ORIGINAL RESEARCH

The Analysis of Transition Readiness of Adolescent Epilepsy Patients from Childhood to Adult from the Perspective of Disease Self-management: A Cross-sectional Study in Southwest China

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ABSTRACT

Objective • The objective of this study was to investigate the transition readiness of juvenile epilepsy patients during the transition period from childhood to adulthood and analyze the impact of patients' basic characteristics and self-management on their transition readiness.

Methods • A total of 376 adolescent epileptic patients were selected as research objects from 3A general hospitals located in Chongqing, Guizhou, and Yunnan respectively, and a 3A children's specialist hospital in Chongqing, Jiangxi from May 2021 to February 2022. The readiness for transition was assessed using a transition readiness questionnaire, and patients' self-management skills were evaluated using the Self-Management Scale for Epilepsy Patients. Data analysis was conducted to determine the readiness for transition and examine the factors influencing it.

Results • The mean overall transition readiness score in adolescent epilepsy patients was (56.60±12.51). Among the six dimensions, drug management, disease understanding, doctor-patient interaction, health responsibility, medical involvement, and resource utilization were ranked highest to lowest. The examination identified age, epilepsy duration, medication types, and primary caregivers as the primary factors influencing transition readiness in adolescent epilepsy patients ($P < .001$). Additionally, there was a favorable correlation between the total disease self-management score and transition readiness (r=0.487, $P < .01$), signifying the positive predictive impact of self-management skills on transition readiness.

Conclusion • Adolescent epilepsy patients exhibited moderate readiness for the transition from childhood to adulthood. Older patients with longer disease duration and stronger self-management skills displayed a higher level of readiness. Targeted clinical interventions that prioritize self-management skills are essential for facilitating a smoother transition into adulthood for patients. (*Altern Ther Health Med.* 2024;30(12):356-361).

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INTRODUCTION

Epilepsy is a common chronic disease in children, and for approximately 60% of affected children, treatment continues into adulthood.[1] The impact of epilepsy, therapeutic drugs, and comorbidities can significantly affect the physical, psychological, and social functions of epileptic patients.[2,3] This poses challenges not only for patients and their families but also for healthcare professionals involved in their care. As children with epilepsy are now living longer, the focus of medical care has shifted towards transitioning pediatric patients into adult care. This transition from pediatric to adult medical care brings about a significant change in patient participation, with pediatric care being family-led and parent-involved. In contrast, adult care places greater emphasis on patient autonomy and decision-making.[4,5]

The transition from pediatric to adult medical care involves a systematic process of shifting chronically ill adolescents from a "child-centered" to an "adult-centered" healthcare system.[6] A key aspect of a successful transition is the readiness of the adolescent patient to assume responsibility for their healthcare.[7] Transition readiness refers to the capacity of chronically ill adolescents and their support systems to prepare, initiate, conduct, and complete the medical transition.[8-10] Researchers both domestically and internationally have utilized the concept of transition readiness to assess

patients' readiness during the transition period, encompassing aspects such as disease knowledge, self-management skills, medical decision-making, and responsibility-taking.[11-13] Guidelines for child-to-adult medical transition emphasize the importance of active adolescent-centered self-management and recommend implementing transitional support strategies from the age of 12 or earlier.[14,15]

Besides, the effective transition of adolescent epilepsy patients to adult care requires attention to disease knowledge, self-management skills, medical decision-making, and family dynamics.[16] Identifying and addressing unmet needs, such as educational attainment, sleep disorders, and sudden unexpected death in epilepsy, is also critical . These factors influence patients' ability to participate in their care, make informed medical decisions, and manage the responsibilities of adult healthcare. Supporting patients during this transitional period can ensure a smoother and more successful transition to adult care.

This study specifically focuses on adolescent epileptic patients between the ages of 12 and 18 and aims to explore their transition readiness from a patient self-management perspective. By examining the factors influencing transition readiness, this study aims to provide a theoretical basis for developing effective transitional care programs.

In summary, this study brings a fresh perspective to understanding transition readiness in adolescent epilepsy patients. By examining the impact of factors such as age, disease duration, medication type, and primary caregiver, the study uncovers new insights into the preparation required for the shift from childhood to adulthood in this patient group. The positive correlation between overall disease self-management scores and transition readiness emphasizes the crucial role of self-management skills in predicting successful transitions. These findings highlight the importance of targeted interventions that enhance self-management abilities, enabling a smoother transition into adulthood for these patients. This study fills a knowledge gap and provides practical implications for clinical practice, empowering healthcare professionals to tailor their strategies for better care and outcomes in this vulnerable population.

