The Effect of Nursing Intervention Program on Self-Management and Social Support of Adult Epileptic Patients

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Abstract

Background: Epileptic patients who can't understand their illness and effective ways of managing it experience more adverse health outcomes than patients who understand and manage their illness well. **The aim of the study** was to assess the effect of nursing intervention program on self-management and social support of adult Epileptic patients. **Subjects and Methods: Research design:** A quasi experimental research design was adopted to carry out this study. **Setting:** This study was conducted at two centers for epilepsy in Elsinbilawin city; they are psychiatric out patient's clinic of El-sinbellawin General Hospital and psychiatric out patients clinic of El-sinbllawin Health Insurance Hospital. **Subjects**: composed of 60 adult epileptic patients from the previous mentioned setting. **Tools of data collection:** Three tools were used for data collection; interview questionnaire sheet for patients, Epilepsy self-management scale, and Social support scale. **Results** of this study revealed that there were statistically significant difference in all self-management and social support scores from pre to post intervention Program. **Conclusion:** Epilepsy self-management program had positive effect on improving patient's self-management and controlling their disease as well as positive effects on social support enhancement. **Recommendations:** Self-care strategies should be taught to epileptic patients to be able to live in the community with higher quality of life.

Key words: Epilepsy, Self-management, Social support, Intervention Program

Introduction

Epilepsy is considered one of the most frequent neurological disorders. It affects millions of people all over the world. It affects individuals of any age, race, and ethnic group. Epileptic patients experience many challenges as lower quality of life, handling complex behaviours, inability to achieve proper psychosocial adjustment [1].

Epilepsy self-management is a set of process and behaviours which helps individuals to control seizures and manage their effects on patients' life. It includes two important areas of self-care as follow:1) specific management of epilepsy as seizure triggers, seizure management, medication adherence, safety concerns, and comorbidities, management of side effects, provide first aid; and 2) chronic care management as independent living, relationship with heath care team, and lifestyle management [2].

Assisting epileptic patients to develop effective self-management behaviours may improve patients' health outcomes, and knowledge about their disease. It also can enhance patients' self-efficacy and ability to manage their disease. When epileptic patient understand his condition well, he can be able to control it effectively. The patient learn to take his medication as prescribed and not to change his dosage before consulting his physician, have enough

sleep, take adequate rest period every night, drink enough water, put on a medical alert bracelet, cope with stressful situations, limit alcoholic beverages and avoid smoking cigarettes [3].

Social support is the perception that a person is a part of group in which he can provide and receive help, love, and responsibility. Social support can be obtained from friends, family members, colleagues, and health care staffs[4]. Social support can improve health care, encourage suitable behaviors, promote sense of meaning of disease, reduce risk factors, enhance patient ability to deal with probable limitations. Therefore, social support act as a defensive factor for epileptic patients' self-esteem [5].

Social support provided by relatives has positive influences on patient's mental health, family interconnection, and quality of marital life while support provided by individuals outside the family and instrumental support had a negative consequence on family and marital life. Support provided by strangers intensifies cardiovascular reactivity while support provided by significant other reduces cardiovascular reactivity when patients are handling stressor [6].

Significance of the Study:

Epilepsy affects about 50 millions of people worldwide, 80% of them live in the developing countries. In spite of ideal treatment with anti-epileptic drugs, many epileptic patients continue having recurrent seizures. Many epileptic patients don't have enough knowledge about their disease and its management. They may be dissatisfied with the information provided by health care team even when these information considered to be adequate. This discrepancy may be related to misunderstanding of these patients educational needs by health care team and not addressing the issues that concern them. Because epilepsy is a chronic disease, epileptic patients need to be provided by sufficient information during different stages of their life. This necessitates constant assessment of their condition and provision of needed information which can assist them to control seizure [7]. There for the intervention program can play avital role in improving patients knowledge about their disease.

Aim of the study:

This study aims to assess the effect of nursing intervention program on self-management and social support of adult Epileptic patients.

Research hypothesis:

The nursing intervention program will enhance epileptic patients' self-management and social support.

