoretical sessions and eight practical sessions).

Contents of the Psycho-educational Program

The program consisted of two main sections: theoretical and practical. The theoretical section included four sessions, and the practical part included eight sessions of 90 min each, along with a closing session. The details of the sessions are detailed in Table 1.

Table 1. Table of contents of the psycho-educational program

Session no	Duration	Aim of the session
Session 1	60 min	To assist the family caregivers in describing general information about polysubstance abuse.
Session 2	60 min	To assist the family caregiver in describing the meaning of expressed emotion and burden.
Session 3	60 min	To assist the family caregiver in explaining the patterns of expressed emotion and types of burdens.
Session 4	60 min	To assist caregivers in identifying the meaning of communication skills and the importance of them.
Session 5	90 min	To help participants in demonstrating communication skills by providing training on specific communication skills such as accepting, active listening, encouraging descriptions of perception, focusing, and summarizing.
Session 6	90 min	To assist the caregivers in establishing time management by setting appropriate goals and developing a plan to appropriately use time for their activities.
Session 7	90 min	To help caregivers develop cognitive skills to be able to deal with thoughts problems. This included developing skills such as self-monitoring and idea closure.
Session 8	90 min	To help participants to design a plan for managing destructive thoughts. This involved developing a list of negative emotions, utilizing mindfulness, and focusing on positive thinking.
Session 9	90 min	To assist the participants to utilize problem-solving techniques to deal with challenging patient behaviors. This included identifying, analyzing, developing solutions, selecting the best, implementing, and evaluating its effects.
Session 10	90 min	To assist family caregivers in demonstrating the deep breathing technique.
Session 11	90 min	To assist the family caregivers in demonstrating a progressive muscle relaxation technique.
Session 12	90 min	To help caregivers in applying guided imagery techniques. The closing session included simplifying the program's sessions and ending the intervention sessions for family caregivers.

Statistical Analysis

The data were analyzed by the Statistical Package for Social Science version 23.0. The frequencies and percentages were calculated for the dependent and independent variables, while the test of association was measured by Chi-square test to measures the associations. The correlation coefficient was used to assess the relationships. Paired sample t-tests and Pearson correlation were used to identify significant differences in groups, pre-/post-psycho-educational program implementation. The results were statistically significant as the calculated p-value was <0.05.

Ethical Considerations

The ethical approval was obtained from the Scientific Research and Ethical Committee of the Faculty of Nursing at Ain Shams University, with the number (22.11.37), it provided permission to conduct research. The family caregivers provided written informed consent before starting the study and agreed to enroll in a study for the next 6 months. The study was conducted in accordance with Helsinki guidelines.

Results

Table 2 reveals that <3-quarters (72.60%) of participants were between 30 and 40 years old. Their mean age was 44+6.3, while 54.9% were mothers of the patients. Moreover, 59.7% had received up to secondary education, 46.7% worked in manual crafts, and nearly three-quarters (74%) belonged to rural areas. Table 3 reveals a highly statistically significant difference between patterns of EE before and after program application

Table 2. Frequency and percentage distribution of family caregivers' socio-demographic characteristics (n=62)

Items	n	%
Age, mean±SD	64.44±3.65	
20-<30	9	14.5
30-40	45	72.6
More than 40	8	12.9
Degree of relation		
Father	13	20.9
Mother	34	54.9
Brother	15	24.2
Education		
Primary	14	22.6
Secondary	37	59.7
University	11	17.7
Occupation		
Employee	17	27.4
Homemaker	12	19.4
Farmer	4	6.5
Work in manual crafts	29	46.7
Residence		
Rural	46	74.2
Urban	16	25.8
Caregivers suffer from any diseases		
Yes	19	30.6
No	43	69.4

SD: Standard deviation

(p<0.001). Furthermore, 69.3% had high criticism pre-program, which reduced to 38.7% post-program. Similarly, 62.1% of family caregivers had high hostility pre-program, which re-

