

Abstracts

address this has become vital. Adverse child behaviour, in terms of low physical activity and high sedentary time, has increased alongside rates of over-weight and obesity. However, research on these aspects of physical health is limited in young children.

Methods 275 5-year-old children from the ROLO Kids study were included in this study. Parental-reported physical activity levels were collected using the CLASS questionnaire along with information on screen time. Child anthropometry including height, weight, circumferences and skinfold thickness were collected, along with heart rate and blood pressure. T-tests, Mann-Whitney U, and Chi-square tests were used to compare the participants and linear regression models were used to control for confounders.

Results Male 5-year olds spent more time in vigorous physical activity and in front of a screen than females ($P < 0.05$). 37.5% of the cohort were not meeting the WHO physical activity guidelines of more than one hour per day and 73.4% were exceeding the AAP guidelines for screen time of less than one hour per day. After controlling for confounders, vigorous physical activity was positively associated with child weight and BMI, while screen time was positively associated with waist to height ratio ($P < 0.05$). Those meeting the guidelines for screen time also had reduced waist to height ratio ($P < 0.05$).

Conclusion Three quarters of the cohort exceeded recommendations for screen time, which, as these findings indicate, could have a detrimental impact on body composition. Further research is required in this area to expand on the importance of physical activity and screen time in 5-year old children.

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THE INCIDENCE OF MACROSOMIA IS HIGHER IN A COHORT OF CHILDREN ATTENDING A WEIGHT MANAGEMENT CLINIC

¹Claire O'Hagan, ¹Sophie Sharpe*, ²Sinead Murphy. ¹University College Dublin, Dublin, Ireland; ²Temple Street Children's University Hospital, Dublin, Ireland

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Introduction Childhood obesity is a rapidly growing issue worldwide today. As of 2017, in Ireland at least 1 in 5 children are overweight or obese.¹ Studies have suggested that macrosomic infants are at increased risk of developing childhood obesity.² Fetal macrosomia is defined as a birthweight >4000 g.³ The 2014 Irish census revealed that 15.39% of babies were born >4000 g,⁴ however, international data has cited rates as low as 7.5%.

Aim To determine whether a cohort of children attending a paediatric weight management clinic had a higher incidence of macrosomia at birth compared against the national average.

Method A retrospective cohort study design examining patients that had attended a weight management programme in Temple Street Children's University Hospital from January to December 2016 and observing the presence of macrosomia at birth.

Results Out of 135 patients, 28 were recorded as having a birth weight >4000 g (20.7%). From these 28 patients, 19 were grade 1, 7 were grade 2 and 2 were grade 3. 17 were male (60.7%) and 11 were female (39.3%).

Conclusion There is a higher incidence of macrosomia in patients with a BMI >98th percentile attending a weight

management clinic than in the national average (20.7% vs 15.39%).

Discussion Our result implies association between macrosomia and childhood obesity. By expanding the cohort to include children attending a weight management programme over more than one year, this would strengthen the accuracy of our results. By selecting a cohort from one year of the programme, the sample size was limited to 230 people. Additionally, this observational study was dependent on birth weight recordings in patient charts which was subject to recall bias.

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RELATIONSHIP BETWEEN TSH LEVEL AND CARDIOMETABOLIC RISK FACTORS IN OVERWEIGHT AND OBESE TURKISH ADOLESCENTS

¹Aslı Okbay Güneş*, ²Müjgan Alıkaşifoğlu, ³Ethem Erginöz, ⁴Selmin Köse, ¹Emre Çelik, ⁵Oya Ercan. ¹Istanbul University-Cerrahpaşa, Department of Pediatrics, Istanbul, Turkey; ²Istanbul University-Cerrahpaşa, Department of Pediatrics, Division of Adolescent Medicine, Istanbul, Turkey; ³Istanbul University-Cerrahpaşa, Department of Public Health, Istanbul, Turkey; ⁴Istanbul Bilim University, School of Health, Istanbul, Turkey; ⁵Istanbul University-Cerrahpaşa, Department of Pediatrics, Division of Adolescent Medicine and Endocrinology, Istanbul, Turkey

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Objectives Among obese children TSH levels have been noted to be higher than normal weight children and, in some studies high TSH levels were found to be associated with cardiometabolic risk factors. The aim of this study was to investigate the relationship between TSH levels and cardiometabolic risk factors in obese and overweight adolescents.

Methods We performed a retrospective cross-sectional analysis of the data from 343 overweight or obese adolescents 11–18 years of age who were evaluated in our clinic from January 2012 to December 2015. Hypertension, dyslipidemia, hyperinsulinemia, hyperglycaemia and insulin resistance were defined as cardiometabolic risk factors. Patients' TSH and free T4 levels were recorded and only those subjects whose free T4 was normal were included in the study. For statistical analysis, Spearman correlation test and linear logistic regression analysis were used.

Results Among 343 adolescents; 25.1% were overweight, and 74.9% were obese. In the study group, the mean age was 14.03 ± 1.76 years and 59.8% of the subjects were girls. The SDS-BMI was in median 2.4 ± 0.64 . A significant positive correlation was found between TSH level and HOMA-IR, insulin and triglyceride levels ($P = 0.001, 0.001, 0.006$, respectively). In the linear regression analysis in which age, gender and BMI-SDS values were taken as co-variates, a 10% increase in the geometric mean of TSH was associated with 0.13 fold

increase in HOMA-IR and a 10% increase in TSH level was associated with one fold increase in geometric mean of insulin level ($P = 0.003$, 0.002 , respectively), but the relationship between TSH and triglyceride levels disappeared.

