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### Cover Page Footnote

We acknowledge the guidance and support received from the faculty of the institution and investigator is thankful to Dr Riaz I, Assistant Professor, Department of Paediatric Medicine, SAT Hospital, Thiruvananthapuram for their inspiring guidance, valuable suggestions and constant encouragement

# Health related quality of life and coping strategies of children with type 1 diabetes mellitus attending a tertiary care setting

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## Abstract

**Introduction:** Diabetes mellitus (DM) is a syndrome that results in abnormally high blood sugar levels and is due to the combined effect of hereditary and environment. There is a global increase of type 1 diabetes at a proportion of 3% annually in children and adolescents and frightening 5% increase annually among pre-school children. The highest incidences were found in the 10 to 14 years (Swift, 2007). **Objectives:** The objectives were to determine the health related quality of life (HRQOL) and coping strategies of children with type 1 DM, to find the association between HRQOL with selected demographic variables and to identify the correlation between different domains of coping strategies with HRQOL. **Method:** Cross sectional study design was used to find out the HRQOL and coping strategies of children with type 1 DM. Sample for the present study consists of 61 children with type 1 DM within the age group of 8-15 years attending Paediatric Diabetic clinic and Paediatric medicine wards of Sree Avittom Thirunal (SAT) Hospital, Trivandrum. **Results:** The present study revealed that majority of the children (93.4%) had good generic Quality of Life (QOL). Out of 61 diabetic children, 44.3% of children had good diabetic related QOL, 55.7% of children had moderate diabetic related QOL. 67.2% of children had good HRQOL and 32.8% of children had moderate HRQOL. None of the children had poor HRQOL. Boys showed better HRQOL than girls. Statistically significant association was present between age of disease onset and HRQOL ( $p$  value is  $< .05$ ). HRQOL had a positive correlation with cognitive palliative and acceptance domain and had negative correlation with coping domains such as avoidance, emotional reaction, wishful thinking and distance.

**Key words:** Children, coping strategies, health related quality of life, type 1 diabetes mellitus

## Introduction

Type 1 DM is the highest prevailing protracted disease of childhood, exceeded only by asthma. The two frequent forms of diabetes are either due to decreased production of insulin (in type 1) or due to reduced response by the body to insulin (in type 2). Type 1 diabetes typically develops in children and young adults (IDF, 2014). It is estimated that 5 to 10 percentage of all diagnosed cases of diabetes are type 1 DM (IDF, 2014). Worldwide about 79,100 children less than 15 years are predicted to

acquire type 1 diabetes. Approximately among 4,97,100 children with type 1 DM 26% live in the regions of Europe and 22% in North America and Caribbean region (Maahs, West, Lawrence & Mayer-Davis, 2010). The campaigns of World Diabetes Day 2007 and 2008 initiate the demanding task on ever increasing incidences of type 1 DM and firmly proclaimed that there should not be any more child mortality due to diabetes. It was noted in an international survey of male-female ratios in children with type 1 DM less than 15 years of age; a minor increase in male gender among populations of European origin, while an increase among girls was noted in populations of African or Asian origin (Kumar, Azad, Zabeena & Karla, 2012). The prevalence of type 1 diabetes in India is 10.1-10.6 per hundred thousand. An age-dependent pattern is identified in the incidence of type 1 diabetes and it was found that when comparing

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to other age group, type 1 DM was less among 0 to 4 years (Kumar et al., 2014). Significant stress is detected in the affected children; due to its long term nature and multicomponent management that involves daily injections, blood glucose monitoring, dietary modification and complication risks (Kakleas, Kandyla, Karayianni, & Karavanki, 2009). The extent of impact of a disease or medical condition on an individual's daily physical, emotional, mental and contextual wellbeing is his HRQOL. Type 1 diabetes can induce increased stress among affected children because of its long term nature. Higher rate of depression and eating disorders is found among girls with type 1 diabetes (Dantzer C, Swendsen J et al., 2003). HRQOL of the children is adversely affected as a result of childhood diabetes (Kakleas, Kandyla, Karayianni, & Karavanki, 2009). During the early time of reworking after diagnosis, adolescents with diabetes are at risk for adjustment problems. Low metabolic control has been associated with anxiety, depression and poor self-esteem. It has been also associated with high levels of stress and maladaptive coping styles. In addition, low metabolic control and treatment adherence are connected with family conflict, lack of communication, poor parental involvement and support for diabetic youth (Delamater, 2000). A study conducted on factors affecting QOL and metabolic control of children type 1 DM found that children with type 1 DM expressed low scores in QOL domains compared with a healthy reference group (van Bussel, et al., 2013).