MATERIALS AND METHODS

Patients

Using the convenience sampling method, adolescent epileptic patients were selected as research objects from 3A general hospitals located in Chongqing, Guizhou, and Yunnan respectively, and a 3A children's specialist hospital in Chongqing, Jiangxi from May 2021 to February 2022.

Admittance standard

Inclusion criteria: 1. Children diagnosed with epilepsy for at least six months. The diagnostic criteria for epilepsy were based on the new definition of epilepsy proposed by ILAE in 2014, and the classification of epilepsy was based on the revised version of ILAE[17] in 2017; 2. Patients age: 12-18 years, primary school education or above, and knowing self-diagnosis; 3. The patient is stable with no epileptic seizure in the past 3 months; 4. Patients and guardians are giving informed consent to participate in the study.

Exclusion criteria: having communication barriers; suffering from chronic diseases, malignant diseases, or other organic diseases of other systems. This study was reviewed by the hospital ethics committee and followed the principle of informed consent.

General Information Questionnaire

The self-designed questionnaire includes demographic data and disease data such as the patient's gender, age, course of the disease, number of medications, state of consciousness at the time of the attack, place of residence, main caregiver and their education background, family income, etc. The Transition Readiness Questionnaire The Self-Management and Transition to Adulthood with Rx = Treatment (STARx) Questionnaire, the STARX Questionnaire compiled by American scholar Ferris et al.[18] were adopted. The Chinese version of the questionnaire was translated into Chinese by a research team from Shanghai Jiao Tong University in 2018.[19] The reliability and validity of the Chinese version of the questionnaire were good, with the Cronbach's α coefficient of 0.83 and the content validity index of 0.92. The questionnaire consists of three parts. The first part is the specific actions of the patients in the past three months, the second part is the patient's understanding of their disease, and the third part is the patients' difficulty in handling things. The questionnaire consisted of 18 items and 6 dimensions, namely, drug management (4 items), doctor-patient communication (3 items), medical treatment participation (3 items), disease knowledge (3 items), resource utilization (3 items), and health responsibility (2 items). Scores for drug-related items (6 items in total, set to 6 for the option "I don't take medication now") are 1-6 points and 1-5 points for the remaining items. The total score is 18-96 points, the higher the score, the better the preparation for the transition. The Epilepsy Self-Management Scale, ESMS. The scale of self-management for epilepsy patients was revised by Dilorio and his team in 2004 [22] and was translated into Chinese by Xiao Xiao Qiang et al.[23] with the Cronbach'sαcoefficient of 0.848. The scale has 34 items and five dimensions, namely medication management (10 items), information management (5 items), safety management (7 items), attack management (6 items), and lifestyle management (6 items). Scores for each item are 1-5 points, and the total score is 34-170 points, the higher the score, the better self-management.

Survey Method

A total of 8 nurses in the research group participated in the survey, and the data were collected after unified training for the investigators. The training content includes explaining the purpose, significance, precautions, and confidentiality principles of the investigation to patients and guardians. Teenagers with epilepsy fill in the questionnaire by scanning the two-dimensional code of Questionnaire Star (an online survey tool) and completing it on the spot. For the items that were not understood, the investigator explained them on the

spot. A total of 379 questionnaires were collected, and 376 valid questionnaires were retained after removing obvious non-filling questionnaires, with an effective recovery of 99.2%.

Statistical Methods

SPSS version 26.0 software was used for statistical analysis. Measurement data conforming to normal distribution were expressed as mean ± standard deviation, comparison between two groups was performed by *t* test, and comparison between multiple groups was performed by variance analysis. Pearson correlation analysis was used to test the correlation. The multifactor analysis of transition readiness was carried out using a multiple linear regression model, with the test standard α=0.05.

RESULTS

The readiness and self-management scores for the transition period from childhood to adulthood in juvenile epilepsy patients are shown in Table 1. This table provides an overview of the scores obtained by the patients in terms of their readiness for the transition process and their self-management abilities. These scores serve as important indicators to assess the level of preparedness of the patients as they move from pediatric care to adult care. The table highlights the variability in readiness and self-management among the participants, providing valuable insights into the challenges that may be faced during the transition.