Conclusion TSH level was found related to the glucose metabolism in overweight and obese adolescents. Further prospective studies are needed to clarify the mechanism of this relationship.

P524 FUNCTIONAL DISORDERS OF THE COLON IN ADOLESCENTS WITH OBESITY: ASSESSMENT OF QUALITY OF LIFE AND PHYSICAL ACTIVITY

Anastasiya Romanitsa, Lyubov Rychkova*. Scientific Centre for Family Health and Human Reproduction Problems, Irkutsk, Russian Federation

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Introduction A child's quality of life (QL) is an integral characteristic of physical, psychological and social functioning of a child, based on self-perception and/or other peoples' perception. Obesity affects the QL and often leads to development of comorbid diseases, disabilities and invalidity. The majority of people with obesity face difficulties integrating in the society due to poorer health, physical limitations or psychological issues.

The aim To characterize the change in QL and physical activity (PA) in adolescents with obesity and functional disorders of the colon (FDC).

Materials and methods We examined 111 adolescents with obesity: 64 girls and 47 boys (mean age 14.5 ± 2.0 years), from 2016 to 2018. The main group included 73 adolescents with obesity, who suffered from irritable bowel syndrome (IBS). The second group included adolescents with obesity and other FDC, the third group comprised adolescents with obesity without FDC. All children underwent the questionnaire survey to establish their QL and PA (PAQ-C and PAQ-A 10–17; PedsQL-4.0). Statistical processing of results was conducted with Statistica 10.0, Windows. Difference was significant at $P < 0.05$.

Results The majority of adolescents with obesity are children with FDC (86.5%): functional diarrhea 15.6% and constipation 5.2%, nonspecific bowel disorders 3.1%, and IBS 76.1%, (among them: IBS with constipation – 65.8%, with diarrhea – 13.7% mixed type – 20.5%). FA of children 1 and 2 groups (1.99 ± 0.56), in the 3rd group (2.46 ± 0.82). According to the PedsQ questionnaire for adolescents, group 1 had significantly lower total scores of QL compared to the group 2 ($P = 0.03$), and group 3 ($P < 0.00$), statistically significant differences were achieved mainly due to a decrease in emotional functioning ($P = 0.0003$) and social functioning ($P = 0.002$).

The percentage of QL in children with other FDC (group 2) is lower compared to group 3 ($P < 0.01$), but higher than in the group of adolescents with IBS ($P = 0.002$).

Conclusions Every 6th obese adolescent has FDCs (86.5%), among which IBS is most common - 76.1%. Definitely, QL of adolescents with obesity without FDC is higher than among adolescents with FDC (QL decrease is associated with IBS), mainly due to a decrease in emotional and social functioning. When assessing the relative frequency of changes in QL in children with FDC, significant towards a decrease in school

functioning. Obese adolescents with FDC have a 1.2 times lower PA than obese adolescents without FDC.

P525 HOW HIGH IS THE BMI? OVERCOMING THE BARRIERS TO ADDRESSING OBESITY IN THE PAEDIATRIC OUTPATIENT POPULATION

Rhiannon McBay-Doherty*, Eamonn Sweeney, Karen Orr, Bernadette O'Connor, Mugilan Anandarajan, Anne-Marie McClean. Ulster Hospital Dundonald, Belfast, UK

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Background Childhood obesity negatively impacts physical health, mental wellbeing and shortens life expectancy. A 2017 audit of 87 children attending our district hospital's outpatient clinics (OPC) and rapid response unit (RRU) revealed: 15% of children were obese and 13% were overweight. 86% of overweight/obese children did not have their unhealthy weight addressed by a healthcare professional. Focus groups and questionnaires indicated staff often felt underprepared and apprehensive about addressing childhood obesity. Staff sometimes found it difficult to recognise if a child was overweight from raw height/weight data.

Aims To increase childhood obesity recognition by ensuring that 50% of children will have Body Mass Index (BMI) calculated and plotted and to maintain this practice.

To increase staff knowledge, willingness and confidence to address childhood obesity with families.

Methods IHI QI methodology was used to introduce BMI plotting to RRUs & OPC; beginning in October 2017. A multidisciplinary team including dieticians, physiotherapists, psychologists, nurses and doctors was established. Plan-Do-Study-Act cycles introduced practical changes including I-pads with an app for calculating BMI centiles. Staff received motivational interviewing training to have these crucial conversations with families. Staff and parent feedback were collected through questionnaires.

Results BMI plotting was successfully introduced; going from a median of 0%–100% for both OPC and RRUs and increasing the recognition of overweight/obese children to 100% by 3 months. At 12 months; BMI plotting in OPC was 60%; higher than our initial aim but showing room for improvement. 100% of staff who attended multidisciplinary training 'agreed'/'strongly agreed' that it improved their willingness, confidence and preparedness to address obesity with families. At 12 months after intervention, 67% of overweight and obese children who had their BMI plotted had their weight concerns addressed during their outpatient appointment. 100% of 27 parents who provided feedback were supportive of the project and 100% stated that doctors have a duty to raise obesity with families.

Conclusions This QI project has shown that introducing routine BMI plotting and providing staff with training to address obesity with families improves the recognition and response to children who are overweight/obese. We shared our innovative practice by hosting a regional paediatric obesity awareness day for all Northern Irish healthcare professionals; this included a motivational interviewing training session for all staff. Parents share our vision that all overweight/obese children are recognised and supported by healthcare professionals to achieve a healthier weight.