

# 22nd

## International Association for Adolescent Health (IAAH) European Regional Conference

Joint Event:

15th STATE OF THE ART  
Panhellenic Adolescent Health /  
Medicine Congress

Youth Development  
Challenges in the  
post-COVID-19 era

National &  
Kapodistrian University  
of Athens  
Athens, Greece  
October 5th-7th, 2022

*Virtual attendance will be available*



### Abstract Book



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## Youth Development Challenges in the post-COVID-19 era

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ΠΑΙΔΙΚΗΣ  
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& ADOLESCENT  
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Awareness for childhood and adolescent cancer



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Chapter HJ-38 Phalereus

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## **ORAL PRESENTATIONS 1**

**Thursday, October 6<sup>th</sup>, 18:00-19:00 | Great Hall/Main Hall**

### SCHOOL HEALTH

#### **1. Piloting a combined model of Socio-Emotional Learning and Peer Support against bullying in Greek Primary and Secondary Schools: The ENABLE Program**

**Papamichalaki E., Tzavela E., Richardson C., Babalis Th., Psaltopoulou Th., Tsitsika A.**

*MSc in Strategies of Developmental and Adolescent Health, School of Medicine, National and Kapodistrian, University of Athens*

#### **Abstract**

The ENABLE program is a European intervention designed to increase student emotional resilience and management of social relationships. The present study aimed to investigate the effectiveness of social and emotional learning (SEL) and a combination of SEL with peer support in a sample of 508 Greek early adolescents, between the ages of 11 to 14 by means of anonymous self-report questionnaires. Assessments were conducted prior to and after the 3-month piloting of the intervention, and indicated that overall students had high baseline social and emotional skills, as well as prosocial attitudes regarding bullying. The intervention improved problem-solving skills, and increased school satisfaction, as well as self-control and emotional awareness. After the intervention, students were more likely to report that they would seek help or report situations of bullying. Overall, this was the first study combining SEL with peer support in Greek primary and secondary schools, with promising results for the combined effectiveness of the programs.

*Keywords: bullying, intervention, peer support, early adolescents*

### CHRONIC DISEASES

#### **2. The effect of Covid-19 restrictions on the lives of children and youth with disabilities and their caregivers**

**Alexandros Kolovakis, Eleni Panagouli, Theodoros Sergeantanis, Artemis Tsitsika**

*MSc Program "Strategies of Developmental and Adolescent Health", School of Medicine, National and Kapodistrian University of Athens, Greece*

#### **Abstract**

**BACKGROUND:** COVID-19 pandemic along with the lockdowns and restrictions imposed, has strongly disrupted the lives of children with disabilities and their caregivers.

**AIM:** The aim of this study was to identify the long-term effects of the COVID-19 restrictions on the well-being of the children and youth with disabilities and their caregivers in Greece.

**METHODS:** Following a cross-sectional study design, an online survey was developed and diffused in Greece from April to May 2022, addressing to the parents and/or primary caregivers of children with disabilities aged 2 to 18 in Greece.

**RESULTS:** A total of 100 responses were collected and analyzed. 78% and 18% of the responders were mothers and fathers respectively. The children (mean age  $9.4 \pm 4.4$  years) were mostly diagnosed with specific or pervasive developmental disorder (29%), cerebral palsy (28%) or a genetic disorder (18%). A negative impact on their daily lives due to the restrictions was noted by the 77% of the caregivers, while 62% had difficulty in balancing work and parental responsibilities. Almost half of them reported deterioration in mental and physical health. Most frequent changes in children behavior were increased screen time (81%) and decreased physical activity (54%), while 57% of them had no contact with other children. Comparing the deterioration of the child's medical condition scores, there was significant difference ( $p < .05$ ) in scores between the children with higher stress levels (68%), greater routine disruption (79%) and higher health threat (44%) and the other children.

**CONCLUSION:** These findings highlighted the changes in the daily lives of the children with disabilities and their caregivers during the COVID-19 lockdown in Greece. The new reality in everyday life and education due to the pandemic burdened the existing conditions, especially in this group. Further research about the impact of COVID-19 in this high-risk population is needed.

*Keywords: COVID-19 restrictions; caregivers; children with disabilities*

## CHRONIC DISEASES

### 3. Lower well-being in young people with physical-mental multimorbidity: a population-based study

Ena Lindhart Thomsen<sup>1</sup>, Kirsten Arntz Boisen<sup>2</sup>, Sanne Ellegård Jørgensen<sup>3</sup>, Anette Andersen<sup>2</sup>, Grete Teilmann<sup>5</sup>, Susan Ishøy Michelsen<sup>6</sup>

<sup>1</sup>Department of Pediatrics and Adolescent Medicine, Copenhagen University Hospital, Denmark, <sup>2</sup>Department of Pediatrics and Adolescent Medicine, Copenhagen University Hospital, Denmark,

<sup>3</sup> National Institute of Public Health, University of Southern Denmark, Denmark,

<sup>4</sup> Steno Diabetes Center Aarhus, Aarhus University Hospital, Denmark.