The univariate analysis of influencing factors on the readiness for the transition from childhood to adulthood in juvenile epilepsy patients is presented in Table 2. This analysis examines various factors that may have an impact on the patient's readiness for the transition. By assessing these factors individually, the table provides a preliminary understanding of their potential influence. It identifies variables that demonstrate a statistically significant association with transition readiness, shedding light on key determinants that should be considered in developing effective transition programs for juvenile epilepsy patients.

Table 3 displays the correlation between self-management and readiness for the transition from childhood to adulthood in juvenile epilepsy patients. This table presents a comprehensive analysis of the relationship between self-management abilities and the patient's readiness for the transition. By assessing the correlation coefficient, it reveals the strength and direction of the relationship. The table emphasizes the importance of self-management skills in facilitating a smoother transition process and highlights the need to enhance these skills among the patients to improve their readiness for adulthood care.

With transition readiness as the dependent variable, statistically significant items and total self-management scores identified in the univariate analysis were included in the multiple linear regression model. The assignment of independent variables is detailed in Table 4. This table outlines the variables included in the regression model, specifying their categorization and corresponding assignments. By incorporating these variables into the analysis, the table demonstrates a systematic

Table 1. Scores of Readiness and Self-Management During the Transition Period from Child to Adult in Adolescent Epilepsy Patients (n=376)

Dimension	Score ($\bar{x}$ ± SD)	Value Range
Transition readiness	56.60±12.51	18-96
Drug Management	16.73±3.72	4-24
Doctor-patient communication	8.90±2.81	3-15
Treatment participation	7.73±2.89	3-15
Disease knowledge	9.75±2.93	3-16
Resource utilization	7.17±2.99	3-16
Health responsibility	6.31±1.80	2-10
Disease self-management	93.92±14.30	34-170
Drug management	23.57±4.21	10-50
Information Management	11.56±3.84	5-25
Safety management	16.13±3.36	7-35
Seizure management	22.44±4.56	6-30
Lifestyle Management	20.22±4.77	6-30

Table 2. Univariate Analysis of Influencing Factors on Readiness for Transition from Child to Adult in Juvenile Epilepsy Patients (n=376)

Item	Number of Cases	Transitional Readiness	*t*/F	*P* value
Gender			-0.635	.526
Male	189	56.20±12.63		
Female	187	57.01±12.40		
Age (years)			-6.242	.000
12~15	261	54.06±11.80		
15.1~18	115	62.38±12.17		
The course of disease (year)			8.446	.000
≤1	34	51.82±10.75		
1~3	81	54.05±10.25		
3~5	95	54.44±10.67		
>5	166	60.07±13.92		
Number of drug types			31.166	.000
0 type (discontinued)	49	68.80±10.75		
1 type	189	54.99±11.66		
2 types and above	138	54.48±11.83		
State of consciousness at onset			-1.684	.093
Clearly conscious	69	54.32±13.37		
Loss of Consciousness	307	57.12±12.27		
Single child or not			-0.632	.528
Yes	133	56.05±12.15		
No	243	56.91±12.71		
Primary caregiver			13.449	.000
Self	15	64.80±14.25		
(Maternal) grandparent	107	60.63±12.64		
Father/ Mother	254	54.43±11.75		
Residence			1.015	.363
Township	112	57.35±12.86		
District County	158	57.05±11.94		
Municipal and above	106	55.15±12.94		
Monthly household income (Yuan)			0.959	.412
≤2000	33	53.85±10.60		
2~4000	117	56.83±12.11		
4~8000	130	57.65±12.17		
>8000	96	55.86±13.94		
Education level of primary caregiver			0.654	.581
Primary school and below	100	55.45±12.64		
Junior high school/ technical secondary school	136	57.24±11.80		
Senior High School/ Vocational College	58	55.74±12.13		
College degree or above	82	57.57±13.75		

Table 3. Correlation Analysis Between Self-management and Readiness for Transition from Child to Adult in Adolescent Epilepsy Patients (r)

