ORIGINAL RESEARCH

Value of Group Intervention on Prognosis of Quality of Life in Epileptic Patients Treated With Sodium Valproate and Lamotrigine

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ABSTRACT

Objective • The study intended to analyze the effects of a group nursing intervention on quality of life (QoL) of patients with epilepsy (EP) after treatment with sodium valproate combined with lamotrigine.

Design • The research team performed a randomized controlled trial.

Setting • The study took place in the Department of Neurology at the Affiliated Brain Hospital of Nanjing Medical University in Nanjing, Jiangsu, China.

Participants • Participants were 170 EP patients at the hospital between January 2019 and August 2022.

Intervention • The research team randomly assigned participants to one of two groups: (1) 85 to the intervention group, and they took part in a group nursing intervention; and (2) 85 to the control group (n = 85) and they received conventional care.

Outcome Measures • To evaluate participants' risk of suicide, psychological state, and QOL, participants completed at baseline and postintervention: (1) the Mini-International Neuropsychiatric Interview (MINI), (2) the Self-Rating Scale for Psychiatric Symptoms 90 (SCL-90), and (3) the Short Form Health Survey (SF-36) To assess participants' management ability, self-efficacy, and social functioning, they also completed at those time points: (1) the EP Self-Management Behavior Scale (ESMS), (2) the General Self-Efficacy Scale (GSES), and (3) the Social Functioning Deficit Screening Scale (SDSS). Finally, the research also investigated participants' satisfaction with the nursing care.

Results • The intervention group's risk of suicide decreased between baseline and postintervention, and its SCL-90 scores were significantly lower and SF-36 scores were significantly higher than those of the control group (both $P < .05$). In addition, the intervention group's ESMS and GSES scores were also significantly higher than those of the control group, while its SDSS score was significantly lower than that of the control group (all $P < .05$). Finally, the intervention group's nursing satisfaction was also significantly higher than that of the control group ($P < .05$).

Conclusions • The group nursing intervention can effectively improve the psychological states of EP patients, reduce their pain, improve their self-management skills and QoL, provide them with better and more detailed nursing care, and facilitate the treatment and recovery of EP patients, which can have a significant value in clinical practice (*Altern Ther Health Med.* 2023;29(3):193-199).

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Epilepsy (EP) is a brain dysfunction caused by sudden abnormal discharges of neurons in the brain, can occur in people of any age, and is a common clinical neurological disorder.[1] EP affects more than 70-million people worldwide, and China alone has more than 10-million people with EP.[2] Recently, with global aging, the incidence of EP has shown a yearly increase and has become a serious public-health burden.[3]

EP seriously affects patients' normal lives due to its sudden onset and recurrence.[4] Currently, no complete clinical cure exists for EP, and the only way to ensure patients' normal quality of life (QoL) after the disease's development is to stabilize the disease's progression with prolonged medication.[5]

Not only does the long treatment cycle with recurrent episodes of EP threaten patients physiologically but also it can cause psychological harm.[6] Also, the long-term treatment of EP is a great burden om patients' families and can result in families' rejection of and indifference to patients, which can seriously undermine their confidence in treatment and can cause some patients to give up treatment.[7,8]

In the traditional care model for EP, clinicians generally pay the most attention to the care of patients' conditions, and it's often easy to neglect the psychological guidance of patients.[9] Adverse psychological disorders, such as depression and anxiety, have become the focus of clinicians' attention as the most common psychiatric co-morbidities in EP.[10] Intense anxiety and depression and other psychiatric abnormalities may even cause extreme behaviors in patients, such as self-harm and suicide, to which the family's rejection can contribute.[7,8,10]

Therefore, the focus of modern EP treatment is more effective ways to improve the psychological state of EP patients. Some studies have found that psychological care is an effective measure to improve the QoL of adults with epilepsy.[11,12]

Group Interventions

The group intervention is a new disease-management model. It integrates clinical and preventive aspects and not only compensates for the lack of postdischarge management of patients in the traditional treatment model but also strengthens patients' health education.[13]

The group intervention integrates chronic-disease diagnosis and management and group health education and individualized treatment and has achieved highly significant results in the treatment of psychiatric disorders.[14] Molassiotis et al found that group-based interventions can effectively improve the psychological states of patients with advanced cancer.[15]

The group intervention is based on self-care interventions and encourages patients to find solutions to their problems through group discussions as well as through support from multiple sources, such as other patients, family members, and physicians, as a way to promote their active participation in treatment and develop their ability to take responsibility for themselves.[16]

The group intervention not only requires healthcare workers to pay attention to the patients' psychological states but also provides health education to families in addition to patients, including instructing family members how to properly care for patients and supervise their medications.

