

Social skills among epileptic adolescents

Ahmed Osama^a, Mohamed Negm^a, Amal Zakaria^a, Ahmed Salama^b

^aDepartment of Neuropsychiatry, Suez Canal University, Ismailia, ^bMansoura International Hospital, Mansoura, Egypt

Correspondence to Mohamed Negm, MD
Department of Neuropsychiatry, Suez Canal University, Ismailia, Egypt
Tel: +20 100 564 1148;
e-mail: mohnegm2@yahoo.com

Received 16 April 2015

Accepted 02 June 2015

The Egyptian Journal of Neurology,
Psychiatry and Neurosurgery 2016, 53(3):188–192

Background

Epilepsy has been increasingly suspected as a risk factor for psychological, academic, and poor social skills in epileptic adolescents.

Objective

The aim of the study was to assess the social skills of epileptic adolescents and compare them with those in nonepileptic healthy adolescents.

Participants and methods

The social skills of 86 epileptic adolescents (12–18 years) were compared with those of 86 age-matched and sex-matched healthy adolescents. Social skills were assessed using the Arabic-translated form of the Social Skills Rating System questionnaire – both student form (39 questions) and parent form (52 questions).

Results

The mean scores of the 'student form' subscales (cooperation, assertion, empathy, and self-control) and the mean scores of the 'parent form' subscales (cooperation, assertion, responsibility, self-control, externalizing behavior, and internalizing behavior) were highly significantly lower in epileptic compared with nonepileptic adolescents ($P < 0.01$). The mean scores of all student form subscales were highly significantly lower in epileptic adolescents with partial seizures with secondary generalization, with generalized tonic clonic seizures, and in those on polytherapy medications ($P < 0.01$). The mean scores of cooperation, assertion, and empathy of the student form subscales were highly significantly lower in epileptic adolescents with seizure frequency of greater than 4 per year. There was no significant difference in the mean scores of the student form subscales with respect to sex or residence of the epileptic adolescents.

Conclusion

Epileptic adolescents have poor social skills that require early assessment and intervention.

Keywords:

epilepsy, epileptic adolescents, social skills

Egypt J Neurol Psychiat Neurosurg 53:188–192

© 2016 The Egyptian Journal of Neurology, Psychiatry and Neurosurgery
1110-1083

Introduction

Epilepsy is one of the most common serious disorders of the brain, affecting about 50 million people worldwide [1]. It has been increasingly recognized as a risk factor for poor social skills in adolescents [2].

Social skills are the individual abilities or characteristics needed to behave competently in social settings [3–5].

Previously, it had been reported that adolescents with epilepsy have poorer social skills and are less assertive than their siblings [6]. An increased prevalence of poor social competence has been reported in adolescents with epilepsy from preschool to adolescence [7,8]. Adolescents with epilepsy experience greater social isolation [9,10] and have more difficulty interacting with peers compared with healthy children [11,12].

Poor social skills may contribute to adverse long-term psychosocial outcomes in adults with childhood-onset epilepsy [13–16].

Aim of the work

The aim of the study was to assess the social skills of epileptic adolescents and compare them with those of nonepileptic healthy adolescents.

Participants and methods

A case-control study was conducted at the outpatient clinic of the Department of Neuropsychiatry, Suez Canal University Hospital. Study populations were divided into two groups: group 1 (epileptic adolescents) included 86 epileptic adolescents of school age (12–18 years) attending the neuropsychiatry outpatient clinic. Group 2 (nonepileptic adolescents) included 86

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

healthy school-aged adolescents (12–18 years of age) without known chronic diseases.

The following adolescents were excluded from the study: adolescents with behavioral or psychiatric disturbances, those with chronic medical disease (asthma, diabetes, cardiac disease, and renal disease), those with focal cerebral lesion or cerebral palsy, adolescents with IQ below 70, and nonstudent adolescents.

The diagnosis of epilepsy was confirmed using the standard criteria of two unprovoked seizures [17] or being on antiepileptic drugs (AEDs). The age of onset of seizures ranged from 12 to 18 years, and the duration of seizures ranged from 1 to 10 years.

According to the type of seizures, epileptic adolescents were classified into four groups [18,19]: partial, partial with secondary generalization, absent, and generalized tonic clonic. When there were multiple seizure types, the most severe type was used as the basis of seizure classification.

