

⁽¹⁾ University of Miskolc, Faculty of Health Care, Miskolc, Hungary

⁽²⁾ University of Miskolc, Faculty of Arts, Miskolc, Hungary

⁽³⁾ Borsod-Abaúj-Zemplén County General and University Hospital, Miskolc, Hungary

⁽⁴⁾ Department of Paediatrics and Adolescent Medicine, Faculty of Medicine, Pavol Jozef Šafárik University, Kosice, Slovakia

FUNCTIONING OF FAMILIES BRINGING UP CHILDREN WITH AND WITHOUT TYPE 1 DIABETES

Lukács Andrea PhD⁽¹⁾, Zagraj Veronika Bettina⁽¹⁾, Joó Viktória⁽²⁾, Bartkóné Kovács Anett⁽³⁾, Soós Andrea MD⁽³⁾, László Barkai MD, PhD, DSc^(1,4)

Background and aims:

Bringing up a child with type 1 diabetes (T1D), the strict insulin and diet management, the frequent blood glucose monitoring and the constant worry about the blood glucose fluctuations are a challenge for the whole family. Family members often need to adapt their lifestyle to care for a child that diagnosed with type 1 diabetes. Our study aimed to determine whether there is a difference in the functioning of families bringing up children with and without T1D, and we also aimed to determine its explanatory variables.

Materials and methods:

Children with T1D were chosen from one of the biggest Pediatric Diabetes Clinic, the control peers were recruited from, primary and secondary schools in two settlements. Family functioning was evaluated using the 8-item Family Functioning subscale of the PedsQL Family Impact Module. In addition, children's general quality of life, cognitive (executive) functioning and physical activity, as well as the mothers' well-being, depression symptoms, resilience level and life satisfaction were assessed. Demographics (sex and age of children, socioeconomic background, family status and age of mothers), and clinical parameters of children with T1D (glycemic control expressed by HbA_{1c}, duration of diabetes, the method of the intensive insulin therapy, and the number of hypoglycemic events) were also examined. Data were processed using SPSS 26.0 statistical software at $p \leq 0.05$ significance level.

Results:

A total of 377 families was assessed, of which 27.1% raised a child with T1D. The mean age of the children was 14.85, SD=2.66 years (8-19), 44.8% were boys. There were no significant differences in age and gender distribution between the investigated groups. The main finding of our study was that no difference was observed in family functioning. This was further validated looking for differences between age groups (both children and adolescents). Children with T1D had reduced executive functioning; mothers raising a child with T1D had impaired well-being and life satisfaction. No other differences were observed. In the total samples, the family functioning was explained by the mothers' well-being ($t=4.81$, $p<0.001$), depression symptoms ($t=-2.13$; $p=0.034$), life satisfaction ($t=2.30$, $p=0.022$) and the children's executive functioning ($t=7.42$; $p<0.001$) ($R=0.62$; $R^2=0.38$). For families bringing up children

with diabetes were examined, we added clinical parameters. Family functioning was explained by the children's executive functioning ($t=4.98$; $p<0.001$) and the mothers' depression symptoms (-2.46 ; $p=0.016$) ($R=0.59$, $R^2=0.35$).

Conclusion:

The results of the study suggest that the diabetes management is well integrated into the daily activities of the families and accepted by the family members. Although the diabetes management is burdensome, there is no difference in functioning between families who bring up healthy children and those with T1D. The families function better if the children's cognitive functioning and the mothers' psychological well-being are improved. It seems that the clinical parameters have no effect. To assess the effect of long-term glycemic control on the cognitive functioning, further investigations are required.

Keywords: children, cognitive functioning, family functioning, type 1 diabetes, well-being