With the encouragement and comfort of the nursing staff and family members, patients can discuss negative emotions; families can detect changes in patients' psychological states so that they can communicate with the nursing staff effectively, in a timely manner.[17] This can greatly reduce patients' fears, anxiety, irritability, and other negative emotions during EP treatment, which not only is more conducive to recovery but also can improve patients' compliance with treatment. The family's attention can help patients' self-esteem and thus build up their confidence to overcome the disease.

Group interventions emphasize patients' subjective feelings. By focusing on health education and behavioral guidance based on skills training, patients can change from passively receiving treatment to actively managing their own health. By communicating, learning and helping each other, patients can eliminate their doubts and anxiety resulting from the disease and promote their psychological health, and the process can also subconsciously improve patients' psychological states during the recovery process.[18]

Meanwhile, group interventions have changed the traditional one-to-one treatment approach and improved the efficiency of healthcare workers, allowing them to provide more detailed and high-quality follow-up services to patients.[19]

Group interventions are highly suitable for patients with EP, but no literature exists on the relationship between psychological care combined with family-centered group interventions and QoL, anxiety, depression, and suicide risk for adults with epilepsy.

The current study intended to provide a more comprehensive reference for the future rehabilitation of EP patients by analyzing the value of group interventions in EP.

METHODS

Participants

The research team performed a randomized controlled trial. The study took place in the Department of Neurology at the Affiliated Brain Hospital of Nanjing Medical University in Nanjing, Jiangsu, China. Potential participants were EP patients at the hospital between January 2019 and August 2022.

The study included potential participants if: (1) they met the relevant criteria established by the International League Against EP (ILAE)[20] in 2017; (2) they had had an MRI, CT, or 24-hour ambulatory EEG the had confirmed their diagnosis ; (3) they were at least 18 years old and less than 70 years old; (4) they had complete clinical data and medical records available; (4) they or their guardians were able to use smartphones.

The study excluded potential participants if they: (1) had a mental illness, were unconscious, or had difficulty communicating; (2) had other severe neurological disorders; or (3) had malignancies.

The research team obtained signed informed consent forms from the participants and their families. The hospital's ethics committee s reviewed and approved the study's protocols. This study was conducted in strict compliance with the Declaration of Helsinki.

Procedures

Groups. The research team randomly assigned participants to one of two groups: (1) the intervention group who took part in a group nursing intervention; and (2 the

control group who received conventional nursing care. We are using the random number table method for grouping. Each patient was given a number, and a computer was used to randomly sort these numbers and divide them into 2 groups, and the corresponding patients were grouped by this criterion.

Medications. All participants received valproate combined with lamotrigine for EP.

Outcome measures. To evaluate participants' risk of suicide, psychological state, and QOL, participants completed at baseline and postintervention: (1) the Mini-International Neuropsychiatric Interview (MINI),[21] (2) the Self-Rating Scale for Psychiatric Symptoms 90 (SCL-90),[22] and (3) the Short Form Health Survey (SF-36).[23] To assess participants' management ability, self-efficacy, and social functioning, they also completed at those time points: (1) the EP Self-Management Behavior Scale (ESMS),[24] (2) the General Self-Efficacy Scale (GSES),[25] and (3) the Social Functioning Deficit Screening Scale (SDSS).[26] Finally, the research also investigated participants' satisfaction with the nursing care.

Interventions

Control group. During participants' hospitalizations, the research team: (1) implemented health education, and at one week after the participant's discharge, by telephone assessed participants medication compliance, self-care, anxiety, depression, and suicidal tendency and (2) informed participants and their families of the importance of a healthy diet and regular work and rest to avoid triggering EP. The research team again followed up by telephone at one, 3, and 6 months after discharge.

Intervention group. The research team introduced EP-related knowledge to the participants' families, including the causative factors, the disease's mechanisms, and its conditions, so that the family could understand the patient better and provide more effective psychological support.