Subjects and Methods:

Research design:

A quasi-experimental research design was utilized to conduct this study.

Study Setting:

This study was conducted at two centers for epilepsy in Elsinbilawin city. They are psychiatric out patients clinic of El-sinbellawin General Hospital and psychiatric out patients clinic of El-Sinbllawin Health Insurance Hospital.

Study Subjects:

It included 60 adult epileptic patients in the pre intervention program and the same number in the post intervention program.

Tool for data collection:

In order to fulfill the objectives of the study three tools were used to collect necessary data:

Tool 1: An interview questionnaire sheet:

It was developed by El-Gilany et al., [8] to assess the personal characteristic of the patients. This included information about patients as age, gender, residence, education, job status, crowding index, income, live with family, duration of illness and caregivers.

Scoring system:

For social level, the researcher used the modified form of El-Gilany, El-Wehady and El-Wasify [9] the scoring system for socioeconomic level of the patients was calculated and the total score for questions is (19) degree. Score equal or more than 64% considered high social class, 43% to 63% considered as middle social class, and 0% to 42% considered as low social class.

Tool II: Epilepsy self-management scale: This scale was originally constructed by DiIorio et al., [10] to measure self-management of epileptic patients. It consists of 38 items that assess frequency use of epilepsy self-management practices.

Scoring system:

Self-management: Items were scored as 1, 2, 3, 4, and 5 for the responses never, rarely, sometimes, often, and always respectively. Scoring was reversed for negative items. Self-management domains are (Seizure: 6 items; Information: 8 items; Lifestyle: 6 items; Medications: 10 items; Safety: 8 items), the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the domain. Means, standard deviations, and medians were calculated. A higher score indicates better self-management.

Tool (III) Social support Scale: This scale was constructed by Zimet, et al. [11] to measure perceived social support. It consists of 12-items assessing perceived social support from family and friends.

Scoring system:

Items were scored from 1 to 7 for the responses "very strongly disagree," to "very strongly agree." Scoring was reversed for negative items. The scores of the items were summed-up. Means, standard deviations, and medians were calculated. A higher score indicates more support. The total scores were then categorized into 3 levels of support: High (69-84), moderate (49-68), and low (12-48). All items are scored: Very Strongly Disagree=1, Strongly Disagree=2, Mildly Disagree=3, Neutral=4, Mildly Agree= 5, Strongly Agree=6, Very Strongly Agree = 7. For each area, the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score.

Content Validity and Reliability:

The scales were translated into Arabic language using the translation and back translation technique. Content validity was assessed by a group of seven experts in the fields of psychiatry; psychiatric nursing, psychiatric medicine, community health nursing and statistics who conducted face and content validity of all items of the tools. Cronbach alpha coefficient was calculated to assess the reliability of the study scales through their internal consistency. It was as follow self-management scale (α = 0.913) and Social support Scale (α = 0.928).

Field work
The intervention program description

The intervention program refers to the procedure of providing information to adult Epileptic patients to enhance their self-management and improve their social support.

The intervention program was implemented on four phases as follow:
1- Preparatory phase:
Preparation of the content:

The researcher develop the nursing intervention program in the form of booklet after reviewing past and recent related literature. Contents of the booklet were selected on the bases of identified patients'

needs. Detected needs, requirements and deficiencies were translated into aims and objectives of the nursing intervention program. The booklet consisted of two main parts, the first theoretical part included knowledge about Epilepsy, social support and self-management; and practical part which included methods of controlling seizure attack among epileptic patients, methods of coping with problems, and methods of relaxation techniques. Teaching methods included demonstration, individual discussions, role-play and reinforcement which were frequently applied during sessions.

Recruitment and group allocation

The researcher contacted the epileptic patients after obtaining the necessary official permissions. The researcher first introduced herself and explained the purpose of the study briefly to the patients and invited them to participate in the study. The researcher arranged with patients and their caregivers the available time to collect the data and implement the intervention program.

