

## BP\_P003

### GLYCEMIC CONTROL IN ADOLESCENTS WITH TYPE 1 DIABETES MELLITUS (T1DM): THE ROLE OF HEALTH LITERACY AND NUMERACY

Sharon Chung Tuang Yuk<sup>1,2</sup>, Joyce Hong Soo Synn<sup>1</sup>, Lim Poi Giok<sup>3</sup>, Yang Wai Wai<sup>1,2</sup>

<sup>1</sup>Department of Paediatrics, Hospital Tunku Ampuan Besar Tuanku Aishah Rohani, Universiti Kebangsaan Malaysia

<sup>2</sup>Department of Paediatrics, Faculty of Medicine, Universiti Kebangsaan Malaysia

<sup>3</sup>Department of Paediatrics, Hospital Tunku Azizah

#### INTRODUCTION

Type I diabetes mellitus (T1DM) is the most common form of diabetes diagnosed in childhood. The Diabetes in Children and Adolescents Registry (Di-CARE) in Malaysia reported that many of these patients are between 10 and 19 years old. However, little is known about the association of their health literacy and numeracy with their glycemic control.

#### METHODOLOGY

A cross-sectional study among T1DM patients aged 12 to 19 years old who attended Paediatric Endocrine Clinic at Hospital Tunku Ampuan Besar Tuanku Aishah Rohani and Hospital Tunku Azizah was conducted from March 2025 to March 2026. Participants answered 14 questions on the Diabetes Numeracy Test (DNT-14) and completed a 29-item health literacy questionnaire (myMOHLAA-Q). Data analysis was performed using SPSS version 30. The relationship of health literacy and numeracy with glucose control (HbA1c) was analyzed using Spearman's rank order correlation.

#### RESULTS

A total of 43 adolescents with T1DM were recruited with a median age of 15.2 years (IQR: 13.2–17.2 years). There were 22 female (51.2%) and 21 male (48.8%) participants. The majority of the participants ( $n = 27$ , 62%) had moderate glycemic control with a median HbA1c of 8.3% (IQR: 7.5–9.6%). A Spearman's correlation revealed a negative relationship between mean HbA1c and knowledge on blood glucose monitoring,  $r_s(43) = -0.34$ ,  $p < 0.05$ . Additionally, positive relationships were found of knowledge on blood glucose monitoring and knowledge on insulin with total DNT-14 score,  $r_s(43) = 0.54$ ,  $p < 0.001$  and  $r_s(43) = 0.78$ ,  $p < 0.001$ , respectively. The small sample size may have limited the ability to detect other significant relationships.

#### CONCLUSION

The majority of T1DM adolescents have moderate glycemic control. Active intervention in improving knowledge on blood glucose monitoring and insulin helps to improve glycemic control, reiterating the importance of diabetes education in the long-term management and glycemic control in adolescents with type 1 diabetes.