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Family factors contributing to emotional and behavioral problems in Korean adolescents with epilepsy

Su-Hyun Han [a], Sang-Ahm Lee [a,*], Soyong Eom [b], Heung-Dong Kim [b], Korean QoL in Epilepsy Study Group

[a] Department of Neurology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea
[b] Department of Pediatrics, Severance Hospital, Yonsei University College of Medicine, Seoul, Republic of Korea

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ABSTRACT

Purpose: We aimed to determine whether different aspects of family functioning are associated with emotional and behavioral problems in adolescents with epilepsy and, if not, to document any indirect associations mediated by other family factors.
Methods: This was a cross-sectional, multicenter study. A total of 297 adolescents with epilepsy and their parents participated. Adolescent psychopathology was measured using the Youth Self-Report. Family factors were classified into proximal (parent–child interaction), distal (parent characteristics), and contextual factors (family characteristics) in accordance to their level of proximity to the adolescent's everyday life. Regression analyses were used to analyze the unique and combined predictive power of family factors in relation to psychopathology.
Results: In total, 44 (14.8%) and 51 (17.2%) adolescents with epilepsy scored above the borderline cutoff (T-score ≥ 60) of internalizing and externalizing problems, respectively. Proximal and distal factors were independently associated with both internalizing and externalizing problems. High levels of parental depressive mood and parental overcontrol were the strongest factors contributing to internalizing and externalizing problems, respectively. Contextual factors were indirectly associated with both internalizing and externalizing problems through more proximal factors.
Conclusions: Both proximal and distal family factors affect psychopathology in Korean adolescents with epilepsy. Parental feelings of depression and parental overcontrol are the strongest factors contributing to internalizing and externalizing problems, respectively.

1. Introduction

The stigmatizing nature of epilepsy significantly impacts the psychological well-being of people with epilepsy and can affect their quality of life. Adolescence is a critical period of life, in which self-identity and peer relationships develop. Therefore, recurrent seizures in adolescence greatly influence the development of psychopathology in adolescents with epilepsy [1]. Between 23% and 40% of adolescents with epilepsy display emotional problems [2,3], and these adolescents exhibit a higher prevalence of behavioral problems than healthy or chronically ill control groups [4,5].

The family environment is recognized as one of the most influential factors affecting the development of emotional and behavioral problems in children with epilepsy [6,7]. Family factors, especially those related to the quality of the parent–child relationship, but not epilepsy-related factors, may be strong predictors of psychopathology in children with epilepsy [8]. Therefore, strengthening the parent–child relationship while treating children with epilepsy may prevent or reduce their emotional and behavioral problems [8]. Dynamics of the parent–child relationship changes as relationship among peers has more importance on children's thinking process. As children enter adolescence, the dynamics of the relationships with their parents change [9,10]. As they go through a period of social reorienting, the opinions of peers become more important than those of family members, and the relationship between parent and adolescent becomes more equal [9,10]. In addition, mental health disorders often have an onset in adolescence, and vulnerability to psychiatric problems is heightened during the period of adolescence [11]. Most studies of family factors have been performed in children, but few have specifically targeted adolescents. Therefore, little is known about the effects of different aspects of family functioning on emotional and behavioral problems in adolescents with epilepsy.

The principal aims of our present study were twofold: (1) to determine whether different aspects of family functioning are associated with emotional and behavioral problems in adolescents with epilepsy

Abbreviations: APGAR, Adaptation, Partnership, Growth, Affection, and Resolve; BDI, Beck Depression Inventory; CRPBI, Children's Report of Parental Behavior Inventory; MSI-R, Marital Satisfaction Inventory—Revised; PSOC, Parenting Sense of Competence; YSR, Youth Self-Report.

* Corresponding author at: Department of Neurology, Asan Medical Center, University of Ulsan College of Medicine, 88 Olympic-ro 43-gil, Songpa-gu, Seoul 138-736, Republic of Korea. Tel.: +82 2 3010 3445; fax: +82 2 474 4691.
E-mail address: salee@amc.seoul.kr (S.-A. Lee).

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and, (2) if not, to document their indirect associations—mediated by other family factors—in adolescents with epilepsy.

2. Methods

2.1. Subjects

This cross-sectional, multicenter study collected data from adolescents with epilepsy and their parents who were recruited nonrandomly between February 2013 and May 2013 from 21 secondary or tertiary hospitals in Korea. The study subjects were middle- or high-school students with any type of epilepsy. They were allowed to participate if they had an intact family with two parents and if they had been treated for at least 1 year and had taken stable doses of antiepileptic drugs for at least 1 month. Epilepsy was defined as a history of two or more unprovoked seizures or a single seizure with evidence of epileptiform activity recorded by electroencephalogram or structural lesions documented by brain imaging. Subjects were excluded if they had experienced a seizure in the 48 h before filing out the questionnaires, if they had a neurological deficit that affected daily living activities, if they were diagnosed with psychiatric illness such as autism, or if they were unable to read or understand the questionnaires. Adolescent psychopathology measured by the Youth Self-Report (YSR) was not defined as psychiatric illness.