Pre-test assessment:

The researcher read and explained the tools items to each patient and then handed him the form to fill-in the answers. The time consumed for answering the study tools ranged from 30-45 minutes. This phase lasted for 2 months from the beginning of September 2014 to the end of October 2014.

2-Introductory phase:

During this phase the researcher described the general objectives and the aim of the intervention program and set rules for leading the sessions. The researcher started each session by providing summary about the previous session and the objectives of the new one. The researcher used simple language to suit the level of understanding of the

patients. Praise and recognition during the sessions were utilized as methods of motivation and reinforcement to enhance patients' active participation and foster learning. The sessions were supported by using pictures, posters, as well as the program booklet.

(3) Program implementation phase:

This phase took 6 months from beginning of November 2014 to end of April 2014. The program was implemented in the form of 15 sessions. Each session include small group of patients (10 patients in each group). The length of each session was different according to every patient educational level, response, time available, and the content of each session. To ensure exposure of all patients to the same learning experience, all patients received the same content using the same teaching methods, media, discussions, and same booklet.

Objectives of the program

1. To understand epilepsy (definition, the history of epilepsy, causes, types and signs and symptoms of epilepsy).
2. To identify methods of diagnosis and treatment of epilepsy and its side effects.
3. To develop better understanding of the importance of nutrition, sleep, rest, and exercise in reducing onset of seizure.
4. To identify stressors and acquire skills of coping with stressful events.
5. To help patients and caregivers recognizing first aid and recovery position for an epileptic patient.
6. To identify methods of protecting other family members from epilepsy.

The intervention program sessions were as follows:

- 1st session (Time: 30 min): During this initial session the researcher explained the purpose of the

program, determined the place of meeting, the timetable that was twice/ week for each study group, and administered the pre-assessment.

- 2nd session: (Time: 30 min): an overview of the history of epilepsy.
- 3rd session (45 minutes): providing knowledge related to definitions of epilepsy.
- 4th Session (30-45 minutes): causes and hazards of epilepsy.
- 5th Session (45 minutes): Types and signs and symptoms of epilepsy.
- 6th Session (30minutes): Diagnostic methods of epilepsy.
- 7th Session (45 minutes): The treatment of epilepsy and its side effects and methods of helping the patient remembering the drug.
- 8th Session (30-45 minutes): Nutrition of epileptic patient and importance of ketogenic diet.
- 9th Session (45 minutes): Importance of sleep and rest.
- 10th Session (45 minutes): The importance of exercise to decrease seizure onset.
- 11th Session (45 minutes): Stressors and methods of stress management.
- 12th Session (45 minutes): Advising family and caregivers of epileptic patients how to deal with the patient and about the first aids and recovery position for an epileptic patient. This session is given to epileptic patients and their caregivers at the same time because each of them must understand the importance of social support to patients.
- 13th Session (45 minutes): General advice to the epileptic patient to protect himself from seizures.
- 14th Session (45 minutes): Methods and skills used to protect other family members from epilepsy.
- Session 15(30 minutes): Focused on termination of the intervention program and recognizing patients' opinion and their benefits of the intervention program.

(4) Evaluation phase:
The evaluation of the effectiveness of the intervention program was done immediately after its implementation by comparing the change in epileptic patients' self-management and social support through applying the same tools of pre- test. The evaluation phase took two months after implementation of intervention program.

Pilot study:
A pilot study was carried out on 6 patients representing about ten percent of the total study sample. The purpose of the pilot study was to test the feasibility and clarity of the tools and to help in knowing the time needed for filling out the data collection forms. The tools didn't require any modification. The patients involved in the pilot were included in the main study sample.

Administration and Ethical consideration:
A written permission to conduct the study was obtained by submitting an official letter issued from the Dean of the faculty of nursing at Zagazig University to the directors of El sinbellawin General Hospital and El-sinbllawin Health Insurance Hospital. The study proposal was approved by the ethics committee at the faculty of Nursing at Zagazig University. The researcher contacted the epileptic patients individually and in groups to explain the purpose, procedure of the study and to obtain oral consent to participate in the study. Confidentiality and Voluntary participation were ensured. The researcher assured that the obtained information will be treated confidentially and used only for the purpose of the study. Measures were taken to ensure privacy and

confidentiality such as using code numbers for patients instead of names. Patients were informed about their rights to refuse to participate or withdraw at any time.

