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Research Article

**THE ASSOCIATION BETWEEN THE PARENTS'
KNOWLEDGE OF CARBOHYDRATE COUNTING AND THE
GLYCAEMIC CONTROL OF THE CHILDREN WITH TYPE 1
DIABETES.**¹Dr Javeria Kiran, ²Dr Sidra Kanwal, ³Dr Shawana Rehman.^{1,2}MBBS, Avicenna Medical College, Lahore.³MBBS, Islam Medical and Dental College, Sialkot.**Article Received:** June 2020**Accepted:** July 2020**Published:** August 2020**Abstract:**

Medical-nutritional treatment is a significant segment of type 1 diabetes (T1D) care in youngsters and sugar checking (carbohydrates counting) is one such technique. We meant to assess the information on sugar considering as a part of guardians of kids with T1D from Sri Lanka and study its relationship with the kid's glycaemic control. The general information on starch considering as a real part of guardians was deficient. Better information was related with improved glycaemic control in the kids and lower frequency of hypoglycaemic scenes. We additionally watched a converse relationship among information and span of diabetes. Our tested kids with moderately ineffectively controlled T1D and guardians were generally from a center level financial foundation; consequently our discoveries should be additionally reinforced by affirmation in more various populaces.

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BACKGROUND

Medical-nutritional treatment is a significant segment of type 1 diabetes (T1D) care in youngsters and sugar checking (carbohydrates counting) is one such technique. We meant to assess the information on sugar considering as a part of guardians of kids with T1D from Sri Lanka and study its relationship with the kid's glycaemic control.

All inclusive, the occurrence and commonness of T1D¹ differ among nations and locales, being generally normal in Finland and other Scandinavian nations. Ongoing examinations have indicated a consistent increment in the predominance of T1D. The monetary weight related with T1D is probably going to be extensive, since the illness presents during youth or pre-adulthood. It is assessed that every year T1D brings about clinical expenses and lost pay of about \$14.3 billion in the US.²

Insulin treatment along with standard blood glucose observing is the primary treatment procedure for T1D. Medical-nutritional treatment is likewise a significant segment of T1D care in youngsters.³ It plans to give adequate and proper vitality just as full scale and micronutrients for ideal development, advancement, and glycaemic control. Carbohydrate counting is one such strategy which permits the alteration of prandial insulin portion as per the starch consumption in T1D patients.⁴ Standard starch substance of food is recorded and is made accessible to the patients, which empowers them to figure the sugar content in every supper and alter the insulin portions required to protect postprandial blood glucose inside typical cutoff points.⁵

Sri Lanka is a South Asian nation with a populace of about 20.9 million. Dietary examples in Sri Lanka are like somewhere else in the locale and commonly have a high sugar content.⁶ henceforth, all things considered, Sri Lankan guardians discover sugar counts all the more testing, which thus conceivably prompts poor glycaemic control in the youngsters. The current investigation expects to assess the information on sugar considering as a real part of guardians of kids with T1D from Sri Lanka and study its relationship with the youngster's glycaemic control and other sociodemographic boundaries.

2.METHODS:

2.1. Study Population and Sampling

This clear cross-sectional examination was led at a hospital for Children in the capital of Sri Lanka. The medical clinic has a bed quality of more than 920 and it is viewed as perhaps the biggest children emergency clinics on the planet. Also, youngsters

with T1D all through the nation are alluded to its facilities from different medical clinics and the patients have a place with numerous ethnic gatherings and various financial foundations empowering investigation of various elements that would influence the information on carbohydrates checking.

The example size required to ascertain a distinction of HbA1c 0.45%, between those with great and helpless information (SD=1.14, α =0.048, and β =79%), was 169. A nonresponse pace of 9.8% was expected. Consequently one hundred and ninety guardians of youngsters with T1D fulfilling the consideration and avoidance measures were welcomed for the examination. For incorporation the youngster ought to be determined to have T1D at any rate a half year before enrollment to the examination (all together for the guardians to acquaint with sugar counting and for the treatment to be upgraded) and treated with various day by day infusions of insulin and use starch including in dinner arranging. Besides, the parent must be the individual who tallied sugars at home. Youngsters having other simultaneous endocrine infections or issues meddling with wholesome administration were prohibited from the investigation. The centers are held once every week and on every day those wonderful the consideration/avoidance standards were resolved and a rundown of qualified members was readied. Consequently the primary patient was chosen arbitrarily from this rundown and from there on each other patient was welcomed for the examination.