A total of 297 adolescents with epilepsy and their parents participated in this study. They were asked to fill out questionnaires on the day they visited their pediatric doctors or neurologists at the outpatient clinic. Demographic and clinical data were collected by interviews and by reviewing each patient's medical files. The participant characteristics are listed in Table 1. The mean age of adolescents with epilepsy was 15.4 years (SD: 1.9; range: 11–18); 240 mothers (mean age: 43.5 years; SD: 3.9) and 57 fathers (mean age: 45.9 years; SD: 4.3) completed the questionnaires (80.8% and 19.2%, respectively). According to the gender of the parents who participated, there were no differences in the adolescent's age, gender, psychopathology measured by YSR, and any of the family factors included in this study. Written informed consent was obtained from all participants. The study was reviewed and approved by the Institutional Review Board of Asan Medical Center.

Table 1
Patient characteristics (n = 297).

Age, years, mean ± SD	15.4 ± 1.9
Female, n (%)	115 (38.7)
Economic status, n (%)	
High	12 (4.2)
Middle	228 (79.7)
Low	46 (16.1)
Age of seizure onset, years, mean ± SD	9.9 ± 3.9
Duration, years, mean ± SD	5.5 ± 3.6
Epilepsy syndrome, n (%)	
Idiopathic generalized	100 (34.5)
Idiopathic partial	112 (38.6)
Symptomatic partial	78 (26.9)
Predominant seizure type, n (%)	
Absence	16 (5.6)
Partial	154 (54.2)
Generalized	114 (40.1)
Seizure frequency, n (%)	
Remission (at least 1 year)	133 (46.0)
1–11/years	110 (38.1)
Monthly	46 (15.9)
Antiepileptic drug treatment, n (%)	
No medication	15 (5.2)
Monotherapy	177 (61.5)
Polytherapy	96 (33.3)
T-score of Youth Self-Report, mean ± SD	
Internalizing problem	48.9 ± 9.8
Anxious/depressed	53.5 ± 5.6
Withdrawn	53.4 ± 5.9
Somatic complaints	53.7 ± 6.5
Externalizing problem	50.2 ± 10.9
Rule-breaking behavior	53.9 ± 6.4
Aggressive behavior	54.7 ± 7.0

2.2. Measures

2.2.1. Youth Self-Report

Emotional and behavioral problems were measured using the YSR, which is a self-administered questionnaire, part of the Achenbach System of Empirically Based Assessments [12,13] developed to assess emotional and behavioral problems in children and adolescents between the ages of 11 and 18 years. The YSR includes 118 items rated on a 3-point scale ranging from 0 (not true) to 2 (very true). The instrument provides the symptom scales of anxious/depressed, withdrawn, somatic complaints, rule-breaking behavior, aggressive behavior, social problems, thought problems, and attention problems, with higher scores indicating more severe problems. The broadband syndrome scales for internalizing problems (anxious/depressed, withdrawn, and somatic complaints) and externalizing problems (rule-breaking behavior and aggressive behavior) were used as indicators of existing psychopathology. The YSR also yields a measure of social competence, which was not used in this study. The Korean version of the YSR (K-YSR) has been translated and validated [14]. Scores from K-YSR are computed as T-scores. T-scores ≥60 indicate subclinical significance, and T-scores ≥63 indicate clinical significance. We used raw scores for all statistical comparisons to take into account the full range of variation in the YSR [13].

2.2.2. Family factors

From the perspectives of social interaction and ecology, family factors can be ordered according to the level of proximity to everyday life into proximal family factors (parent–child interaction), distal family factors (dispositional characteristics of parents), and contextual family factors (family characteristics) [15,16]. Proximal family factors comprise the parent–child interaction and were measured using the Children's Report of Parental Behavior Inventory (CRPBI) [17]. This tool consists of 26 items, each rated on a 5-point scale, that measure two domains of parent–child interaction patterns (one reflecting love versus rejection and the other reflecting autonomy versus control). The higher the score on each domain, the higher the level of rejection or control the child feels toward their parents; the lower the score, the higher the level of love or autonomy. The Korean version of the CRPBI has been translated and validated [18].

Distal factors consisted of parental feelings of depression and parental competence. Parental feelings of depression were assessed using the Beck Depression Inventory (BDI), which consists of 21 items rated on a 4-point scale. Higher scores represent higher levels of depressive symptoms. The Korean version of the BDI has been validated [19]. Scores ≥10 on the Korean version of the BDI indicate clinically significant depression. Parental competence was assessed using the Parenting Sense of Competence (PSOC) scale [20], which assesses the degree to which the parent feels confident about dealing with the adolescent. It consists of 16 items rated on a 5-point scale. A higher score reflects more confidence. The Korean version of the PSOC has also been validated [21].

Contextual factors included family functioning, conflict over child rearing, and general marital satisfaction. Family function constructs were assessed using the family APGAR (Adaptation, Partnership, Growth, Affection, and Resolve) questionnaire [22], which uses five questions rated by parents on a 3-point scale to assess the components of family functioning. A higher score reflects a more functional family, and scores <7 represent abnormal family functioning. The Korean version of the family APGAR has been validated [23]. Conflict over childrearing and general marital satisfaction were assessed using two subscales (the 10-item Conflict Over Childrearing and 22-item Global Distress subscales, respectively) of the Marital Satisfaction Inventory—Revised (MSI-R)