According to seizure frequency in the last year, epileptic adolescents were classified into four grades [18,19]: (a) no seizure in the last year but had at least one seizure the year before; (b) less than four seizures in the last year; (c) four to 26 seizures in the last year; and (d) greater than 26 seizures in the last year.

On the basis of the use of AEDs, epileptic adolescents were classified into two groups [17]: adolescents receiving one AED (monotherapy) and adolescents receiving more than one AED (polytherapy).

The epileptic and control adolescents were subjected to history taking, clinical examination, electroencephalography, and Social Skills Rating System (SSRS) Questionnaire [20], both student form and parent form. The student form consists of 39 questions that measure how often the student exhibits certain social skills. The parent form consists of 52 questions that measure how often the adolescent exhibits certain social skills [20].

Both forms measure cooperation (10 questions in student form and 10 questions in parent form), responsibility (10 questions in parent form), assertion (10 questions in student form and 10 questions in parent form), self-control (10 questions in student form and 10 questions in parent form), empathy (10 questions in student form), and externalizing and internalizing behavior that determines total social skills. Individual subscale scores and a total social skills score were calculated. Individual items were rated from 0 to 2, where 0 indicated poor social skills and 2 indicated higher social skills. The available responses

were 0 (never), 1 (sometimes), and 2 (very often). As such domain and facet scores are scaled in a positive direction, with lower scores denoting lower social skills.

The questionnaire was translated into Arabic and a pilot study was conducted to assess the understandability, acceptability, and clarity of its items to the Egyptian population.

Written informed consent was taken from parents of participants and orally from participants. All data are considered confidential and will not be used outside this study without the patient's approval.

This study was approved by the Ethical Committee of the Faculty of Medicine in Suez Canal University on 30 December 2012.

Statistical analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS), version 16.0. Tests (IBM, USA, Chicago, Illinois) for statistical significance were performed and *P* values less than or equal to 0.05 were considered statistically significant (at 95% level of confidence). Descriptive statistics were presented as mean \pm SD for quantitative variables and as percentage (%) for qualitative variables. For comparison of means between groups the *t*-test was used. For relations between qualitative variables, the χ^2 -test was used.

Results

This study included 86 epileptic adolescents [47 boys (55%) and 39 girls (45%)]. Their mean age was 15.13 ± 1.39 years. Thirty-three (38%) were from an urban area and 53 (62%) were from a rural area. The control group included 86 adolescents [36 boys (42%) and 50 girls (58%)]. Their mean age was 15.42 ± 1.46 years. Thirty-one (36%) were from an urban area and 55 (64%) were from a rural area. There was no significant difference between the epileptic and control group regarding sex, age, or residence. Of the 86 epileptic adolescents, 14% had absent seizures, 9.3% had partial seizures, 32.6% had partial seizures with secondary generalization, and 44.2% had generalized tonic clonic seizures. Forty-nine percent were on monotherapy and 51% were on polytherapy.

The mean values of the four subscales of the SSRS 'student form' were highly significantly lower in epileptic adolescents compared with those in nonepileptic adolescents (Table 1). The mean values of the six subscales of the SSRS 'parent form' were highly

Table 1 The mean and SD of Social Skills Rating System – student form: subscales for epileptic and nonepileptic adolescents

Subscale	Epileptic adolescents (N=86)	Nonepileptic adolescents (N=86)
Cooperation	5.14±3.56*	13.13±2.58
Assertion	4.51±4.18*	9.25±3.82
Empathy	7.65±4.56*	15.75±2.58
Self-control	3.05±2.22*	13.07±4.03

* $P<0.01$, statistically highly significant (unpaired t -test).

Table 2 The mean and SD of Social Skills Rating System – parent form – subscales for epileptic and nonepileptic adolescents

Subscale	Epileptic adolescents (N=86)	Nonepileptic adolescents (N=86)
Cooperation	5.37±4.82*	12.03±3.97
Assertion	5.02±5.27*	11.72±4.21
Responsibility	7.55±4.51*	14.86±3.02
Self-control	4.5±3.86*	13.22±3.93
Externalizing	8.19±1.3*	4.51±2.65
Internalizing	7.41±3.12*	3.93±2.85

* $P<0.01$, statistically highly significant (unpaired t -test).

significantly lower in epileptic adolescents compared with those in nonepileptic adolescents (Table 2).