<sup>5</sup> Department for Children and Adolescents, Nordsjællands Hospital, Denmark,

<sup>6</sup> National Institute of Public Health, University of Southern Denmark, Denmark

#### Abstract

**BACKGROUND:** Young people (YP) living with a chronic physical condition are at increased risk of mental/psychiatric comorbidity. However, little is known regarding YP with physical-mental multimorbidity.

**PURPOSE:** This study aimed to examine well-being, health behavior and youth life among YP with physical-mental multimorbidity and whether they differ from YP with physical or mental conditions, respectively.

**METHODS:** The population included a subsample of 3.671 YP reported having a physical, mental or both physical and mental condition, from a nationwide Danish school-based survey. Wellbeing was measured by the five-item World Health Organization Well-Being Index and the Cantril Ladder on life satisfaction. Health behavior and youth life were evaluated in seven domains: Home, Education, Activities, Drugs, Sleep, Sex and Self-harm/Suicide according to the HEADS anamnesis. We performed descriptive statistics and multilevel logistic regression analysis.

**RESULTS:** Compared to YP with physical-mental multimorbidity, YP with physical conditions had lower odds ratio (OR) 0.38 (0.32-0.46) for reporting low well-being and higher odds for reporting high life satisfaction, OR 2.98 (2.49-3.57), while YP with a mental condition only had significantly higher odds for reporting high life satisfaction, OR 1.38 (1.12-1.71). YP with physical-mental multimorbidity had significant higher odds of psychosocial challenges and health risk behavior in most of the HEADS domains when compared to YP with physical conditions. In addition, a significant larger percentage of YP with physical-mental multimorbidity had conflicts with parents (34.2% vs. 28.8%), slept poorly (44.6% vs. 27.9%), experienced loneliness (23.3% vs. 17.0%), were self-harming (63.1% vs. 50.5%) and had suicide thoughts (54.2% vs. 45.2%) compared to YP with mental conditions.

**CONCLUSIONS:** In most HEADS domains YP with physical-mental multimorbidity reported lower odds for well-being and higher odds for challenges. Thus, this is an especially vulnerable patient group and systematic screening for multimorbidity, and psychosocial well-being is needed in all healthcare settings.

## PUBLIC HEALTH

### 4. Understanding health inequalities experienced by young people aged 10-25 in the UK context

Rachael McKeown, Ann Hagell

*Association for Young People's Health, Association for Young People's Health.*

## Abstract

**OBJECTIVE:** Health inequalities faced by young people are the avoidable and unfair differences in physical and mental health outcomes. They are caused by economic and social differences that influence the conditions in which young people live, learn, work and socialise. Young people's developmental and life stages makes them particularly sensitive to changes in their environment, providing an opportunity to improve or worsen inequalities in health.

**METHODS:** To better understand the scale of young people's health inequalities in the UK, we reviewed publicly available data sources to compile relevant data available by deprivation and the 10-25 age range. We also conducted some original data analysis by cross-referencing health data available at the Local Authority level against the Index of Multiple Deprivation. We present new insights on the inequalities in adolescent mortality and care experienced young people.

**RESULTS:** A total of 43 data charts are divided into three sections – drivers of inequality, levers for action, health outcomes – which derive from an earlier conceptual model of health inequality (McKeown & Hagell, 2021). The data show worrying trends. Young people living in the most deprived areas die earlier compared to those in richer areas and live 18 more years in ill health. There is a 16.6% gap between obesity rates in 10-11 year olds in the most and least deprived areas. Young people living in the most deprived areas are 2.7 times more likely to become pregnant, 2.5 times more likely to have dental decay, 1.7 times more likely to be diagnosed with an STI and 1.3 times more likely to have a mental health problem.

**CONCLUSIONS:** Data can be harnessed to highlight specific areas where health inequalities are of particular concern, helping to target resources and action for ensuring that all young people have the best possible health outcomes.