The research team established a cluster intervention team, which conducted a home assessment based on routine care. At the same time, the research team set up a communication platform and an interactive group chat for participants, their family members, and medical staff, providing a platform for group members to consult and interact online.

The group's members took turns to send EP-related knowledge and precautions through text, pictures, and videos, and the research team held online psychological counseling activities every Saturday from 9:00 to 10:00 AM to answer questions from patients and their families.

Every 2 weeks, the research team organized interactive communications between participants and their family members to identify problems, discuss solutions to improve the prognosis, and provide guidance to participants on self-management. The team required each participant to develop a weekly action plan and feedback on the progress of actions to achieve relevant goals. The research team provided psychological care to participants during follow-up visits, kept abreast of their psychological statuses, and provided guidance if it was poor. Also the team instructed participants and their families on the correct use of medication and indicated that family members should supervise participants' medications. The research team also provided dietary and exercise guidance and informed participants and their families that participants should eat a light diet, not smoke or drink, and take part in aerobic exercise.

Outcome Measures

Suicide risk assessment. The research team conducted the assessment using the suicide risk module[27] from the Mini International Neuropsychiatric Interview (MINI), which Sheehan developed.[21] It includes six questions that quantify a participant's current suicide risk, with 1-5 = low risk, 6-9 = moderate risk, and ≥10 = high risk.

Psychological assessment. The Self-Rating Scale for Psychiatric Symptoms (SCL-90)[11] evaluates patients' psychological states and includes 10 items: (1) somatization, (2) obsessive-compulsive symptoms, (3) eating and sleeping, (4) depression, (5) fear, (6) hostility, (7) psychotic symptoms, (8) anxiety, (9) interpersonal relationships, and (10) paranoia. The scale uses a score of 1-5 for each item, and a higher total score indicates more-severe, negative psychiatric symptoms.

QoL assessment. The Short Form Health Survey (SF-36) evaluates QoL. It includes eight dimensions: (1) somatic functioning, (2) somatically induced functional limitations, (3) general health, (4) somatic pain, (5) vitality, (6) emotionally induced functional limitations, (7) mental health, and (8) social functioning. The scale has a total score of 100 for each dimension, with higher scores indicating a higher corresponding QoL.

Self-management ability assessment. The EP Self-Management Behavior Scale (ESMS) assesses the self-management ability of patients. It includes five dimensions: (1) lifestyle, (2) safety management, (3) information management, (4) episode management, and (5) medication management. Higher scores indicate greater self-management ability than lower scores.

Self-efficacy and social functioning assessment. The Self-Efficacy Scale (GSES) and the Social Functioning Deficit Screening Scale (SDSS) assess patients' self-efficacy and social functioning, respectively. Higher GSES scores indicate greater self-efficacy and higher SDSS scores indicate more severe deficits in social functioning than lower scores.

Nursing satisfaction. The research team used an anonymous satisfaction survey to assess participants' satisfaction, with total score of 10 out of 10: 10 = very satisfied, 7-9 = basically satisfied, 4-6 = needs improvement, and 1-3 = dissatisfied. Total satisfaction = (very satisfied + basically satisfied)/total × 100%.

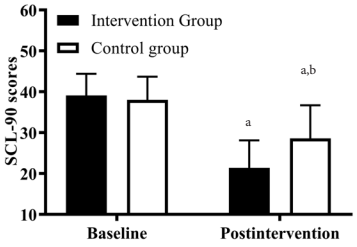
Statistical Analysis

The research team used the SPSS 23.0 software (IBM, Armonk, New York, USA) for statistical analysis. The team: (1) expressed counting data as numbers and percentages (%)