### Material and methods

A quantitative approach and a cross sectional design was adopted in the study. The study was carried out in Paediatric Diabetic clinic and Paediatric medicine wards of SAT Hospital, Trivandrum. The study population included children with type 1 DM within the age group of 8-15 years. Sample for the present study consisted of 61 children with type 1 DM within the age group of 8-15 years attending Paediatric Diabetic clinic and Paediatric medicine wards of SAT Hospital, Trivandrum. The consecutive cases satisfying the inclusion and exclusion criteria are selected from Paediatric Diabetic clinic and Paediatric medicine wards of SAT Hospital, Trivandrum.

A semi structured interview schedule was used to obtain information regarding socio demographic data

and clinical data, translated version of Peds QLTM Paediatric Quality of Life Inventory (version 4.0) was used to assess the generic HRQOL, translated version of Peds QLTM Diabetes Questionnaire (version 3.0), self-report and parent report were used to find out the diabetic related QOL and CODI Questionnaire was used to assess the coping strategies. Internal consistency of the tool was checked by calculating reliability estimate from split half method ( $r = .8$ ) and Cronbach's alpha ( $\geq .87$  for both standardized tools).

Ethical clearance was obtained from Institutional Research committee. Clearance was obtained from Research committee and Human Ethics committee of Government College of Nursing, Trivandrum. The data collection period was between 19 Jan 2015 to 28 Feb 2015. The investigator obtained permission for the conduct of study from the Medical Superintendent and Head of the Department of Paediatric medicine, SAT Hospital, Thiruvananthapuram. The investigator approached the clients who satisfied the inclusion criteria and established good rapport with them. The purpose of the study was explained and informed consent and assent was obtained. It was assured to them that all data would be kept confidential and used only for the study purpose. Duration of data collection for each child and parent was 30 minutes.

The collected data was organized, tabulated and interpreted using descriptive and inferential statistics. The analysis was done using SPSS version 23. Socio demographic variables were analyzed using frequency and percentage. The association between socio demographic variables and HRQOL was determined by Chi-square test. The correlation between HRQOL and different domains of coping was determined by using Spearman Rank Correlation.

### Results

It was observed that 68.9% of the children belonged to the age group of 8-12 years and 31.1% belonged to 12-15 years. Among the 61 children who participated in the study, 37.7% were boys and 62.3% were girls. Majority of the participants belonged to nuclear families. It was observed that 60.7% of the children were from families of below poverty line (BPL) and 39.3% were from above poverty line (APL). Among the 61 samples, 60.7% of children had disease onset before ten years of age and 39.3% of children had disease onset after ten

years. Distribution of children according to duration of illness showed that 29.5% of children had diabetes illness for less than one year and 36.1% had diabetes for more than two years. Majority of children (90.2%) had no family history of type 1 DM and 77% of children had no family history of type 2 DM. All children were under regular treatment. Among the 61 children with type 1 diabetes 93% had good QOL.

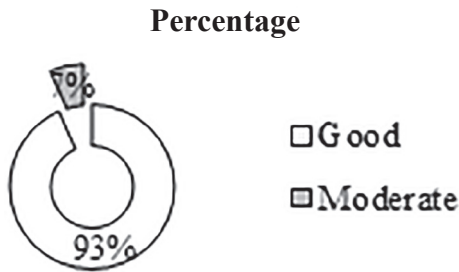


Figure 1: Health related quality of life among children with type 1 DM

The Figure 1 reveals that majority of children (93.4%) had good generic QOL. Out of 61 diabetic children, 44.3% of children had good diabetic related QOL, 55.7% of children had moderate diabetic related QOL. Sixty-seven percentages of children had good HRQOL, 32.8% of children had moderate HRQOL. None of the children had poor HRQOL.

Table 1: Distribution of Children According to HRQOL

HRQOL domains	Good		Average/Moderate	
	Frequency	Percentage	Frequency	Percentage
Physical functioning	58	95.1	3	4.9
Emotional functioning	18	29.5	43	70.5
Social functioning	58	93.4	3	4.9
School functioning	34	55.7	27	44.3

Table 1 reveals that majority of children (95.1%) had good physical functioning and more than half of children (54.1%) had average emotional functioning, 29.5% had good emotional functioning and 16.4% had poor emotional functioning. More than half of the children had good school functioning and (93.4%) had good social functioning.

Boys showed better HRQOL than girls and it resulted in a significant association between gender of the children and HRQOL. Significant association was present between age of disease onset and HRQOL ( $p$  value is  $< .05$ ). Children with onset of disease before 10 years showed better HRQOL. There was no significant association between family histories of type 1 diabetes with HRQOL. No significant association between family histories of type 2 DM with HRQOL was found.

Table 2: Coping Strategies of Children According to CODI Questionnaire

N= 61		
	Frequency	Percentage
Avoidance	11	18
Cognitive palliative	32	52.5
Emotional reaction	1	1.6
Acceptance	1	1.6
Wishful thinking	15	24.6
Distance	9	14.8

Table 2 shows that 18% of children used avoidance, 52.5% used cognitive palliative, 1.6% used emotional reaction, 1.6% used acceptance, 24.6% used wishful thinking and 14.8% used distance as a coping strategy. Overall Children used cognitive palliative domain more frequently. Acceptance and emotional reaction were the least used coping strategy.