Table 3. Frequency and percentage patterns of expressed emotion among family caregivers at pre-post program (n=62)

Patterns of expressed emotion	Pre				Post				Chi-square	
	High		Low		High		Low		X ²	p
	n	%	n	%	n	%	n	%		
Criticism	43	69.3	19	30.7	24	38.7	38	61.3	20.77	<0.001
Hostility	39	62.1	23	37.9	21	33.8	41	66.1	34.82	<0.001
Over-involvement	37	59.6	25	40.4	26	41.9	36	58.1	19.77	<0.001
Warmth	12	19.4	50	80.6	42	67.8	20	32.2	37.44	<0.001
Positive remarks	8	12.9	54	87.1	37	59.6	25	40.4	32.76	<0.001

Table 4. Frequency and percentage distribution of types of burden among family caregivers at pre- and post-program (n=62)

Types of burden	Pre				Post				Chi-square	
	High		Low		High		Low		X ²	p
	n	%	n	%	n	%	n	%		
Physical burden	44	70.9	18	29.1	24	38.7	38	61.3	27.18	<0.001
Psychological burden	39	62.9	23	37.1	20	32.2	42	67.8	38.22	<0.001
Social burden	46	74.2	16	25.2	18	29.3	44	70.7	29.15	<0.001
Financial burden	43	69.3	19	30.7	27	43.5	35	56.5	33.13	<0.001

duced to 33.8% post-program. In addition, 59.6% had a high level of over-involvement pre-program, which decreased to 41.9% post-program. Only 19.3% had high warmth pre-program, which increased to 67.8% post-program. Furthermore, 12.9% had high positive remarks pre-program, which increased to 59.6% post-program.

Table 4 shows the types of burden at pre and post intervention. It includes physical burden, Psychological burden, Social burden, and Financial burden. The differences at pre- and post-intervention were statistically significant.

Table 5 reveals the relationship between demographics and total patterns of EE and socio-demographic characteristics of the studied family caregivers. The differences were statistically significant.

Table 6 demonstrates a highly significant correlation ($p \leq 0.001$) between the socio-demographic characteristics of family caregivers and their overall burden score.

Table 7 indicates a highly significant correlation ($p \leq 0.001$) between the total burden score and the overall score of knowledge both before and after implementing the program. It also shows that there is a strong and significant correlation ($p \leq 0.001$) between the patterns of EE and the total score of knowledge before and after implementing the program.

Figure 1 illustrates a statistical improvement in participants' total knowledge score after program implementation: 54.6% before 87.2% after the psycho-educational program.

Discussion

Polysubstance abuse is a multifaceted problem that affects the individuals struggling with addiction and the family members who reside with them. Thus, it is crucial to offer appropriate training and evaluate the requirements of caregivers to provide care. The present study aimed to evaluate the effect of psycho-educational programs to enhance EE and reduce the burden of care among family caregivers of patients with polysubstance abuse.

The study showed that majority of the participants were female and most of them have relationship to the patient, those primarily were mothers; this finding can be explained by the fact that in the Egyptian culture, the females are mainly responsible for caring for their families. Thus, patients with substance use disorders, usually adolescence at a younger age, the original family (mother) cares for them. This finding is consistent with other studies, such as Marcon et al.^[13] and Mattoo et al.,^[14] who found that most caregivers were female, specifically wives and mothers. Same findings were also reported by Uddin et al.,^[15] who reported that the caregivers burden was reported which notably was noticed among females.