Drug management	Doctor-patient communication	treatment participation	disease knowledge	health responsibility	resource utilization	transition readiness score
-0.034	0.169[a]	0.264[a]	0.179[a]	0.147[a]	0.308[a]	0.226[a]
0.105[b]	0.372[a]	0.405[a]	0.429[a]	0.269[a]	0.437[a]	0.452[a]
-0.054	0.185[a]	0.240[a]	0.205[a]	0.146[a]	0.279[a]	0.217[a]
0.142[a]	0.267[a]	0.225[a]	0.272[a]	0.130[b]	0.198[a]	0.284[a]
0.262[a]	0.396[a]	0.379[a]	0.396[a]	0.361[a]	0.313[a]	0.474[a]
0.138[a]	0.410[a]	0.441[a]	0.435[a]	0.312[a]	0.441[a]	0.487[a]

[a] $P < .01$
[b] $P < .05$

Table 4. Independent Variable Assignment in Multivariate Analysis of Influencing Factors of Readiness for Transition from Child to Adult in Juvenile Epilepsy Patients

Item		Assignment		
Age				
	12~15 years old	1		
	15.1~18 years old (reference group)	0		
Primary caregiver				
	Self	1	0	
	(Maternal) grandparent	0	1	
	Father/ Mother (reference group)	0	0	
Course of disease (year)				
	≤1 year	1	0	0
	1~3 years	0	1	0
	3~5 years	0	0	1
	>5 years (reference group)	0	0	0
Number of drug types				
	0 type (discontinued)	1	0	
	1 type	0	1	
	2 types and above (reference group)	0	0	
Total score of self-management (Scale questions)				

Table 5. Multivariate Analysis of Influencing Factors of Readiness for Transition from Childhood to Adult in Juvenile Epilepsy Patients

Variable	B	Standard Error	*β*	*t*	*P* value
Constant	22.568	3.541	-	6.373	.0000
Age					
12~15 age	-4.953	1.168	-0.183	-4.242	.0000
Course of Disease (year)					
≤1 year	-4.409	1.95	-0.101	-2.261	.024
1~3 year	-3.332	1.385	-0.11	-2.407	.017
3~5 year	-4.052	1.213	-0.141	-3.341	.001
Number of drug types					
0 type (discontinued)	11.492	1.62	0.31	7.096	.0000
1 type	-0.07	1.06	-0.003	-0.066	.947
Primary caregiver					
Self	5.839	2.572	0.092	2.27	.024
(Maternal) grandparent	2.397	1.16	0.087	2.067	.039
Total score of self-management	0.394	0.396	0.034	0.452	.0000

Note: R^2=0.464, adjusted R^2=0.448, F=28.621, $P < .001$

approach to determining the relationship between the identified factors and transition readiness. The results from this regression analysis contribute to a comprehensive understanding of the factors influencing the patients' readiness for the transition and inform the development of tailored transition programs for juvenile epilepsy patients.

The multivariate analysis of influencing factors on the readiness for the transition from childhood to adulthood in juvenile epilepsy patients is depicted in Table 5. This analysis builds upon the univariate analysis by considering multiple factors simultaneously to identify the most significant predictors of transition readiness. By employing multivariate regression, the table examines the independent effects of various variables and provides adjusted coefficients that account for potential confounding factors. The table presents a more nuanced understanding of the factors that significantly contribute to the patient's readiness for the transition, enabling the development of targeted interventions and support strategies.

The average transition readiness score for adolescent epilepsy patients was 56.60±12.51. Among the six dimensions, scores for medication management, disease understanding, doctor-patient interaction, health responsibility, medical involvement, and resource utilization were ranked from high to low. The study identified age, duration of epilepsy, type of medication, and primary caregiver as major factors influencing transition readiness in adolescent epilepsy patients ($P < .05$, $P < .001$). Furthermore, there was a positive correlation between overall disease self-management score and transition readiness ($r = 0.487$, $P < .01$), indicating that self-management ability has a positive predictive impact on transition readiness.

In summary, Adolescent epilepsy patients demonstrate a moderate level of preparedness for transitioning from childhood to adulthood. Older patients, have longer disease duration, and possess stronger self-management skills exhibit higher levels of preparedness. Targeted clinical interventions focusing on self-management skills are crucial in helping patients transition more smoothly into adulthood.