Statistical Analysis:

Data entry and statistical analysis were done using SPSS 20.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations and medians. Quantitative continuous data were compared using paired t-test for pre-post comparisons. The non-parametric Mann-Whitney or Kruskal-Wallis tests were used for comparison of independent groups. Qualitative categorical variables were compared using chi-square test. Spearman rank correlation was used for assessment of the inter-relationships among quantitative variables and ranked ones. In order to identify the independent predictors of self-management and support scores, multiple linear regression analysis was used. Statistical significance was considered at p-value <0.05.

Results:

Table (1) shows that patients' age ranges between 20 and 50 years old with median of 39 years, with slightly more males (60.0 %). Regarding residence, (51.7%) of the study sample live in rural areas and live in homes with crowding index less than two persons per room (66.7%), with their families (90.0%). Concerning level of education, (40.0%) of the studied sample have an intermediate education and (60%) of them have sufficient income. Regarding duration of illness, (66.7%) of patients have epilepsy for more than 35 years and (33.3%) have epilepsy for less than 35 years. Caregivers of the patients' are spouse among (31. **7**%) of them.

Table (2) clarifies changes occurs in total self-management scores after intervention sessions. It is obvious that there were statistically significant changes in all domains of self-management between pre and post intervention period (p<0.001).This table also showed that mean and standard deviation of seizure, life style, information, medication and safety were (1.2±1.0, 1.1±0.9, 0.8±0.7, 0.6±0.5, and 0.3±0.4) respectively from higher to lower.

Regarding pre-post intervention changes in patients score of social support, **table 3** mentioned that there was statistically significant difference in all items of social support p<0.001.

The relationship between patient's self-management and social support throughout the intervention period described in table 4. The table reveals that, there was only statistical significant relation between pre and post intervention in total self-management and social support. It was also noticed that total self-management score tended to increase with increased level of social support from low to moderate, and high after implementation of the intervention program.

Table 5 indicates the relationship between patients' pre-post intervention changes in self-management scores and their sociodemographic characteristics. According to the table, there was no statistically significant relation between patients' self-management at pre and post intervention period and their sociodemographic characteristics. The highest burden mean scores of pre-post intervention changes was found among patients having 35 years or more, female patients, who live in urban area, and those having basic education (0.8± 0.6, 0.9 ±0.6, 0.8±0.6 &0.9± 0.5 respectively). As well, higher burden mean score was detected among patients who are unemployed, unmarried, those who live in home have more than two persons in the same room, and those have insufficient income (0.8± 0.6, 0.7± 0.7, 0.8± 0.7, & 0.9± 0.6 respectively).

According to socio economic status, patients having high socio economic status have high pre-post changes than intermediate and lower socioeconomic status. Concerning duration of illness, pre-post changes scores increase with decrease duration of illness.

Table 6 demonstrates relationship between patients' pre-post intervention changes in social support scores and their sociodemographic characteristics. According to this table, there was no statistically significant relationship between pre-post intervention changes in social support scores and their sociodemographic characteristics except changes in income (p=0.049), and changes in socioeconomic status(p=0.04).

Table 7 reveals correlation between pre-post intervention self-management and social support scores and their personal characteristics. This table points to statistically significant positive correlations were found between patient's self-management score difference and their social support (0.642), while statistically significant negative correlations between social support score and duration of illness (-0.113), education level (-0.173), and between social support score difference and crowding index (0,014).

Table 8 clarifies correlation matrix of pre-post intervention self-management and social support scores. This table reveals statistically significant positive correlations between pre-post intervention in all items of self-management social (seizure, information, life style, medication, safety and total) and social support (0.526, 0.569, 0.600, 0.599, 0.648, 0.642) respectively at p value<0.01.