Table 1. Participants' Demographic and Clinical Characteristics at Baseline

Characteristics		Intervention Group n = 85 n (%) Mean ± SD	Control Group n = 85 n (%) Mean ± SD	χ^2 (t)	*P* value
Gender	Male	54 (63.53)	48 (56.47)	0.882	.348
	Female	31 (36.47)	37 (43.53)		
Age, y		38.7 ± 11.3	39.2±10.7	0.296	.764
Education, y	Primary and middle school	49 (57.65)	55 (64.71)	1.318	.517
	High school or junior college	25 (29.41)	23 (27.06)		
	College and above	11 (12.94)	7 (8.24)		
Living Environment	Rural	41 (48.24)	46 (54.12)	0.589	.443
	Urban	44 (51.76)	39 (45.88)		
Illness Duration, d		154.1 ± 71.6	151.2 ± 88.2	0.235	.814
Marital Status	Married	49 (57.65)	45 (52.94)	0.381	.537
	Unmarried	36 (42.35)	40 (47.06)		
Seizure Frequency, times/d		2.9 ± 1.1	3.1 ± 1.1	1.185	.238
Number of medications used, n		2.3 ± 1.0	2.1 ± 0.9	1.371	.172

Figure 1. Comparison of Changes Between Baseline and Postintervention in the SCL-90 Scores of the Intervention and Control Groups



[a]*P* < .05, indicating that both groups' scores had significantly decreased between baseline and postintervention

[b]*P* < .05, indicating that postintervention the intervention group's score was significantly lower than that of the control group

Abbreviations: SCL-90, Symptom Checklist 90.

Table 2. Comparison of Changes in Suicide Risk of the Different Risk Groups Between Baseline and Postintervention and Between the Intervention and Control Groups Postintervention

Risk	Intervention Group n = 85 n (%)	Control Group n = 85) n (%)	Difference Between Intervention and Control Groups	
			χ^2	*P* value
Baseline				
Low risk	32 (37.65)	30 (35.29)	0.102	.750
Medium risk	34 (40.00)	33 (38.82)	0.025	.875
High risk	19 (22.35)	22 (25.88)	0.289	.591
Postintervention				
Low risk	60 (70.59)	36 (42.35)	13.780	<.001[b]
Medium risk	21 (24.71)	32 (37.65)	3.317	.069
High risk	4 (4.71)	17 (20.0)	9.182	.002[b]
Change in Low Risk Group				
χ^2	19.440	0.892		
P value	<.001[a]	.345		
Change in Medium Risk Group				
χ^2	4.542	0.025		
P value	.033	.875		
Change in High Risk Group				
χ^2	11.310	0.832		
P value	<.001[a]	.362		

[a]*P* < .05, indicating that the number of people at high risk of suicide in the intervention group was significantly lower and that the number of people in the intervention group at low risk was significantly higher than at baseline

[b]*P* < .05, indicating that postintervention the number of people at high risk of suicide in the intervention group was significantly lower than that of the control group and that the number of people in the intervention group at low risk was significantly higher than that of the control group

and compared the two groups using the χ^2 test and (2) expressed measurement data as means ± standard deviation (SDs) and compared the two groups using the *t* test. *P* < .05 indicated a statistically significant difference.

RESULTS

Participants

No significant differences existed in the demographic and clinical characteristics of the groups at baseline (*P* > .05), indicating comparability between them (Table 1).

Psychological Status

Figure 1 shows that no significant differences existed between the groups in the SCL-90 scores at baseline (*P* > .05). Both groups' scores had significantly decreased between baseline and postintervention (both *P* < .05). Postintervention, the intervention group's mean SCL-90 score was 21.4 ± 6.7, and the control group's was 28.6 ± 8.1, with the intervention group's score postintervention being significantly lower than that of the control group (*P* < .05).

Suicide Risk

Table 2 shows that no significant differences existed between the groups in the suicide risk between the groups at baseline (*P* > .05). Postintervention, the number of people at high risk of suicide in the intervention group was significantly lower than at baseline (*P* < .001) and significantly lower than that of the control group (*P* = .002). The number of people in the intervention group at low risk significantly increased (*P* < .001), and the change was significantly greater than that of the control group (*P* < .001). No significant difference existed in the suicide-risk profile for the control group postintervention compared to that at baseline (*P* > .05).

Self-efficacy and Social Functioning

Figure 2 shows that no significant differences existed between the groups in the GSES and SDSS scores at baseline (both $P > .05$). Postintervention, the GSES scores of both groups had increased significantly from baseline (both $P < .05$), and the intervention group's scores were significantly higher than those of the control group ($P < .05$). Postintervention, the SDSS scores of both groups had decreased significantly from baseline (both $P < .05$), and the intervention group's scores were significantly lower than that of the control group ($P < .05$) .