2.2. Study Instrument and Data Collection

Information assortment was completed via prepared Research Assistants. A questioner regulated survey was utilized for an assortment of sociodemographic and disease related information. The survey assessed sociodemographic (age and sexual orientation of parent/kid, level of training of parent, and occupation) and malady related elements (length of sickness, insulin infusion recurrence and portion, number of hypoglycaemic scenes in past month, and nearness of diabetes related inconveniences). HbA1c estimation was utilized for the appraisal of glycaemic control. Information on the parent with respect to starch counting was evaluated dependent on a 24-hour dietary review of the kid's eating regimen by the parent. At first the parent was approached to review the earlier day's dinner taken by the kid from 6.00 am to 6.00 am the following day. Then the guardians were approached to count starch intake for every dinner depending on the dietary review.

2.3. Definitions and Data Analysis

The information authorities utilized the food thing standard starch content rule accessible at the

emergency clinic to ascertain the real sugar substance of every one of the four dinners separately. The exactness of these figuring was checked by a solitary Clinical Nutritionist with involvement with Sri Lankan dietary examples and their organization, before investigation.⁷

For examination the proportions got were additionally isolated into three gatherings, underestimation (< 0.8), precise estimation (0.8-1.0), and overestimation (>1.1). This gathering was done independently for the complete worth and proportions of every feast (Breakfast, Lunch, Dinner, and Snacks). A normal Sri Lankan dinner comprises of 100g of starches, and past examinations have indicated that a sugar checking variety of >9.8g is related to glycaemic debilitation.^{8, 9} Thus, for this examination, exactness was characterized by gauges inside 10% of determined genuine admission (all out proportion somewhere in the range of 0.8 and 1.0). Besides, for examination purposes the length of diabetes was separated into two equivalent gatherings (≤ 3 years and >3 years); HbA1c levels were assembled as $\leq 7.51\%$, 7.52–8.51%, and $>8.51\%$ to reflect great, satisfactory, and poor glycaemic control, individually, while the members were gathered dependent on age as ≤ 34 years, 35-39 years, and >39 years.

A multivariate relapse examination was performed to decide the commitments of sugar tallying exactness to glycaemic control (HbA1c), modifying for kid's age, parent's age, parent's degree of training, and span of diabetes. Information were broke down utilizing SPSS and investigation was done. In all investigations a p esteem ≤ 0.04 was considered measurably noteworthy.

3. RESULTS:

3.1. Sociodemographic Characteristics

Test size was 181 (reaction rate was 95.1%) (Parents to kid proportion 1:1). Dominant part of the guardians were moms (78.4%, $n=141$), while 68.4% ($n=123$) of the kids were females. The vast majority of the youngsters were in the 7-11 years' (45.1%, $n=81$) and 12-15 years' (49.1%, $n=88$) age classifications. The mean age of the guardians and youngsters was 38.7 ± 5.93 years (run 22-51 years) and 10.1 ± 2.35 years (go 2-16 years), separately. Larger part of guardians were taught up to the degree of auxiliary instruction (Grades 6-11) (56.3%, $n=101$), while 9.8% ($n=17$) have finished tertiary training. Dominant part of the guardians were housewives (64.5%, $n=118$).

The mean term of diabetes in the kids was 3.65 ± 2.56 years (extend 7 months–12.5 years). Mean HbA1c level was $8.2\pm 0.87\%$ and HbA1c levels ran from 5.3 to 10.5%, with just 19.8%

($n=35$) of the examination populace accomplishing an HbA1c estimation of $<7.4\%$. The mean morning, night, and night insulin portions were 10.7 ± 6.3 IU, 4.35 ± 4.58 IU, and 6.81 ± 6.11 IU, separately, while the mean absolute insulin portion was 21.5 ± 11.2 IU. Lion's share of the youngsters utilized insulin three times each day (60.23%, $n=110$). None of the youngsters had renal entanglements because of diabetes, despite the fact that 4.8% ($n=8$) had been determined to have visual complexities. Number of hypoglycemic scenes in the previous month went from 0 to 3 scenes, while the dominant part (74.5%, $n=134$) didn't have any scenes; 20.36% ($n=36$) had just a single scene.