Discussion:

Epilepsy is a chronic diseases which can affect many aspects of the patients' life as physical, financial, psychological, and socio-cultural. It also has a significant influence on the patients' family and society as a whole. Therefore, epilepsy can be considered medical diseases with a profound social prognosis which can be more harmful than the disease itself. Several methods of disease management can improve patient's lifestyle. Therefore, psycho-social aspects of disease management are as essential as the medical management of epilepsy. It is important for healthcare personnel to develop care plan according to the patients' lifestyle and acceptance of epilepsy as a chronic diseases Hussini et al. [12].

The result of the current study revealed that slightly less than two third of study sample were 35 years or more and slightly more than one third of them were less than 35 years. This finding indicated that Epilepsy is more common among late adult persons and its occurrence increase with increasing age. This result is in agreement with Linehan et al. [13] study in Irland. On the contrary, Schulz et al. [14] in Germany emphasized that the majority of epileptic patients in their study were less than 35 years old while minority of them were more than 35 years old in their German study. Also, this result is contraindicated with that of the Centers for disease control and prevention[10], which found that epilepsy decrease with increasing age.

The present study revealed that the greatest percentage of epileptic patients were males, this is may be due to males exposed to stressful life events than females and think too much in their family needs and how they can afford them, hence; their brain was heavy busy and tired which may cause epilepsy. In addition to this, men were affected primarily by work   and   financial   stressors.

Conversely, women are able to cope with stressors associated multiple responsibilities, troubled family relationships, health related events of significant others. This finding agree with that of Ohaeri et al., [16] in Sudan who reported that majority of epileptic patients in their study were males.

Regarding residence of epileptic patients, the result of the current study showed that the majority of epileptic patients resided in rural areas. This could be due to poverty of rural people, unhealthy food habits, and their inability to buy their medications resulting in neglecting their health. Moreover, little or no access to medical services, treatment, and follow up care. Whereas, the patients' living near the health care centers can be able to comply with follow up plans than those living far from health care centers. This study result was in agreement with Ngugi et al. [17] in Kenya who found that the majority of their studied patients were living in rural areas. Similarly, Tripathi et al. [18] in Indian study about need for a national program for epilepsy, found that Epilepsy is higher among rural as compared with urban population. On the contrary, George, et al. [19] in their study in India found that more than three quarter of their study sample were reside in urban areas and the rest reside in rural areas.

It was also observed from this study that the highest percentage of the studied epileptic patients had intermediate level of education then high level followed by basic level. This is in disagreement with Alqahtani et al. [20] in their study in Sudan who stated that the majority of their epileptic patients have higher level of education followed by intermediate level of education and finally by basic level of education.

As regard marital status, the current study finding revealed that slightly less than two third of the study sample were married. This is may be due to married epileptic persons' life was full of conflict and stressors related to financial needs of the family, worry about decrease birth rate of epileptic patients or bearing children having epilepsy (cryptogenic epilepsy). This result is incongruent with what was found by Ohaeri et al. [16] in Sudanish study who found that the majority of their study sample were unmarried. This is finding goes online with Prakesh et al. [21] in Delhi, who found that slightly less than two third of their study sample were unmarried. Amazingly, more than half of study sample had sufficient income. In contrast Dilario et al. [22] in their study in USA found that the majority of study sample had limited income. Additionally, George, et al. [19] in their study in India mentioned that epilepsy increase with decreased patient's income.
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The present study revealed that more than half of study sample were working and rest of them were unemployed. This is congruent with Mahrer-Imhof et al. [23] in their study in Switzerland, who found that, majority of epileptic patients were employed and the minority were unemployed. On the contrary, Robinson et al. [24] mentioned that about one third of participants were employed.

Regarding duration of illness, the current study revealed that majority of epileptic patients' duration of illness was more than 35 years and the minority of them had epilepsy for less than 35 years. This may be due to with increased duration of illness, patients' frustration increase with no hope in cure, much money was wasted in treatment, worsening of heath and more complication of the disease. A study carried out by *Choi-Kwon et al. [25]* in Chorea found the same result.

