HEALTH-RELATED QUALITY OF LIFE AND ITS ASSOCIATED FACTORS IN CHILDREN WITH TYPE 1 DIABETES MELLITUS

Authors: Murillo Vallés M[1]., Rajmil L.[2], Bel Comós J[1]., Pérez J[3]., Corripio R[3]., Carreras G[4]., Herrero J[5]., Mengibar JM[5]:, Rodríguez-Arjona D[2]., Ravens-Sieberer U[6]., Raat H[7].

Hospital: [1]Hospital Universitari Germans Trias i Pujol, UAB. [2]IMIM y AQuAS. [3]Hospital Parc Taulí. [4]Hospital St. Pau. [5]Corporació de Salut del Maresme i la Selva. [6]University Medical Center Hamburg. [7]University Medical Center Rotterdam

OBJECTIVES

Type 1 Diabetes Mellitus (T1DM) is a chronic disease that affects all aspects of patient's life and especially psychologically and therefore health-related quality of life (HRQOL). The objective of the study was to assess HRQOL through internet in a cohort of children and adolescents with T1DM, analyzing associated clinical and sociodemographic factors.

Sociodemographic variables	N	Mean (SD) or %
Age		
Mean	136	13.45 (2.9)
8-11y	36	26.5
12-19y	100	73.5
Sex		
Boys	64	41.1
Girls	72	52.9
Type of family		
Biparental	113	84.3
Monoparental	21	15.7
Highest family level of education		
Primary school	54	40.3
Secondary school	54	40.3
University degree	26	19.4
Origin		
Native	128	94.1
Immigrant	8	6.0
Clinical variables		
Time w/diagnoses (years)	136	5.04 (3.73)
>5 years	54	39.7
≤5 years	82	60.3
BMI (Z score)	136	0.24 (0.9)
HbA1c	136	7.65 (1.34)
>7.5%	65	47.8
≤7.5%	71	52.2
Mental health		
SDQ	136	10.64 (5.28)
Adherence		
High	64	47.1
Low	72	52.9
Hypoglycemia		
Yes	3	2.2
No	133	97.8
Hyperglycemia		
Yes	10	7.4
No	126	92.6

Table 1 Sociodemographic and clinic characteristics of participants

METHODS

This was a descriptive study of 136 patients with T1DM from 5 hospitals in Catalonia, Spain (72 girls, mean age 13.4 years (range 8-19). Inclusion criteria were more than 6 months from diagnosis, more than 8 years old and without cognitive problems. Were collected sociodemographic variables: age, sex, family level of education, type of family and origin; and clinical variables: type of insulin therapy (multiple daily injections [MDI] or pump therapy), duration of disease, adherence to treatment, decompensations in the last 3 months (hipo/hyperglycemia), body mass index (BMI) and glycated hemoglobin (HbA1c). HRQOL was assessed using the **EuroQol-5D (EQ-5D-Y)** with 5 dimensions (mobility, self-care, usual activities, pain-discomfort and anxiety-depression) in a visual analogue scale (VAS) and **KIDSCREEN** with 5 dimensions (physical well-being, psychological well-being, autonomy and relationships with parents, social support and relationship with friends and school environment) and KIDSCREEN-10 index. Mental health status was assessed using the Strengths and Difficulties Questionnaire (SDQ).

	Physical well being	Psychological well-being	Parents /Autonomy	Peers	School	KIDSCREEN -10 index	VAS
Scores	46.4	49.7	50.5	53.6	52.0	49.6	80.2
95%CI	44.8-48.0	48.0-51.3	49.1-51.9	52.1-55.2	50.4-53.6	42.2-51.0	77.6-82.7

Table 2. KIDSCREEN-27, KIDSCREEN-10 Index and Visual analogue scale (VAS) scores of EQ-5D-Y and its 95%confidence interval (95%CI)

	Physical well-being	Psychological well-being	Parents /Autonomy	Peers	School	KIDSCREEN-10 index	VAS
Age	-0.23**	-0.26**	-0.13	-0.22**	-0.21**	-0.34**	-0.20*
SDQ	-0.20*	-0.55**	-0.37**	-0.4**	-0.4**	-0.54**	-0.28**
Bullying	-0.13	0.16	0.15	0.11	0.1	0.15	0.05
Time w/ diagnoses	-0.08	-0.04	-0.12	-0.07	-0.01	-0.13	0.04
BMI (Z score)	-0.02	-0.03	0.06	0.05	0.05	0.003	-0.10
HbA1c	-0.25**	-0.12**	-0.09	-0.12	-0.14	-0.17*	-0.24**

Table 3 Correlation coefficients (Spearman) of HRQOL and mental health, social acceptance (bullying), and clinical variables. *p<0,05; **p<0,01.

	Physical well-being B (SE)	Psychological well-being B (SE)	Parents/ Autonomy B (SE)	Peers B (SE)	School B (SE)	KIDSCREEN-10 B (SE)	VAS B (SE)
Sociodemographics							
Sex (boys)	-	-	-	-	-4.46 (1.52)**	-	-
Age	-	-	0.21 (0.08)**	-	-	-0.93 (0.25)**	-
Type of family (monoparental)	-5.2 (2.03)*	-	-	-	-	-15.2 (4.05)**	-
Clinical variables							
Adherence (high)	4.34 (1.48)**	3.84 (1.41)*	-	-	-	-	-
Mental health (SDQ)	-	-0.96 (0.13)**	-0.46 (0.12)**	-0.71 (0.13)**	-0.63 (0.14)**	-0.7 (0.11)**	-0.62 (0.22)**
Interaction terms							
Age* type of family	-					1.02 (0.26)**	
Adjusted R²	0.15	0.29	0.12	0.17	0.16	0.30	0.08

Table 4. Multiple linear regression models of the KIDSCREEN-27, KIDSCREEN-10 Index and Visual analogue Scale (VAS) of EQ-5D-Y. *B*: beta coefficient; SE: Standard error. Reference category: girls; biparental family; adherence: low. *p<0,05; **p<0,01 .

RESULTS

Children and adolescents with T1DM reported similar HRQOL than the general population of the same age and gender, although physical well-being mean scores were lower (worse) than the European average (<50) and especially in girls, older children (> 11 years old), those from single-parent families, and those with low adherence. Older children and patients with poor metabolic control (HbA1c >7,5%) showed worse scores in the KIDSCREEN-10 index. Similar results were observed with the EQ-5D-Y. HRQOL showed negative correlation with age, HbA1c, and mental health. Multivariate models showed that age, single-parent families, adherence and mental health were the most influential factors.

CONCLUSIONS

Pediatric diabetic patients report similar HRQOL than the population of the same age with slightly worse physical well-being. The study shows some factors to be taken into account to improve HRQOL in these patients, and also the feasibility of using internet to collect information in clinical practice

References

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Marta Murillo-Valles
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