No significant difference could be detected in the mean scores of the four student form subscales (cooperation, assertion, empathy, and self-control) between male and female epileptic adolescents. No significant difference was detected in the mean scores of the four student form subscales between urban and rural areas.

The mean scores of cooperation, assertion, empathy, and self-control were highly significantly lower in epileptic adolescents with generalized tonic clonic seizures and in those with partial seizures with secondary generalization compared with epileptic adolescents with absent or partial seizures (Table 3).

Epileptic adolescents on polytherapy had highly significantly lower mean scores on the four subscales compared with epileptic adolescents on monotherapy (Table 4).

Epileptic adolescents with seizure frequency greater than 4 had highly significantly lower mean scores of cooperation, assertion, and empathy (Table 5).

Discussion

Epileptic adolescents had poorer social skills compared with nonepileptic adolescents. They had lower scores on all SSRS student and parent form subscales. They were less cooperative and had difficulty in cooperation, including helping others, sharing materials, and

Table 3 The mean and SD of Social Skills Rating System – student form – subscales for epileptic adolescents according to their seizure type

Subscale	Absence (N=12)	Partial (N=8)	PSG (N=28)	GTC (n=38)
Cooperation	10.83±1.8	8.62±2.82	3.96±1.91 [‡]	3.47±2.64 [‡]
Assertion	11.5±1.24	8.25±5.34	3.14±2.33 [‡]	2.53±2.44 [‡]
Empathy	14.75±0.86	12.37±3.66	6.39±2.29 [‡]	5.34±3.64 [‡]
Self-control	5.75±0.96	4.25±1.03	2.61±2.11 [‡]	2.26±2.02 [‡]

GTC, generalized tonic clonic seizures; PSG, partial seizures with secondary generalization. [‡] $P<0.01$, statistically highly significant.

Table 4 The mean and SD of Social Skills Rating System – student form – subscales for epileptic adolescents according to type of therapy

Subscale	Monotherapy	Polytherapy
Cooperation	6.78±4.09	3.57±1.98*
Assertion	6.31±4.92	2.79±2.29*
Empathy	9.64±4.95	5.75±4.5*
Self-control	3.93±2.21	2.2±1.89*

The values are calculated using the unpaired t -test. * $P<0.01$, statistically highly significant

Table 5 The mean and SD of Social Skills Rating System – student form – subscales for epileptic adolescents according to seizure frequency

Subscale	Grade 1	Grade 2	Grade 3	Grade 4
Cooperation	7.25±4.37	6.86±3.74	3.84±2.73*	4±2.76*
Assertion	6.92±5.14	7.23±4.74	2.72±2.64*	2.89±2.58*
Empathy	10.33±5.28	10.27±4.6	5.8±3.56*	6.04±3.49*
Self-control	3.75±2.14	3.68±2.29	2.44±2.02	2.78±2.26

Statistically highly significant (unpaired t -test). Grade 1: no seizure in the last year, grade 2: <4 seizures in the last year, grade 3: 4-26 seizures in the last year, grade 4: >26 seizures in the last year. * $P<0.01$.

complying with rules and directions. They had poor assertion and were less able to ask for information. They were less responsible, less likely to communicate with the elderly, and had poor regard for their property and work. They had poor self-control in behaviors that emerge in conflict situations, such as taking turns and compromising. They had more externalizing behaviors or symptoms of verbal or physical aggression toward others, poor control of temper and proneness to arguing. They had more internalizing problem behaviors, which include anxiety.

In this study the scores of all subscales were highly significantly lower in epileptics compared with those in a study conducted in the USA [21]. This difference could be due to the larger sample size in the current study. Controlling for IQ, socioeconomic status, and seizure variables, Caplan *et al.*[22] stated that subtle cognitive deficits along with externalizing behaviors were associated with decreased social involvement and low overall social competence. Austin *et al.*[23] reported an association of social competence deficits with both internalizing and externalizing

behaviors in children with chronic epilepsy. Hermann *et al.*[24] demonstrated an association of poor social competence with neuropsychologic deficits in children with epilepsy. Hamiwka *et al.*[25] also stated that children with epilepsy were significantly less likely to be identified as a best friend by their classmates.