The current study showed that the majority of patient's caregivers were spouse. This possibly due to spouse was near the patient

emotionally and physically more than their parents, children or any other family member, as well as spouse share their epileptic patients sadness and happiness, try to relive their partners' suffering and discomfort, helping the patients manage and overcome their disease and support ach others. In contrast, *Mahrer-Imhof et al.* [23] in *USA* found that the majority of caregivers were parents.

Regarding changes in scores of total self-management, there was statistically significant difference in total self-management from pre to post intervention period. This indicated that the intervention program led to improvement in self-management behaviors of epileptic patients. This result agreed with *Aliasgharpour et al.* [26] who found that, there was significant differences between pre and post test of epileptic patients' self-management scores in the intervention group, suggesting that the participants self-management has been improved following the program. Also, *Szemere & Jokeit* [27] in the same point added that epilepsy self-management program accomplishing positive effect; enhancing patient's knowledge about epilepsy and self-confidence; and supporting responsibility in self-management. This results disagreed with, *Dilorio et al.* [28] *who* found that self-management scores had not altered significantly after their intervention.

Concerning changes occurred in social support scores after implementation of the intervention program, there was highly statistically significant difference in social support from pre to post intervention period. This indicate that social support is important factor for epileptic patients which can help them to overcome their stigma, social isolation, fear from other people as they think that people are far from them because of their illness. All these factors can interfere with the patient ability to live as normal individual as any other person in the community. Therefore, the social support program is very essential and helpful in improving the patients' communication with friends, family and health care providers about their epilepsy. This result is in agreement with Elafros et al. [29] in Zambia who found that there were improvement in social support after the intervention program.

Regarding relations between patient's self-management and social support, the study findings revealed that there was statistically significant relationship between pre/post intervention period. This result revealed that, help enhance epileptic patients' ability to cope with the restrictions imposed by their illness, proposed that better social support improved patients' feeling of being connected with other people, which may lead to improve their perceived quality of life and have a positive effect on various aspect of their life. similarly, *Begley et al.* [30] added that there was strong association between social support and self-management.

Concerning relation between patients' pre–post intervention changes in self-management scores and their sociodemographic characteristics. The present study showed that self-management scores were not significantly different by age group. This corresponds well with the finding of *Escoffery et al.* [31] in their study in USA who found the same result.

As regard to relation between Patients' Pre–post intervention changes in social support scores and their sociodemographic characteristics. The current study mentioned that social support scores were not significantly different by age. Conversely, *Escoffery et al.* [31] in their study in USA said that social support statistically significant different by patients' ages, the mean domain score for social support decreased as the age groups increased.

The result of the current study revealed that there was statistically significant positive correlations between pre-post intervention in all items of self-management and social support. These results suggest that epileptic patients who undergo the intervention program follow the instructions that the researcher given to them, avoid situations that cause seizures, use system to manage their disease, apply all items in the program and start to make decision about medication, lifestyle, seizure control, stay safe and use information about self-management and live with their conditions, therefore,the program in useful and effective.

This finding was supported by Seethalakshmi et al[32] in their study in India about effectiveness of educational program on self-management among epileptic patients. Their finding suggests that the intervention program lead to increase mean score of total epilepsy self-management and self-management component after application of the program. This result was in agreement with Fraser et al., [33] in their Swedish study who revealed that there was an improvement in total epilepsy self-management scales and subscales from pre to the post-intervention program.

Conclusion

Based on the present study findings, it can be concluded that epilepsy self-management program had positive effects in improving patient's self-management and controlling their disease as well as positive effects on social support enhancement.

Recommendations

On the basis of the most important findings of the study, the following recommendations are suggested:

- The need for correct and proper support from the community and the family to epileptic patients is essential; and self-care strategies should be taught to patients to be able to live in the community with higher quality of life.
- Evaluating the future impact of such intervention program can be accomplished by furthering research to evaluate if patient's management was significantly improved as a result of intervention program used.
- Great emphasis on social support as a factor of enhancing adaptive coping is essential as it can provide the patients with adequate support either from relatives or health professional.

