Psychological Impact of Type 1 Diabetes Diagnosis in Children Enrolled in the Prospective TEDDY Study Compared to Those in the Community

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Background

- Participation in a prospective follow-up study, such as the Environmental Determinants of Diabetes in the Young (TEDDY) Study, is associated with a reduction in symptoms and ketoacidosis at diabetes onset.
- It is not known whether prior knowledge of increased diabetes risks and close monitoring also leads to better psychological adjustment.

Study Hypotheses

- Compared to community children, parents of children diagnosed with type 1 diabetes in the TEDDY study will evidence better psychological adjustment. Specifically, TEDDY parents will report:
  - higher levels of diabetes-specific quality of life,
  - lower levels of state anxiety (diabetes-specific)
  - lower pediatric parenting stress (frequency and difficulty)

Methods

- TEDDY children were enrolled at 3-4.5 months of age and followed every 3 months for diabetes autoantibodies and for the development of diabetes. Parents were informed of their child's diabetes risk.
- For 54 TEDDY children diagnosed with diabetes, 54 control subjects were matched by age of diagnosis (within one year).
- Both TEDDY and control children were followed 3, 6, 12, months after diagnosis of diabetes.
- Parents completed the Pediatric Quality of Life Inventory - Diabetes Module (PedsQL), a shortened State Trait Anxiety Inventory (STAI), and the Pediatric Inventory for Parents (PIP), which measures stress related to parenting a child with a medical condition.

Statistical Analysis

- For the comparison of baseline characteristics between control and TEDDY children, paired t-tests were performed for means and McNemar's tests for proportions
- For the comparison of psychological adjustment variables (PedsQL, STAI, PIP) paired t-tests were performed.

Table 1. Baseline characteristics of the sample

	Community Controls	TEDDY Children	p
Age at diagnosis (yrs)			
Median (range)	6.7 (3.3-10.5)	6.4 (2.8-10.0)	
Mean (SD)	6.6 (1.8)	6.2 (1.7)	0.0006
Gender			
Female (%)	32 (59%)	25 (46%)	0.26
DKA at diagnosis			
Yes n (%)	8 (16%)	0 (0)	0.003
HbA1c at diagnosis (%)			
Mean (SD)	10.5 (2.2)	6.8 (1.2)	< 0.0001
T1D Family History			
Yes (%)	5 (9%)	10 (19%)	0.23

Results

- Baseline comparisons showed that TEDDY children diagnosed with had diabetic ketoacidosis (DKA) less often than controls and had lower A1c values at diagnosis (Table 1).
- Parents of TEDDY children reported higher scores on the PedsQL Diabetes than community controls and less pediatric parenting stress (Figures 1 & 2). Significant differences were only seen at 3 months post-diagnosis.
- No significant differences in STAI scores was seen (data not shown).

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Figure 1. Mean PedsQL score of TEDDY Children vs Controls

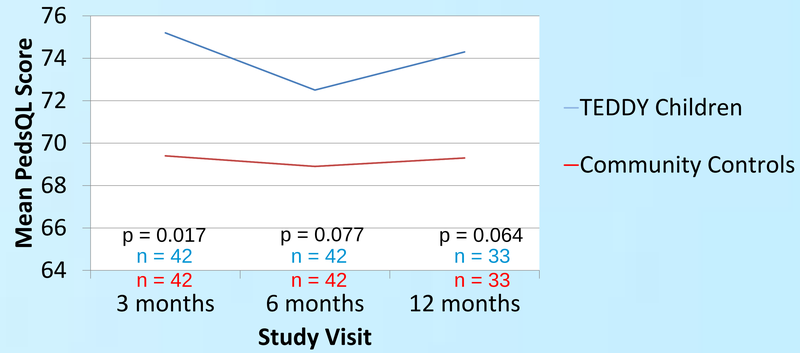
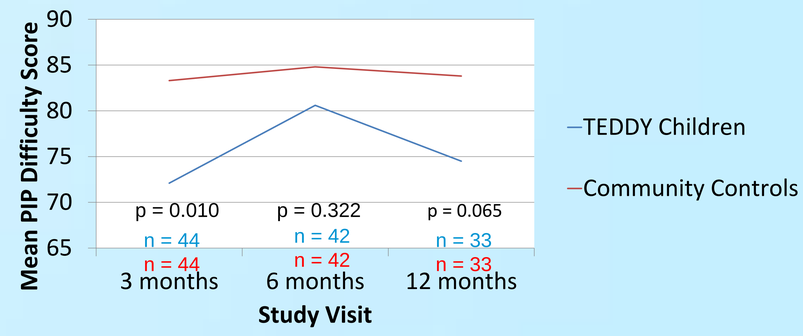


Figure 2. Mean PIP Difficulty Score of TEDDY Children vs Controls



Conclusion

- Parents of children diagnosed with diabetes in the TEDDY study reported better diabetes quality of life and less pediatric parenting stress than community controls at 3 months post-diagnosis. TEDDY participation may lessen the psychological impact of diabetes diagnosis.
- Differences in anxiety over the 12 months and quality of life and parenting stress at 6 and 12 months were not significant, although fewer subjects were included at later time points.
- Future examination will include additional subjects and will examine psychological adjustment after 1 year and with respect to glycemic control.

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