Table 3: Correlation Between Health Related Quality of Life and Different Domains of Coping

	Spearman rank correlation (r)	p - value
Avoidance	-.578**	.0001
Cognitive palliative	.819**	.0001
Emotional reaction	-.356**	.005
Acceptance	.283*	.027
Wishful thinking	-.347**	.006
Distance	-.382**	.002

It is revealed in the table 3 that HRQOL had a positive correlation with cognitive palliative and acceptance domain and had negative correlation with coping domains such as avoidance, emotional reaction, wishful thinking and distance. Cognitive palliative and acceptance domains were frequently used by children with better HRQOL.

## Discussion

The study intended to assess the HRQOL and coping strategies of children with type 1 DM and identified that more than average of diabetic children had good HRQOL. It also revealed that HRQOL had a positive correlation with cognitive palliative and acceptance domain and had negative correlation with coping domains such as avoidance, emotional reaction, wishful thinking and distance. Cognitive palliative and acceptance domains were frequently used by children with better HRQOL. The findings of the study were supported by a study on coping strategies of children with type 1 DM which showed negative correlation of avoidance, emotional reaction and wishful thinking with generic and disease-specific HRQOL. There was positive association with disease-specific HRQOL and acceptance domain (van Bussel, et al., 2013).

Boys showed better HRQOL than girls. Children with age of disease onset above 10 years showed better HRQOL. The findings of the study demonstrated consistency with a study conducted by Naughton, et al.(2008) which showed a significant age-gender interaction, such that, in older groups, HRQOL was lower for girls but higher for boys.

## Conclusion

Younger age need more support as they have less HRQOL than older age. Group interaction and involvement need to incorporate while caring and teaching as it can provide good results. While caring children with type 1 DM gender difference in QOL need to be considered as the results showed that girls have less coping when compared with boys.

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## Reference

- Dantzer, C., Swendsen, J., Maurice-Tison, S., & Salamon, R. (2003). Anxiety and depression in juvenile diabetes: a critical review. *Clinical Psychology Review*, 23(6), 787-800.
- Delamater, A.M. (2000). Quality of life in youths with diabetes. *Diabetes Spectrum*, 13, 42.
- IDF. (2014). IDF DIABETES ATLAS Sixth edition. *Diabetes Atlas, Six Edi*. <https://doi.org/10.1016/j.diabetes.2009.10.007>
- Kakleas, K., Kandyla, B., Karayiyanni, C., & Karavanaki, K. (2009). Psychosocial problems in adolescents with Type1mellitus. *Diabetes and Metabolism*.2009, 35(5), 339-350. Doi: 10.1016/j.diabet.2009.05.002.
- Kumar, K.M.P, Azad, K., Zabeena, B., & Karla, S., (2012). Type 1 diabetes in children: Fighting for a place under the sun. *Indian Journal of Endocrinology and Metabolism*, 16(7), 16(S1), S1 – S3. <https://doi.org/10.4103/2230-8210.94241>
- Kumar, P.K.M., Dev, P.N., Raman, K.V.,Rajnanda, D., Prasadini, G., Das, A.K., & Ramoul, S (2014). Consensus statement on diabetes in children. *Indian Journal of Endocrinology and Metabolism*, 18(3), 264. <https://doi.org/10.4103/2230-8210.129714>
- Maahs, D. M., West, N. A., Lawrence, J.M., & Mayer-Davis, E. J. (2010). Chapter 1 : Epidemiology of Type 1 Diabetes. *Endocrinology and Metabolism Clinics of North America*, 39(3), 481–497. <https://doi.org/10.1016/j.ecl.2010.05.011>.Chapter
- Naughton, M.J., Ruggiero, A.M., Lawrence, J.M., Imperatore, G., Klingensmith, G.J., Waitzfelder, B., ..... Loots, B. (2008). Health-Related Quality of Life of Children and Adolescents with Type 1 or Type 2 Diabetes Mellitus. *Achieves of Pediatrics and Adolescents Medicine*, 162 (7), 649 – 657.
- Swift, P. G. F. (2007). ISPAD clinical practice consensus guidelines 2006-2007: Diabetes education. *Pediatric Diabetes*, 8(2), 103–109. <https://doi.org/10.1111/j.1399-5448.2007.00232.x>
- van Bussel, A., Nieuwesteeg, A., Janssen, E., van Bakel, H., van den Bergh, B., Schaaik, N. M., ..... Hartman, E. (2013). Goal disturbance & coping in children with Type1 Diabetes Mellitus: Relationships with health-related quality of life and A1C. *Canadian Journal of Diabetes*, 37, 169-74.