There was no significant difference in the SSRS subscale in relation to sex and residence, which may reflect that epilepsy-specific factors and comorbidities related to epilepsy are associated with peer difficulties in adolescents with epilepsy. This can be supported by the fact that patients with partial seizures with secondary generalization, those with generalized seizures, patients on polytherapy, and patients who experience more than four seizures per year are significantly less cooperative, less assertive, and less empathic. This comes in agreement with the findings of Caplan *et al.*[26] who stated that children with epilepsy, particularly those with cryptogenic epilepsy with complex partial seizures, are not competent social communicators. Some studies demonstrate an association with seizure variables [27,28], whereas others do not [22]. Variability in the findings of these studies might reflect sample differences in terms of size, educational difficulties, and demographic features as well as the inter-relationship between seizure variables.

Curtin and Siegel[29] mentioned that, similar to certain factors in children with chronic illness (social restrictions, illness visibility, being unhappy), epilepsy might interfere with children's social interactions and time for socializing with peers. In addition, the degree to which a child's epilepsy is visible to peers may impact a child's overall social functioning [30].

We can also explain poor skills in our patients by the fact that epileptic patients feel stigmatized by the society and their peers, especially patients with uncontrolled epilepsy. Individuals are stigmatized because they have a feature that is considered undesirable[31] and may subsequently result in their rejection by others [32]. As previously described for chronic illness, the more visible an illness, the more a child is likely to be perceived as dissimilar and the less accepted by his or her peers [29,30].

These findings suggest that peers' attitudes and beliefs may create a social atmosphere that contributes to feelings of stigma in the lives of children and adolescents with epilepsy, resulting in decreased social competence and acceptance by peers.

This study does have limitations; first, our participation rates were moderate, resulting in possible selection bias. Second, our groups differed with respect to parental

education and socioeconomic status, which may have also influenced our results. Lastly, our study has relied only on parental report. Reports from multiple sources would provide more comprehensive information regarding a child's social skills.

Conclusion

Epileptic adolescents have poor social skills when compared with healthy adolescents, which need early assessment and intervention as early identification and intervention before manifestation of chronic symptoms may promote better long-term social outcomes in adolescents with epilepsy.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

- Katzenstein JM, Fastenau PS, Dunn DW, Austin JK. Teachers' ratings of the academic performance of children with epilepsy. *Epilepsy Behav* 2007; **10**:426–431.
- Mitchell WG. Social outcome of childhood epilepsy: associations and mechanisms. *Semin Pediatr Neurol* 1994; **1**:136–143.
- Cavell TA. Social adjustment, social performance, and social skills: a tri-component model of social competence. *J Clin Child Psychol* 1990; **19**:111–122.
- Parker JG, Rubin KH, Erath SA, Wojslawowicz JC, Buskirk AA. Peer relationships, child development, and adjustment: a developmental psychology perspective. In: Cicchetti D, Cohen DJ, editors. *Developmental psychopathology, risk, disorder, and adaptation*. 2nd ed. New York: John Wiley and Sons; 2006. 419–493.
- Nassau JH, Drotar D. Social competence among children with central nervous system-related chronic health conditions: a review. *J Pediatr Psychol* 1997; **22**:771–793.
- Tse E, Hamiwka L, Sherman EM, Wirrell E. Social skills problems in children with epilepsy: prevalence, nature and predictors. *Epilepsy Behav* 2007; **11**:499–505.
- Jakovljević V, Martinović Z. Social competence of children and adolescents with epilepsy. *Seizure* 2006; **15**:528–532.
- Rantanen K, Timonen S, Hagström K, Hämäläinen P, Eriksson K, Nieminen P. Social competence of preschool children with epilepsy. *Epilepsy Behav* 2009; **14**:338–343.
- Long CG, Moore JR. Parental expectations for their epileptic children. *J Child Psychol Psychiatry* 1979; **20**:299–312.
- Stores G. School-children with epilepsy at risk of learning and behavior problems. *Dev Med Child Neurol* 1978; **20**:502–508.
- Davies S, Heyman I, Goodman R. A population survey of mental health problems in children with epilepsy. *Dev Med Child Neurol* 2003; **45**:292–295.
- Ferrari M, Matthews WS, Barabas G. The family and the child with epilepsy. *Fam Process* 1983; **22**:53–59.
- Caplan R, Guthrie D, Komo S, Siddarth P, Chayasirisobhon S, Kornblum H, *et al.* Social communication in children with epilepsy. *J Child Psychol Psychiatry Allied Disciplines* 2002; **43**:245–253.
- Caplan R, Sagun J, Siddarth P, Gurbani S, Koh S, Gowrinathan R, Sankar R. Social competence in pediatric epilepsy: insights into underlying mechanisms. *Epilepsy Behav* 2005; **6**:218–228.
- Hermann BP, Black RB, Chhabria S. Behavioral problems and social