Table 1: Socio-demographic characteristics of patients in the study sample (n=60)

	Frequency	Percent
Age:		
<35	22	36.7
35+	38	63.3
Range	20.0-50.0	
Mean±SD	37.2±8.7	
Median	39.0	
Gender:		
Male	36	60.0
Female	24	40.0
Residence:		
Rural	31	51.7
Urban	29	48.3
Education:		
Basic	13	21.7
Intermediate	24	40.0
High	23	38.3
Job status:		
Unemployed	26	43.3
Working	34	56.7
Crowding index:		
<2	40	66.7
2+	20	33.3
Income:		
Insufficient	24	40.0
Sufficient	36	60.0
Live with family:		
Yes	54	90.0
No	6	10.0
Duration of illness:		
<35	20	33.3
35+	40	66.7
Range	0.0-35.0	
Mean ±SD	10±1.1	
Median	8.0	
Caregivers:		
Parents	15	25.0
Children	13	21.7
Siblings/ Relatives	13	21.7
Spouse	19	31.7

Table 2: Post-pre-intervention changes in patients' scores of total self-management (n=60)

Total self-management of:	Post-pre difference (mean±SD)	Paired-t-test	p-value
Seizure	1.2±1.0	9.00	<0.001*
Information	0.8±0.7	8.98	<0.001*
Lifestyle	1.1±0.9	9.21	<0.001*
Medications	0.6±0.5	9.01	<0.001*
Safety	0.3±0.4	6.42	<0.001*
Total	0.8±0.6	9.39	<0.001*

(*) Statistically significant at p<0.05

Table 3: Post-pre-intervention changes in patients' scores of social support (n=60)

Social support	Post-pre difference (mean±SD)	Paired-t-test	p-value
• There is a special person who is around when I am in need	0.7±0.8	6.35	<0.001*
• There is a special person with whom I can share my joys and sorrows	0.7±0.9	6.24	<0.001*
• My family really tries to help me	1.2±1.2	7.92	<0.001*
• I get the emotional help and support I need from my family	1.0±1.4	5.81	<0.001*
• I have a special person who is a real source of comfort to me	0.7±1.1	4.89	<0.001*
• My friends really try to help me	0.5±1.0	4.15	<0.001*
• I can count on my friends when things go wrong	0.6±1.0	4.32	<0.001*
• I can talk about my problems with my family	1.2±1.1	8.41	<0.001*
• I have friends with whom I can share my joys and sorrows	0.5±1.0	4.28	<0.001*
• There is a special person in my life who cares about my feelings	0.8±1.0	6.11	<0.001*
• My family is willing to help me make decisions	1.2±1.1	8.24	<0.001*
• I can talk about my problems with my friends	0.7±1.0	4.85	<0.001*
Total social support	4.6±1.2	41.84	<0.001*

(*) Statistically significant at p<0.05

Table 4: Relations between patients' self-management and social support throughout the intervention (n=60)

Total self-management score (max=5)	Support			Kruskal Wallis test	p-value
	Low	Moderate	High		
Pre-intervention:					
Range	2.4-4.4	2.6-4.3	2.5-4.3		
Mean±SD	3.0±0.4	3.1±0.5	3.4±0.7	1.23	0.54
Median	2.94	2.97	3.16		
Post-intervention:					
Range	2.6-4.2	3.0-4.4	3.2-4.5		
Mean±SD	3.5±0.5	4.0±0.4	4.1±0.4	17.75	<0.001*
Median	3.54	4.12	4.27		

(*) Statistically significant at p<0.05

Table 5: Relations between patients' post-pre-intervention changes in self-management scores and their socio-demographic characteristics (n=60)