DISCUSSION

In this study, the average total score for transition readiness among adolescent epilepsy patients was (56.60±12.51) (Table 1), indicating a need for improvement in their readiness for the transition. Specifically, the dimensions with lower scores were "medical treatment participation" (7.73±2.89) and "resource utilization" (7.17±2.99) (Table 1). These findings align with previous studies by Cui C et al.[24] and Chen Wenjin et al.[25] The lower scores in these dimensions may be attributed to limited knowledge of epilepsy among some parents, inadequate communication, and lack of social and family support, resulting in a lack of awareness and active participation in medical treatment.[26] Furthermore, the management of the transition period from childhood to adulthood for patients with chronic diseases in China is still in the early exploration stage.[27] The existing management system is not yet well-established, and the scarcity of medical resources restricts access to disease information and related healthcare resources for most parents and patients. Given these circumstances, healthcare professionals should optimize the utilization of available resources to actively educate adolescent epilepsy patients and their primary caregivers about the importance and necessity of transition preparation. By establishing long-term and sustainable assistance relationships, healthcare providers can impart relevant knowledge and skills to enhance the patient's readiness for the transition.

In this study, we found that the transition readiness scores of adolescents with epilepsy aged 15.1 to 18 years were higher than the scores of those aged 12 to 15 years ($P < .001$) (Table 2), which was consistent with the results of Sucheta et al.[28] The reason may be that the older the patients with juvenile epilepsy, the more mature the mind, the stronger the willingness and ability to learn, the more able to understand the importance and necessity of medical transition preparation.[29] Meanwhile, as patients age, parents become more confident in their abilities and are willing to let patients participate in disease management. Therefore, in clinical practice, medical staff should consciously emphasize the importance and necessity of transition to adolescent epileptic patients and parents, encourage parents to actively participate in the preparation of the transition period of patients, assess children's living ability, personality, psychology, willingness to participate, gradually letting them participate in disease management and cultivating their ability to take care of

themselves. Of course, all these should be based on the patient's situation and personalized professional guidance and assistance. For patients of low age, after fully assessing the patients' transition ability and willingness, medical staff should cultivate patients' transition preparation skills from easy ones to difficult ones, such as simple skills such as cleaning the room, helping prepare meals, taking medicine independently, etc., and gradually develop patients' more difficult skills such as independent medical treatment and active communication with medical staff.

In this study, adolescent epilepsy patients with a course of disease greater than 5 years had better transition readiness ($P < .05$) (Table 3). Epilepsy is characterized by long-term, chronic, and recurrent seizures,[30] and if the standard and reasonable antiepileptic therapy is accepted, the seizure of 70% ~ 80% of epilepsy patients can be effectively controlled with the continuation of the treatment cycle.[31] Therefore, the longer the disease course, the better the disease control effect is likely to be, resulting in positive feedback to patients, so that they can increase their confidence in overcoming the disease. At the same time, because patients with a longer course of disease spend more time in contact with medical staff, it is more conducive for them to acquire more skills and knowledge related to the transition,[29] so that they are better prepared for the transition. For patients with a short course of disease, medical staff should shorten the follow-up period, follow up on time, actively understand the patient's condition and needs, help solve problems in time, and improve patients' treatment compliance and self-care ability. With the prolonged course of the disease, medical staff should fully assess the ability and willingness of patients, timely intervene in the concept of transition preparation, and encourage family members to participate in assisting patients to prepare for the transition.

This study showed that adolescent epileptic patients who had stopped taking medication were better prepared for the transition period ($P < .001$) (Table 4). At present, the main treatment for epilepsy is oral antiepileptic drugs, which patients need to take for a long time.[32] The whole process of drug treatment not only requires patients and their parents to spend a lot of energy to go to the hospital to adjust drugs but also has the economic burden brought by drug costs. Patients who have stopped the drug have less related burden, so parents have more energy, manpower, and financial resources to help adolescent patients with the transition of medical treatment period. Secondly, the study of Stewart et al.[33] showed that patients with better self-efficacy had a higher level of transition readiness, and patients who had stopped taking drugs might be more optimistic about the prognosis of the disease, and the corresponding stronger self-efficacy would be more conducive to the transition. Therefore, in clinical practice, medical staff should pay attention to drug management of adolescent patients during the transition period to reduce the impact of improper medication on the prognosis of the disease. Education should be strengthened during the hospital. After leaving the hospital, modern information technology can be fully used to establish contact with patients and their parents, give them online follow-up, guide them to buy medicine, and supervise their correct medication, to improve the drug management ability of patients, thus ultimately facilitating the rehabilitation of illness and the smooth transition from child to adult health care.