3.2. Starch Counting and Sociodemographic Factors

Overall, guardian's evaluations of sugar mean the absolute feast was 0.87 ± 0.27 (87.7%) (Territory 0.37-1.46) of the genuine starch check. The proportion esteems were generally precise for Lunch (0.99 ± 0.53 [range 0.32-4.01]), trailed by Breakfast (0.95 ± 0.42 [range 0.34-2.02]) and Dinner (0.87 ± 0.386 [range 0.14-2.02]). Least exactness was watched for estimation of sugar include in Snacks (1.21 ± 0.57 [range 0.51-3.32]). In the straight out investigation just 30.49% ($n=53$) of guardians were assembled in the "exact" estimation class for the complete starch check, while "underestimation" (44.16%, $n=78$) was the most widely recognized classification. Rates of guardians in the "precise" estimation classification for Breakfast, Lunch, Dinner, and Snacks were 29.7% ($n=52$), 35.8% ($n=64$), 29.7% ($n=52$), and 22.2% ($n=41$), individually.

Parental gauge of complete starch included, being more precise in fathers (0.97 ± 0.18) than in moms (0.85 ± 0.28) ($p=0.013$). Be that as it may, no huge contrast in the sugar tally among moms and fathers was noted in the individual suppers (Breakfast, Lunch, Dinner, and Snacks). We didn't watch a critical relationship between starch tally proportion and parental age. No relationship between starch check and age was additionally seen in the clear cut investigation (underestimation/precise estimation/overestimation). While thinking about the degree of instruction, the proportion of all out starch include was fundamentally more precise in those with optional training (Grade 6-10) than in those with tertiary training; this was additionally freely watched for proportions got for Breakfast and Snacks. Larger part of guardians (43.5%, $n=78$) fluctuated among under-and overestimation for singular dinners; 16.56% precisely assessed all suppers ($n=32$); the equalization, 39.8% ($n=74$), either reliably thought little of or overestimated all the dinners.

3.3. Sugar Counting and Diabetes

Guardians of youngsters with diabetes for ≤ 3 years evaluated the starch check more precisely than those with span > 3 years ($p=0.041$). Nonetheless, this distinction was not freely watched for singular meal (Breakfast, Lunch, Dinner, and Snacks). So also, in the straight out examination, those with "exact" estimation of the sugar tally (Total, Breakfast, and Snacks just) had a lower mean span of diabetes in contrast with those with "underestimation" and "overestimation". The complete starch tally proportion was essentially more exact in guardians of youngsters with and HbA1c level $\leq 7.4\%$ than in those with HbA1c $> 8.6\%$.

DISCUSSION:

Our outcomes show that better parental information on sugar counting was related with improved glycaemic control, while underestimation of starches was related to a higher HbA1c. A few individual investigations have additionally noted comparative perceptions among youngsters.¹⁰

It appears to be essential for both parents and kids to consistently rehearse sugar checking under the direction of human services experts and suitable instructive materials to keep up the precision of estimation after some time.¹¹

We likewise note the nearness of imperfect glycaemic control in the current examination populace (mean HbA1c, 8.26%), with just 19.78% ($n=35$) of the investigation populace accomplishing an HbA1c estimation of $< 7.48\%$. Insufficient information with respect to sugar checking and supper arranging could be one of the contributory foundations for poorer glycaemic control watched.

CONCLUSION:

The general information on starch considering as a real part of guardians was deficient. Better information was related with improved glycaemic control in the kids and lower frequency of hypoglycaemic scenes. We additionally watched a converse relationship among information and span of diabetes. Our tested kids with moderately ineffectively controlled T1D and guardians were generally from a center level financial foundation; consequently our discoveries should be additionally reinforced by affirmation in more various populaces.

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