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Social competence of children and adolescents with epilepsy

Valentina Jakovljević [a], **Žarko Martinović** [b,*]

[a] *Unit of Child Neurology, The Health Centre in Ćuprija, Ćuprija, Serbia and Montenegro*
[b] *Institute of Mental Health, Department of Epilepsy and Clinical Neurophysiology, Palmotićeva 37, 11000 Belgrade, Serbia and Montenegro*

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Summary

Background: This study compared children and adolescents with epilepsy with their healthy peers on measures of social competence.
Methods: Children and adolescents with epilepsy (70 subjects aged 11—18 years; 47.1% girls) and their healthy peers in control group (95 subjects aged 11—18 years; 50.9% girls) were compared on measures of social competence from the Child Competence Checklist (part of Child Behavior Check List). The questionnaires were completed by the parents. All participants were of normal intelligence.
Results: The difference of means of total *T* scores for subscales of sociabilitiy and activities in the epilepsy group and in the control group were statistically significant ($p < 0.05$). The results showed that 5.7% of children and adolescents with epilepsy were in the clinical range compared to 2.1% of subjects in control group. The girls with epilepsy demonstrated greater problems with social competence (45.8 ± 8.27) than boys with epilepsy (48.1 ± 8.27) and this difference was statistically significant ($p < 0.05$). Multiple analysis of variance of *T* scores for social competence subscales related to neurobiological variables in the group of participants with epilepsy demonstrated a statistically significant association of reduced sociability with multiple generalized seizure types ($F = 4{,}405$; d.f. = 2; $p < 0.05$).
Conclusions: The study clearly shows that epilepsy is a limiting factor for social competence of children and adolescents.

Introduction

Children and adolescents with epilepsy might experience difficulties at school, social relations, and activities, including sports and part-time jobs,

* Corresponding author. Tel.: +381 11 3307 588; fax: +381 11 3231 333.
E-mail address: yscn@sezampro.yu (Ž. Martinović).

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as well as an overall impairment in social competence more frequently than their healthy peers or siblings[1,2] and children with chronic non-neurological illness.[3,4] In typical child development, social competence is influenced by demographics, as well as cultural, cognitive and behavioral factors.[5] Additionally, seizure-related variables and underlying brain dysfunction have been associated with scores indicative of decreased social competence,[6] although this finding was not confirmed in all studies.[2,5] Therefore, potential risk factors for reduced social competence in young people with epilepsy may be multietiological.[1,6] The studies differed greatly in their composition and choice of study samples, although most[3,5,7,8] used the Child Behavior Check List (CBCL),[9] a standardized quantitative measure of social competence in children and adolescents. The CBCL has yet to be employed in a study of children and adolescents in Serbia.

The aim of this study is two-fold:

1. To measure the social competence of children and adolescents with epilepsy and compare this with their healthy peers, using the CBCL.
2. To analyze the effects of seizure- and epilepsy-related (neurobiological) variables on social competence.

Methods

Participants

Initially, it was planned to include 200 participants between 11 and 18 years old, 100 patients with epilepsy and 100 controls. All patients, in the defined age range, that attended the centers between January 1st, 2003 and January 31st, 2004 and fulfilled all inclusion and exclusion criteria (see below) were included in the epilepsy group. The inclusion criteria consisted of a definitive diagnosis of epilepsy classified according to the International classification of epileptic seizures,[10] epilepsy and epileptic syndromes[11] and an intelligence quotient (IQ) above 90. Intellectual ability of patients with epilepsy was tested at the age of 6.5—7 years, before their school enrollment, and again before their participation in the study. The Wechsler Intelligence Scale for Children, revised and standardized for use in Serbian language (WISC-R), was used. Exclusion criteria consisted of epilepsy and associated mental retardation, epileptic encephalopathy and other neurological or psychiatric disorders.

Controls for epilepsy group were randomly selected using a computer-generated list of numbers assigned to their school class register. Any potential control participants with an IQ below 90 were excluded before this randomized selection took place.

Table 1 Demographic features of epilepsy group and controls

	Seizure group	Controls	Total
N	70	95	165
Sex			
Male (%)	37 (52.9)	44 (46.3)	81
Female (%)	33 (47.1)	51 (53.7)	84
Age (years)			
Mean (S.D.)	14.27 (2.55)	13.63	13.90

The eventual study sample consisted of 70 children and adolescents with epilepsy (epilepsy group) aged 11—18 years and 95 of their healthy peers of the same age (control group without epilepsy). The epilepsy group had a mean duration of epilepsy 4.93 years with monotherapy possible in 35 patients; carbamazepine in 19, valproate in 15 and phenobarbitone in 1 patient. There were 81 boys and 84 girls in the sample.

Demographic features of the sample are presented in Table 1.

Procedures

Both participants and their parents gave informed consent after the purpose of the study was explained. Social competence was assessed for both groups by means of an interview with the child's mother using the CBCL. Two major parts of the CBCL are a social competence scale and a behavioral problem scale. There are three social competence subscales: 1, activities (sport, hobbies, part-time jobs); 2, sociability (socializing with friends out-of-school, club membership, interpersonal skills); 3, school achievement (performance, ability, problems).

Both the effect of epilepsy and neurobiological factors, including seizure type, etiology, the duration of illness, age at epilepsy onset, electroencephalographic (EEG) findings, seizure control and the effects of antiepileptic drugs, as well as familial influences on social competence of the children and adolescents with epilepsy, were evaluated in the study.

Statistical analyses

Comparisons of social competence in the epilepsy group and controls were made using Student's *t*-test, and Chi-square tests as appropriate. Percentiles and *T* scores were assigned to the total CBCL competence scores as described elsewhere.[12] Multiple analysis of variance (MANOVA) was computed to determine statistically significant relation between social competence subscales and neurobiological