Quality of Life

Figure 3 shows that no significant differences existed between the groups in the SF-36 scores for each dimension at baseline (all $P > .05$). Postintervention, the SF-36 scores for each dimension had significantly increased for both groups from baseline (all $P > .05$), but the intervention group's scores for each dimension were significantly higher postintervention than those of the control group (all $P < .05$.).

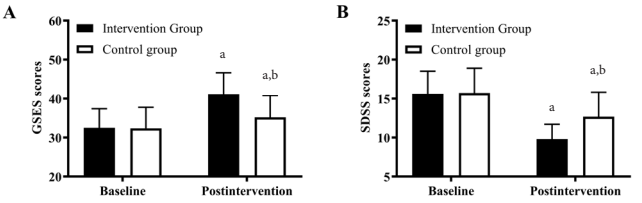
Self-management Ability

Figure 4 shows that no significant differences existed between the groups in the ESMS scores for each dimension at baseline (all $P > .05$). Postintervention, both groups' ESMS scores for each dimension had significantly increased from baseline (all $P < .05$), but the intervention group's increase in each dimension was significantly greater than that of the control group (all $P < .05$).

Nursing Satisfaction

Table 3 shows that the intervention group's nursing satisfaction rate was 87.06%, and the control group's was 72.94%. The intervention group's nursing satisfaction was significantly higher postintervention than that of the control group ($P = .021$).

Figure 2. Comparison of the Changes Between Baseline and Postintervention in the Self-efficacy and Social Functioning of the Intervention and Control Groups. Figure 2A shows the GSES scores, and Figure 2B shows the SDSS scores.

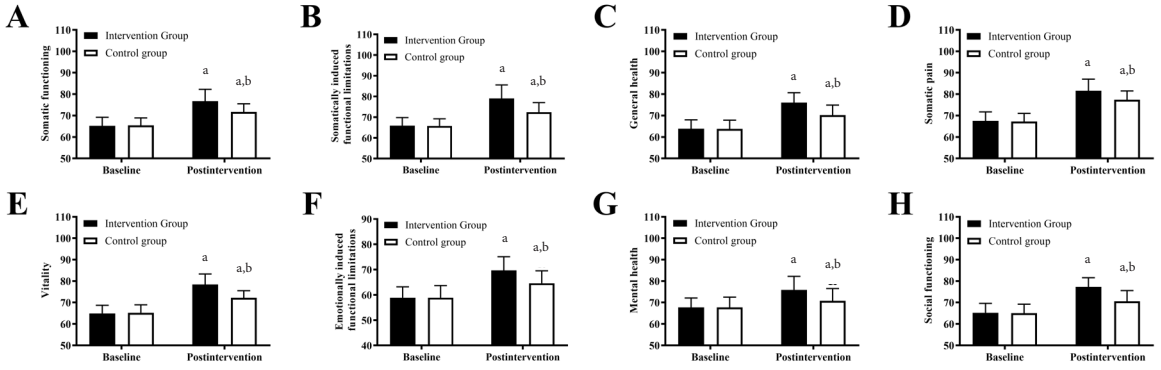


[a]$P < .05$, indicating that both groups' GSES scores had significantly increased and SDSS scores had significantly decreased between baseline and postintervention

[b]$P < .05$, indicating that postintervention the intervention group's GSES scores were significantly higher and SDSS scores were significantly lower than those of the control group

Abbreviations: GSES, General Self-Efficacy Scale; SDSS, Social Functioning Deficit Screening Scale.

