Health-Related Quality of Life and Diabetes Control in Immigrant and Italian Children and Adolescents with Type 1 Diabetes and in their Parents.

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INTRODUCTION AND OBJECTIVES

❖ Type 1 diabetes (T1D) requires daily and complex management for both patients and their parents, impairing the quality of life.

❖ To ensure a high quality of life and an optimal metabolic control are major T1D treatment targets, so it is essential to optimize the acquisition of competence for disease management and collaboration with diabetes team, mostly in disadvantaged populations such as immigrated families

Aim of this cross-sectional, observational study was to determine whether the metabolic control and the diabetes-specific health-related quality of life (D-HRQOL) of children and adolescents with T1D and their parents could be influenced by migrant status

PATIENTS AND METHODS

What?	• The Italian translation of the Pediatric Quality of Life Inventory 3.0 Diabetes Module (PedsQL™ 3.0 DM) was used to evaluate the D-HRQOL • Data on diabetic ketoacidosis (DKA) at T1D onset, insulin therapy (MDI/SAP), glycosylate hemoglobin (HbA1c), and physical activity (h/week)
Who?	• Children and adolescents with T1D and their parents *Inclusion criteria*: age range ≥5 and <19 years, T1D diagnosed at our Pediatric Diabetes Clinic by at least 1 year, regular 3-months follow up visit, no transition from MDI to SAP or vice versa and no change in blood glucose monitoring in the last 3 months, ability to independently read and complete the PedsQL™ 3.0 DM *Exclusion criteria*: difficulty in speaking and reading the Italian language, the presence of chronic complications or documented mental disorder
When?	• Patients and their parents were consecutively enrolled into the study during a routine visit and they filled in the PedsQL™ 3.0 DM at the same time, but separately

RESULTS

❖ **Study population** → 125 children and adolescents with T1D (males 53.6%), 102 mothers and 37 fathers

- **Group A** → 40 foreign patients (32%; males 50%) having at least one foreign parent. All patients, 32 mothers, and 12 fathers filled in the PedsQL™ 3.0 DM
- **Group B** → 85 Italian patients (68%; males 55.3%) having both native Italian parents. All patients, 70 mothers, and 25 fathers filled in the PedsQL™ 3.0 DM

❖ Groups A and B were comparable for gender, chronological age, auxological characteristics, duration of T1D, frequencies of other autoimmune diseases and of severe hypoglycemic and DKA events in the year before study recruitment

Table 1 – Clinical and metabolic characteristics of study population.

Characteristics	All (125)	Group A (40)	Group B (85)	χ²	p
Age (years)	12.4±3.55 (12.5)	11.9±3.40 (12.1)	12.6±3.61 (13.1)	-	0.352
T1D duration (years)	5.61±3.50 (5.30)	4.67±2.83 (4.06)	6.05±3.71 (5.91)	-	0.066
DKA at onset (%)	32.8	55.0	22.3	13.1	**<0.001**
SAP (%)	16.8	5.0	22.3	5.86	**0.015**
HbA1c					
mmol/mol	65.8±15.3 (63.0)	72.7±17.6 (69.0)	62.6±12.9 (60.0)	-	**<0.001**
≤58 mmol/mol (%)	36.8	17.5	45.9	9.42	**0.002**
Exercise (h/week)	3.31±2.71 (3.00)	2.04±2.71 (1.00)	3.79±2.56 (4.00)	-	**<0.001**

Table 2 – Child self-report PedsQL™ 3.0 DM

Scale	All (125)	Group A (40)	Group B (85)	p
Diabetes symptoms	64.1±13.9 (65.9)	57.9±14.6 (59.1)	66.9±12.8 (66.2)	**0.004**
Treatment barriers	78.2±18.4 (81.2)	68.1±23.6 (68.7)	82.9±13.0 (81.2)	**0.001**
Treatment adherence	84.7±13.5 (85.7)	81.7±16.7 (85.7)	86.0±11.6 (89.3)	0.323
Worry	62.5±25.5 (66.7)	52.9±26.9 (50.0)	66.9±23.7 (70.8)	**0.009**
Communication	76.4±20.8 (83.3)	71.7±21.9 (75.0)	78.5±19.9 (83.3)	0.098
Total score	73.2±12.8 (74.5)	66.5±14.1 (66.6)	76.2±10.9 (79.2)	0.121

Table 3 – Mothers PedsQL™ 3.0 DM

Scale	All (102)	Group A (32)	Group B (70)	p
Diabetes symptoms	62.9±16.9 (63.6)	56.7±18.1 (57.9)	65.8±15.7 (65.9)	**0.030**
Treatment barriers	66.5±20.9 (68.7)	55.9±19.8 (50.0)	71.3±19.7 (75.0)	**<0.001**
Treatment adherence	77.7±14.3 (79.2)	71.2±18.1 (78.6)	80.6±11.2 (82.1)	**0.018**
Worry	47.9±27.7 (45.8)	42.2±32.6 (41.7)	50.5±24.9 (50.0)	0.155
Communication	70.6±21.2 (75.0)	58.9±31.4 (58.3)	75.9±23.3 (75.0)	**0.009**
Total score	65.2±15.1 (66.8)	57.2±17.1 (57.7)	68.8±12.6 (72.0)	**0.011**

❖ No differences were found in fathers' data

❖ In all our young patients we found that HbA1c was negatively related to "*Treatment barriers*" (R=-0.319; p<0.001), "*Treatment adherence*" (R=-0.209; p=0.019), "*Worry*" (R=-0.214; p=0.017), and "*Communication*" (R=-0.238; p=0.008) scales

❖ The multivariate regression model for child D-HRQOL scales identified the following significant predictive factors: MDI insulin therapy (β=0.438; p=0.008), Italian ethnicity (β=0.018; p=0.004), HbA1c (β=-0.228; p=0.029) for "*Treatment barriers*" scale; Italian ethnicity (β=0.584; p=0.046) for "*Worry*" scale

CONCLUSIONS

… the lower the HbA1c, the better the D-HRQOL …

❖ Our results strongly suggest that migrant status confers significant disadvantages in terms of T1D treatment, glycemic control, and D-HRQOL in children and adolescents with T1D and their mothers. Moreover, parents' D-HRQOL data suggest that daily T1D management is usually supervised by mothers rather than fathers

❖ D-HRQOL should be regularly investigated in youth with T1D and their parents

❖ Specific challenges and educational interventions should be considered in clinical care of T1D patients with migration background