The study showed that the primary caregiver was the adolescent patient himself or the maternal/grandparent who was more prepared for the transition ($P < .05$) (Table 5). Studies have shown that the transition readiness of adolescent patients is related to the level of parental involvement. When the level of parental involvement is high, the sense of responsibility and autonomy of adolescents to participate in medical management is relatively less, thus affecting their ability to prepare for the transition. Otherwise, the transition readiness of patients will be improved.[34] In addition, the more parents felt uncertain about the transition process, the less prepared the patients were for transition.[35] In this study, when parents were the primary caregivers, the lower transition readiness of epileptic adolescents may be due to the high level of parental involvement in the study population, or the uncertainty about transitional medical services, so they do not know how to support and educate their children to participate in disease management, resulting in less participation of patients in self-disease management. For other teenagers whose parents cannot take care of their children personally due to lack of energy or other reasons, they are mainly taken care of by their (maternal) grandparents, so that these adolescent patients have earlier mental maturity, independence, and self-care awareness. Thus, the main caregivers are themselves, who basically enter society after dropping out of school and live independently, being relatively older, with stronger self-awareness, independence, and adaptability. Therefore, healthcare professionals should focus on improving parents' educational concepts and methods, reducing and even removing parents' feelings of uncertainty, encouraging them to lower their participation, gradually transferring transition preparation skills to their adolescent children, and enhancing these adolescent patients' transition preparation.

The self-management of chronic diseases involves physiological, psychological, and social aspects, and mainly emphasizes the active participation of patients in the management of disease symptoms and maintenance of treatment, to reduce the impact of diseases on daily life.[36] Self-management of epileptic patients broadly refers to the self-adaptive behaviors taken by patients to control or reduce epileptic seizures, including medication compliance, access to and feedback on disease information, seizure, safety, and personal lifestyle management.[37] In this study, the score of self-management was (93.92±14.30) (Table 1), which was medium level, and the total score of self-management was positively correlated with the readiness for transition ($r=0.487$, $P < .01$) (Table 5). Multi-factor review showed that self-management had a positive predictive effect on transition readiness ($B=0.394$, $P < .001$)(Table 5). Studies have pointed out that the primary step to ensure the smooth transition of these teenage patients is for medical staff to convey transitional information to them when they are quite young, provide corresponding self-care training, and improve

their self-management level.[38,39] To improve the self-management of patients with epilepsy, comprehensive intervention is needed from the aspects of medication, safety, epileptic seizure, information acquisition, and lifestyle. The disease and care knowledge can be conveyed to patients and parents through various means such as explanations, paper brochures, and videos. At the same time, to shorten the space distance of continuous care, medical staff can make use of information tools, such as WeChat, health management apps, Internet hospitals, etc., to establish contact with teenagers with epilepsy, master the disease information and self-management of patients, timely find out the problems in the self-management of patients, give corrective guidance, to improve the self-management ability of teenagers with epilepsy, thus ultimately smoothing the transition to adult medicine.

In conclusion, the study was found that the transition readiness of adolescent epileptic patients from childhood to adulthood was at a medium level. Factors such as age, disease duration, medication usage, primary caregivers, and self-management ability influenced their transition readiness. A smooth transition from pediatric to adult medical care is contingent upon medical policies, healthcare professionals, societal support, family involvement, and patient engagement. Healthcare providers must enhance the continuity of care for adolescent epilepsy patients, improve their disease management skills and quality of life, and facilitate a successful transition to adult medical care. However, it is important to note that the study's samples were limited to three medical centers, potentially affecting regional representation. Additionally, only certain influencing factors were explored, leaving room for further investigation of other factors in future studies, which can provide valuable insights for clinical practice and research about the transition of juvenile epilepsy patients to adult medical care.

In this study, adolescent epilepsy patients showed a need for improved transition readiness, influenced by factors such as age, disease duration, medication usage, primary caregivers, and self-management ability, highlighting the importance of healthcare provider support and patient engagement in facilitating a successful transition to adult medical care. However, the study's limited sample and exploration of select influencing factors suggest the need for further investigation into additional factors for valuable insights into clinical practice and research regarding the transition of juvenile epilepsy patients to adult medical care.

CONFLICTS OF INTEREST

The authors report no conflict of interest.

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Not applicable.

ETHICAL

Ethical approval for the study was obtained from the Children's Hospital of Chongqing Medical University's ethical committee. The approval registration number is ChiCTR2200061417, and the approval date is 06/23/2022.

AVAILABILITY OF DATA AND MATERIALS

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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