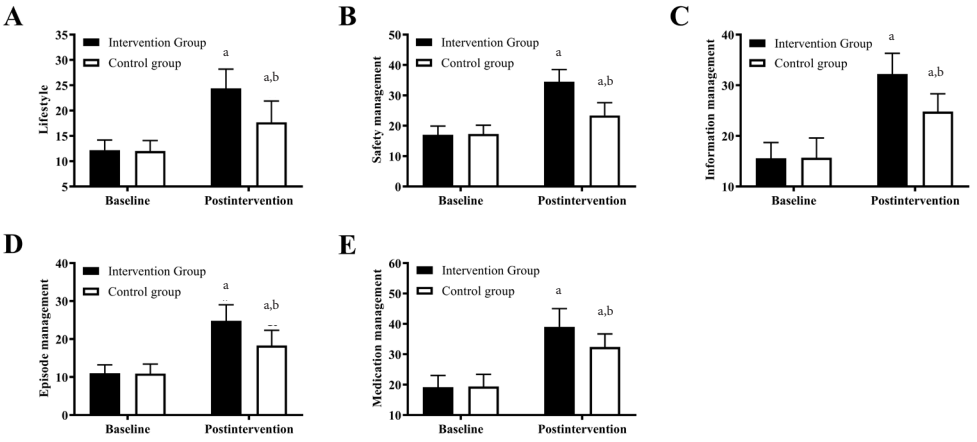
Figure 3. Comparison of the Changes Between Baseline and Postintervention in the Quality of life of the Intervention and Control Groups. Figure 3A shows the somatic function scores; Figure 3B shows the somatically induced functional limitation score; Figure 3C shows the overall health scores; Figure 3D shows the somatic pain score; Figure 3E shows the vitality; Figure 3F shows the emotion-induced functional limitation score; Figure 3G shows the mental health scores; and Figure 3H shows the social functioning score.



[a]$P < .05$, indicating that both groups' SF-36 scores for each dimension had significantly increased between baseline and postintervention

[b]$P < .05$, indicating that postintervention the intervention group's SF-36 scores for each dimension were significantly higher than those of the control group

Figure 4. Comparison of the Changes Between Baseline and Postintervention in the ESMS scores of the Intervention and Control Groups. Figure 4A shows the lifestyle scores; Figure 4B shows the security management score; Figure 4C shows the information management score; Figure 4D shows the episodes management score; and Figure 4E shows the medication management score.



[a]$P < .05$, indicating that both groups' ESMS scores for each dimension had significantly increased between baseline and postintervention

[b]$P < .05$, indicating that postintervention the intervention group's ESMS scores for each dimension were significantly higher than those of the control group

Abbreviations: ESMS, EP Self-Management Behavior Scale.

Table 3. Comparison of Nursing Satisfaction Survey Between the Intervention and Control Groups Postintervention

Groups	Very Satisfied	Basically Satisfied	Needs Improvement	Dissatisfied	Total Satisfaction
Intervention, n = 85	47 (55.29)	27 (31.76)	9 (10.59)	2 (2.35)	87.06
Control, n = 85	26 (30.59)	36 (42.35)	16 (18.82)	7 (8.24)	72.94
χ^2					5.294
P value					.021[a]

[a]$P = .021$, indicating that the intervention group's nursing satisfaction was significantly higher postintervention than that of the control group

DISCUSSION

During the group intervention in the current study, the research team established a good health care-patient-family relationship. The current research team found that the SCL-90 and MINI suicide-risk scores were significantly lower in the intervention group than those of the control group postintervention, while the self-GSES and SDSS scores were significantly higher. This indicates that group interventions can effectively improve the prognosis of EP patients, impacting their psychological states and QoL, which is consistent with Molassiotis et al's findings that group-based interventions can enhancing patients' psychological states.[15]

In addition, the current research team also saw a significant increase in the intervention group's ESMS and SF-36 scores, which also indicated that the group intervention not only had an excellent positive effect on the psychological state of EP patients but also suggested that it can benefit their prognosis for recovery in many ways. Finally, the intervention group's nursing satisfaction also illustrates the value of group interventions.

The current research intends to provide more targeted group interventions based on individual differences. Because of the long pathological course of EP, the team will also follow patients for a longer period of time to assess the impact of the group intervention on the long-term prognosis of EP patients.

All the observables in this study were objective questionnaires, which may make the results of the study not more representative, and we should add some EEG examinations to increase the scientificity of the experimental results.

CONCLUSIONS

The group intervention nursing can effectively improve the psychological states of EP patients, reduce their pain, improve their self-management skills and QoL, provide them with better and more detailed nursing care, and facilitate the treatment and recovery of EP patients, which can have a significant value in clinical applications.

AUTHORS DISCLOSURE STATEMENT

The General Project of Nanjing Health Science and Technology Development (No.YKK18114) and the General Social Development Medical Project of Nanjing Science and Technology Commission (No.201803029) supported the study. The authors declare that they have no conflicts of interest related to the study.

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