



# Parental Psychosocial Variables and Glycemic Control in T1D Pediatric Age: A Systematic Review

Costa, V<sup>1</sup>., Pereira, B<sup>1</sup>., Patton, R. S<sup>2</sup>., & Brandão, T<sup>1</sup>.

## INTRODUCTION & REVIEW PURPOSE



1. The global prevalence of Type 1 Diabetes (T1D) in children and adolescents is estimated at 651,700 cases, with an annual incidence of 108,300 cases in this age group [1]. Worldwide, the five countries with the highest number of cases of type 1 diabetes by the age of 20 were India (282.832 cases), United States (170.408 cases), Brazil (112.240 cases), China (66.040 cases) and Russia (58.338 cases) [1]. In 2022, it was estimated that T1D affected 672 children aged 0-9 years in Portugal, and 1,184 cases were recorded among those aged 10-14 years [2].

2. Research has focused on how parents cope with this responsibility, revealing that many experience significant levels of diabetes distress (DD), anxiety, stress, and depression, which are attributed to the daily demands of managing T1D [3,4]; Studies indicate that alleviating parental burden and enhancing caregivers' cognitive and emotional resources can positively affect child's glycemic control [5]. On the other hand, poor glycemic control may exacerbate diabetes distress (DD) and increase the fear of hypoglycemia (FH) [6];

## Objective



This review aimed to summarize the evidence, between 2019 and 2024 regarding the relationship between parental psychosocial variables (e.g., fear of hypoglycemia, stress and family conflict) and children's glycemic outcomes, between the age of 1-10 years old.

## REFERENCES



## CONTACT

vcosta@ispa.pt



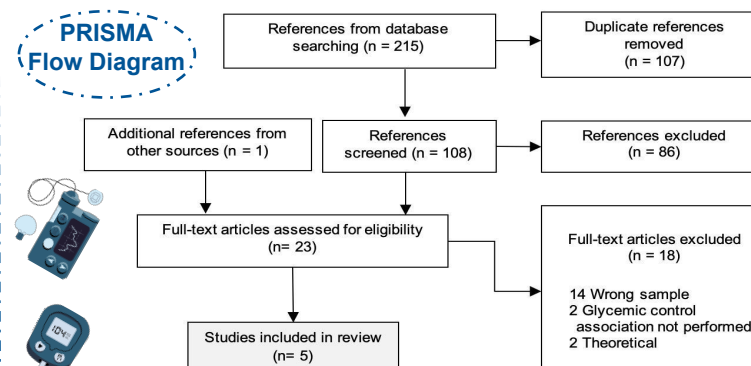
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## METHOD



**I. Key Search Terms Formula** - (diabetes AND type 1) AND (parent\* OR mother\* OR father\* OR famil\* OR caregiver\*) AND (longitudinal OR cross-sectional) AND (adjustment or adaptation OR well-being OR distress OR stress OR anxiety OR attachment OR "quality of life" OR "quality of sleep" OR depression OR "fear of hypoglycemia" OR "social support" OR "emotion regulation" OR "family conflict\*") AND (child\* OR kid OR kids) AND ("glycated hemoglobin" OR "hemoglobin A1c" OR HbA1c OR "glycemic control" OR "metabolic control" OR "glycemic outcome\*").

**II. Eligibility Criteria:** I) Studies with parents of children with T1D aged 1 to 10 years old; II) Quantitative cross-sectional and longitudinal studies; III) Written in English, Portuguese or Spanish;



## RESULTS



**Case et al. [7]** in a longitudinal study with 127 US parent-child dyads (children aged 5-9 years, and newly diagnosed with T1D), found a negative correlation between family conflict and parent engagement in their child's T1D treatment. Conversely, a positive correlation was found between family conflict and children's HbA1c levels.

**Elhenawy et al. [8]** using a sample of 54 Egyptian parent-child dyads (ages 0 to 5, n = 10), ages 5 to 10, n = 44), examined variables associated with lockdown and their impacts on children's glycemic outcomes. Results highlighted that parental stress, both before and after confinement, was positively correlated with glycemic control (HbA1c).

**Patton et al. [9]** conducted a longitudinal study with 106 parent-child dyads in the US (children aged 5-9, 58 girls and 48 boys) to examine HbA1c trajectories in children with newly diagnosed T1D. On average, children's HbA1c levels increased over time (between early and later stages). Higher parental FH predicted a high stable or intermediate increasing HbA1c trajectory. Finally, long-term parental distress positively correlated with HbA1c and family conflict correlated with elevated HbA1c levels

**Stanek et al. [10]**, in a longitudinal study with 128 US parent-child dyads (children aged 5-9 years), assessed the impact of stressful events in recently diagnosed children with T1D and psychological stressors among their caregivers. They found that decreased family income predicted higher child HbA1c levels at 9- and 12-months and less SMBG.

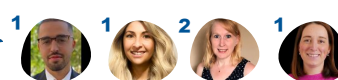
**Youngkin et al [11]**, analyzed the relationship between FH and the initiation and use of CGM, in 96 US parent-child dyads (children aged 5-9) with recent-onset T1D. The average HbA1c from time 1 to time 3 increased significantly (T1=7.6%-T3= 8.3%). Parents of children that began CGM between time 1 and time 2 had higher T1 HFS-Behavior scores and experienced greater decrease of these scores. For CGM initiation between time 2 and time 3, parents had higher T1 HFS-Worry scores.

## DISCUSSION & CONCLUSION



Our findings and current literature present a unidirectional perspective regarding parental psychosocial factors and children's glycemic outcomes. Thus, some mediators/moderators could be considered in future. Also, longitudinal designs with sophisticated statistical analyses could possibly pave the way for evaluate reciprocal associations, over time. Interventions targeting parental psychosocial variables may play a pivotal role on improving caregivers quality of life and may enhance their children glycemic control.

## RESEARCH TEAM



<sup>1</sup> William James Center for Research, ISPA—Instituto Universitário, Portugal, \* Center for Healthcare Delivery Science, Nemours Children's Health System, Jacksonville, Florida, USA