- competence in children with epilepsy. *Epilepsia* 1981; 22:703–710.
16. Hermann BP, Whitman S, Hughes JR, Melyn MM, Dell J. Multietiological determinants of psychopathology and social competence in children with epilepsy. *Epilepsy Res* 1988; 2:51–60.
 17. Fisher RS, Boas WE, Blume W, Elger C, Genton P, Lee P *et al*. Epileptic seizures and epilepsy: definitions proposed by the International League Against Epilepsy (ILAE) and the International Bureau for Epilepsy (IBE). *Epilepsia* 2005; 46:470–472.
 18. ILAE. Proposal for revised clinical and electroencephalographic classification of epileptic seizures. From the Commission on Classification and Terminology of the International League Against Epilepsy. *Epilepsia* 1981; 22:489–501.
 19. ILAE. Proposal for revised classification of epilepsies and epileptic syndromes. Commission on Classification and Terminology of the International League Against Epilepsy. *Epilepsia* 1989; 30:389–399.
 20. Diperna JC, Volpe RJ. Self-report on the Social Skills Rating System: analysis of reliability and validity for an elementary sample. *Psychol Sch* 2005; 42:345–354.
 21. Hamiwka LD, Hamiwka LA, Sherman EM, Wirrell E. Social skills in children with epilepsy: how do they compare to healthy and chronic disease controls? *Epilepsy Behav* 2011; 21:238–241.
 22. Caplan R, Guthrie D, Komo S, Siddarth P, Chayasirisobhon S, Kornblum H, *et al*. Social communication in pediatric epilepsy. *J Child Psychol Psychiatry* 2002; 43:245–253.
 23. Austin JK, Dunn DW, Caffrey HM, Perkins SM, Harezlak J, Rose DF. Recurrent seizures and behavior problems in children with first recognized seizures: a prospective study. *Epilepsia* 2002; 43: 1564–1573.
 24. Hermann BP, Whitman S, Hughes JR, Melyn MM, Dell J. Multietiological determinants of psychopathology and social competence in children with epilepsy. *Epilepsy Res* 1988; 2:51–60.
 25. Hamiwka L, Jones JE, Salpekar J, Caplan R. Child psychiatry. *Epilepsy Behav* 2011; 22:38–46.
 26. Caplan R, Siddarth P, Bailey CE, Lanphier EK, Gurbani S, Donald Shields W, Sankar R Thought disorder: a developmental disability in pediatric epilepsy. *Epilepsy Behav* 2006; 8:726–735.
 27. Williams J, Sharp G, Bates S, Griebel M, Lange B, Spence GT, *et al*. Academic achievement and the behavioral ratings in children with absence and complex partial epilepsy. *Educ Treat Child* 1996; 19:143–152.
 28. McCusker CG, Kennedy PJ, Anderson J, Hicks EM, Hanrahan D. Adjustment in children with intractable epilepsy: importance of seizure duration and family factors. *Dev Med Child Neurol* 2002; 44:681–687.
 29. Curtin LS, Siegel AW. Social functioning in adolescents with epilepsy. *Child Health Care* 2003; 32:103–114.
 30. Potter PC, Roberts MC. Children's perceptions of chronic illness: the roles of disease symptoms, cognitive development, and information. *J Pediatr Psychol* 1984; 9:13–27.
 31. Jacoby A, Snape D, Baker GA. Epilepsy and social identity: the stigma of a chronic neurological disorder. *Lancet Neurol* 2005; 4:171–178.
 32. MacLeod JS, Austin JK. Stigma in the lives of adolescents with epilepsy: a review of the literature. *Epilepsy Behav* 2003; 4:112–117

Copyright of Egyptian Journal of Neurology, Psychiatry & Neurosurgery is the property of Egyptian Society of Neurology, Psychiatry & Neurosurgery and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.