Regarding knowledge of family caregivers toward polysubstance abuse, the present study reveals that the psycho-educational program application positively affected participants' total knowledge scores post-program. This result might be referred to caregivers who complained about inadequate knowledge and skills. Polysubstance abuse was measured by

Table 5. Relations between total patterns of expressed emotion and socio-demographic characteristics of the studied family caregivers (n=62)

Demographic items	Total patterns of expressed emotion				X ²	p
	High		Low			
	n	%	n	%		
Age						
20-<30	2	5.4	7	28	20.6	<0.001
30-40	30	81	15	55.5		
More than 40	5	13.5	3	11.2		
Degree of relation						
Father	2	5.5	8	30.8	21.3	<0.001
Mother	26	72.2	11	42.3		
Brother	8	22.3	7	26.9		
Education						
Primary	10	34.5	4	12.2	13.6	<0.001
Secondary	17	58.7	20	60.5		
High education	2	6.8	9	27.3		
Occupation						
Employee	3	9.6	14	45.2	14.2	<0.001
Farmer	3	9.7	1	3.2		
Work in manual craft	21	67.8	8	25.8		
Housewife	4	12.9	8	25.8		
Residence						
Rural	34	91.8	12	48	24.8	<0.001
Urban	3	8.2	13	52		
Caregivers suffers from any diseases						
Yes	15	75	4	9.5	6.4	0.7
No	5	25	38	90.5		

Table 6. Relations between the total types of burdens and socio-demographic characteristics of the studied family caregivers (n=62)

Demographic items	Total patterns of burden				X ²	p
	High		Low			
	n	%	n	%		
Age						
20-<30	7	18.9	14	56	27.4	<0.001
30-40	2	5.5	7	28		
More than 40	28	75.6	4	16		
Degree of relation						
Father	26	72.3	8	30.7	28.6	<0.001
Mother	2	5.5	11	42.3		
Brother	8	22.2	7	26.9		
Education						
Primary	16	55.3	4	12.1	24.3	<0.001
Secondary	10	34.4	8	24.3		
High education	3	10.3	21	63.6		
Occupation						
Employee	3	9.8	14	45.1	30.2	<0.001
Farmer	3	9.8	1	3.3		
Work in manual craft	21	67.6	8	25.8		
Housewife	4	12.8	8	25.8		
Residence						
Rural	25	67.5	7	28	29.8	<0.001
Urban	12	32.5	18	72		
Caregivers suffers from any diseases						
Yes	17	85	7	16.6	29.3	<0.001
No	3	15	35	83.4		

tool II developed by researchers, after implementation of the program. These results support those of Essays and Sabra,^[16] who reported that the educational program led to an increase in the average knowledge of the participants.

In addition, the study found a decrease in the overall patterns of highly EE among family caregivers after the program. This may be because caring for a patient with polysubstance abuse can be very demanding on a caregiver's physical, psychological, social, and emotional wellbeing, which can lead to negative EEs. The above finding agrees with a previous study by Bisetto Pons et al.,^[17] on a family-based intervention program for parents of substance-abusing youth and adolescents, which found that the program improved mental health, empowered participants, and improved their emotions toward their patients, providing them with the necessary tools to effectively handle their patients.

The current study found that implementing a program consisting of cognitive-behavioral components reduced the overall burden experienced by family caregivers. This program helped caregivers manage various issues, such as unhelpful thoughts, communica-

Table 7. Correlation between types of burdens and total patterns of expressed emotion with total score of knowledge about polysubstance abuse at pre- and post-program (n=62)

Correlations	Total score of knowledge			
	Pre		Post	
	R	p	r	p
Total burden	0.823	0.000**	0.73	0.000**
Total patterns of expressed emotion	0.787	0.000**	0.64	0.000**

** : Highly significance correlation. R: Correlation coefficient; P: p value.

tion skills, and relaxation techniques, contributing to decreased burden. This finding reflects Faghieh and Pahlavanzadeh,^[18] who showed that cognitive-behavioral therapy significantly reduced the burden on caregivers of drug-dependent individuals.