	Self-management Post-pre score difference		Mann Whitney test	p-value
	Mean±SD	Median		
Age:				
<35	0.7±0.7	0.72		
35+	0.8±0.6	0.86	0.15	0.70
Gender:				
Male	0.7±0.6	0.81		
Female	0.9±0.6	0.92	1.17	0.28
Duration of illness (years):				
<35	0.9±0.7	1.01		
35+	0.7±0.6	0.78	1.37	0.24
Residence:				
Rural	0.7±0.7	0.79		
Urban	0.8±0.6	0.95	0.18	0.67
Education:				
Basic	0.9±0.5	0.82		
Intermediate	0.8±0.7	0.97	H=1.01	0.60
High	0.7±0.6	0.76		
Job:				
Unemployed	0.8±0.6	0.88		
Manual worker	0.7±0.6	0.81	0.40	0.53
Current marital status:				
Unmarried	0.7±0.7	0.86		
Married	0.7±0.6	0.81	0.17	0.68
Crowding index:				
<2	0.8±0.6	0.78		
2+	0.8±0.7	0.86	0.04	0.84
Income:				
Insufficient	0.9±0.6	0.86		
Sufficient	0.7±0.7	0.78	0.57	0.45
Live with family:				
Yes	0.7±0.8	0.64		
No	0.8±0.6	0.81	0.16	0.69
Socio-economic status:				
High	0.9±0.5	0.88		
Intermediate	0.7±0.6	0.79	H=0.96	0.62
Low	0.8±0.7	0.82		
Caregiver:				
Parents	0.8±0.7	0.97		
Children	0.9±0.5	1.00		
Siblings/ Relatives	0.8±0.6	0.76	H=0.93	0.82
Spouse	0.7±0.7	0.79		

Table 6 : Relations between patients' post-pre-intervention changes in social support scores and their socio-demographic characteristics(n=60)

	Support Post-pre score difference		Mann Whitney test	p-value
	Mean±SD	Median		
Age:				
<35	4.4±1.2	4.33		
35+	4.7±1.2	4.67	0.82	0.37
Gender:				
Male	4.6±1.3	4.58		
Female	4.6±1.0	4.63	0.16	0.69
Duration of illness (years):				
<35	4.6±1.0	4.33		
35+	4.6±1.3	4.63	0.00	0.96
Residence:				
Rural	4.6±1.3	4.50		
Urban	4.6±1.1	4.67	0.05	0.82
Education:				
Basic	4.7±1.2	4.46		
Intermediate	4.3±1.3	4.00	H=5.76	0.06
High	4.9±1.1	4.96		
Job:				
Unemployed	4.5±1.1	4.58		
Manual worker	4.6±1.3	4.63	0.12	0.73
Current marital status:				
Unmarried	4.5±1.2	4.46		
Married	4.7±1.2	4.63	0.24	0.62
Crowding index:				
<2	4.6±1.3	4.67		
2+	4.5±1.0	4.21	0.23	0.63
Income:				
Insufficient	4.3±1.3	4.00		
Sufficient	4.7±1.1	4.67	3.85	0.049*
Live with family:				
Yes	4.6±1.4	4.79		
No	4.6±1.2	4.58	0.00	0.95
Socio-economic status:				
High	5.2±0.7	5.17		
Intermediate	4.7±1.2	4.67	H=6.27	0.04*
Low	4.3±1.2	4.00		
Caregiver:				
Parents	4.6±1.1	4.50		
Children	4.7±1.2	4.96		
Siblings/ Relatives	4.2±1.3	4.00	H=3.71	0.29
Spouse	4.8±1.2	4.67		

Table 7: Correlations between post-pre-intervention self-management and social support scores and their personal characteristics(n=60)

Items	Spearman's rank correlation coefficient	
	Self-management score difference	Support score difference
Support	.642**	
Age	.044	.034
Duration of illness	-.121	-.113
Education	-.105	-.173
Crowding index	.026	-.014

(**) Statistically significant at p<0.01

Table 8: Correlation matrix of post-pre-intervention self-management and support scores(n=60)

Self-Management	Spearman's rank correlation coefficient					
	Support	Self-management of:				
		Seizure	Information	Lifestyle	Medication	Safety Total
Seizure	.526**					
Information	.569**	.886**				
Lifestyle	.600**	.912**	.853**			
Medications	.599**	.851**	.851**	.822**		
Safety	.648**	.558**	.609**	.566**	.592**	
Total	.642**	.940**	.949**	.924**	.924**	.712**

(**) Statistically significant at p<0.01

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