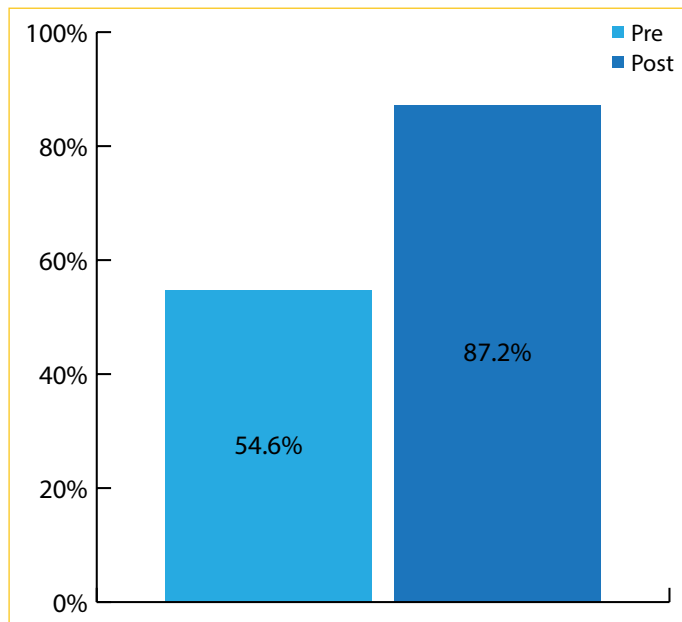


Figure 1. Percentage distribution of family caregivers' total score of knowledge about polysubstance Abuse (n=62).

In addition, the present study identified a noteworthy correlation between the EE score of family caregivers and factors such as their age, degree of relationship with the patient, occupation, residence, and education. This finding aligns with a report by Mattoo et al.^[14] on the burden experienced by family caregivers of patients with substance abuse in India. Another study reported that caregivers of mentally disorders patients are severely affected by depression and care burden and that was significantly correlated to female gender, and younger individuals.^[19]

Moreover, the current study discovered a significant association between the total burden score of family caregivers and their socio-demographic characteristics. This finding is consistent with Lai's^[20] explanation that providing care to a family member can create significant burdens and financial consequences. Thus, nurses could play a significant role in enhancing caregivers' awareness and improving the care provided to the patients with substance use. A study by Tyo et al.,^[21] suggested that nurses could tailor specific interventions to mitigate psychotically effects associated with caregiving burdens while another study by Mohamed Ali and Sayed Mohamed has linked the effect of caregiving burden to the quality of life of caregivers and the study recommended that nursing interventions could significantly improve the quality of life.^[22]

The present study revealed a strong and significant correlation between the overall level of knowledge about polysubstance abuse and the total burden experienced by family caregivers, both before and after the program's implementation. This finding suggests that caregivers who lack adequate knowledge about the care they need to provide and receive little guidance from healthcare providers are more likely to

feel unprepared and experience a higher burden from care. This finding is supported by a study by Boluktas,^[23] which reported a statistical relationship between family caregiver knowledge and the burden they experience.

Furthermore, Selçuk et al.^[1] Conducted a study on predictors of caregiver burden in family caregivers of male patients with opioid use disorders that contradicts the results of the present study regarding the relationship between the overall level of knowledge about polysubstance abuse and the burden experienced by caregivers. The study found that the degree of burden was not significantly linked to the caregiver's knowledge. The discrepancy between these findings could be because, in certain cases, factors such as the patient's degree of behavioral problems, the length of care, and the occurrence of verbal and physical violence between the patient and other family members have an impact on the level of burden experienced by caregivers of patients with polysubstance abuse. This study is one of the few studies used to measure the effectiveness of a program that reduces burdens and enhances emotional expressions for family caregivers of patients with polysubstance abuse. The study may have limited generalizability given that the caregivers were referred from only one psychiatric hospital, in addition to the small sample size.

Conclusion

The study concludes that, the psycho-educational program had a significant positive impact on increasing EE and decreasing the burden of care among family caregivers of patients with polysubstance abuse. It is clearly suggested to establish consistent and ongoing family intervention initiatives in psychiatric hospitals. These programs should furnish appropriate information and psychological assistance, and to provide psycho-educational programs for caregivers on dealing with patients with polysubstance abuse during the rehabilitation phase.

Ethics Committee Approval: The study was approved by the Faculty of Nursing at Ain Shams University Research Ethics Committee (No: 22.11.37, Date: 13/12/2022).

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