## CHRONIC DISEASES

### 5. Transition readiness among adolescents with a chronic condition and their parents: a cross-sectional international study

Anna Tornivuori<sup>1</sup>, Mira Kallio<sup>2</sup>, Evelyn Culnane<sup>3</sup>, Sanna Salanterä<sup>1</sup>, Susan Sawyer<sup>3</sup>, Silja Kosola<sup>3</sup>

<sup>1</sup>University of Turku,

<sup>2</sup> Pediatric Research Center, New Children's Hospital, Helsinki, Finland,

<sup>3</sup> Department of Adolescent Medicine, The Royal Children's Hospital Melbourne, Australia

## Abstract

**BACKGROUND:** Transition of care from pediatric to adult oriented services can be challenging for adolescents with a chronic condition.

**OBJECTIVES:** To evaluate transition readiness and assessing correlations on age and anxiety in adolescents with chronic conditions. To compare perceptions of adolescents and their parents regarding self-management and readiness.

**DESIGN:** A cross-sectional study, part of a prospective observational study conducted in Finland and Australia. Data collected between September 2017 - August 2020 from New Children's Hospital, Helsinki, Finland and The Royal Children's Hospital Melbourne, Australia. Participants were adolescents 15-23 years with a chronic medical condition and parents.

**METHODS:** Surveys were administered six months prior to transfer of care. Age at diagnosis was collected as self-reports. Age at transfer was defined by the response date on questionnaires. Transition readiness was measured by the Am I ON TRAC? for Adult Care Questionnaire. Anxiety was measured by the State-Trait Anxiety Inventory short form. Associations were explored using Spearman's correlation. Agreement on health self-management and readiness were compared in adolescent/parent dyads.

**RESULTS:** Surveys were obtained from 412 adolescents and 315 parents. Adolescent Transition readiness knowledge and behavior ( $r = .62$ , CI 95 % .563-.682,  $p < .001$ ) correlated. Duration of condition ( $r = .19$ , CI 95 % .100-279,  $p < .002$ ) and age at transfer of care ( $r = .29$ , CI 95 % .110-.369,  $p < .001$ ) were correlated with transition readiness knowledge. Knowledge and behavior contributed to lower levels of anxiety. Adolescents were less anxious than their parents. Adolescent/ parent dyads mostly agreed on health self-management and transition readiness issues.

**CONCLUSIONS:** Age at the time of transfer of care was weakly associated with transition readiness knowledge and behavior. Transition readiness should be determined by assessment of knowledge, self-management and psychosocial skills instead of age alone.

#### DIGITAL LITERACY

### **6. Design strategies for the development of mHealth services in healthcare of adolescents with cancer**

**Amanta Karpathaki, Anna Sargianou**

*MSc in Strategies of Developmental and Adolescent Health, School of Medicine, National and Kapodistrian University of Athens*

#### **Abstract**

Adolescents with a cancer diagnosis are a population that seem to have particular needs for support and treatment due to the significant physical, cognitive, and emotional changes that take place during this developmental stage. The usage of portable and accessible technology interventions has proved feasible in addressing health-related issues. Adolescents may benefit from mobile health (mHealth) interventions in behalf of their intrinsic ability to use modern technological devices, a fact that underlies the necessity of integrating such interventions into medical practices and public health strategies. After reviewing 31 articles, it seems that well-developed mHealth tools have the ability to increase the user's long-term compliance with the received intervention. In order to boost patients' involvement for the primary goal of behavioral change, mHealth interventions appear to commonly include theories such as Behavior Change Theory, User Centered Design, Social Marketing Theory, Social Cognitive Theory, Self-Determination Theory and Narrative Transportation Theory. The above mentioned theoretical structures incorporate strategies intending to engage the user such as rewards, developmentally accepted content, personalisation, patient feedback, variety content, time-appropriate intervention delivery, multimedia provision, ease to use and therapeutically designed games, elements that could be included in mHealth services, being used by adolescents with cancer in their everyday care. The theoretical framework and the engaging components correspondingly present some drawbacks, which are analyzed at the end of this study along with some directions for future research with the aim of optimizing the design in mHealth services suitable for adolescents with cancer.

*Keywords: mobile health, adolescents, young adults, cancer, application design, engagement*

## **ORAL PRESENTATIONS 2**

**Thursday, October 6th, 10:30-11:30 | “Alkis Argyriadis” Amphitheatre/Hall A**

SCHOOL HEALTH

### **7. School-Based Sex Education among Adolescents Worldwide: Interventions for the Prevention of Sexually Transmitted Infections and Unintended Pregnancies. A Systematic Review.**

**Alexandra Vaina <sup>1</sup>, Pantelis Perdikaris <sup>2</sup>,**

*<sup>1</sup>MSc National and Kapodistrian University of Athens, MSc Karolinska Institutet*

*<sup>2</sup>Assistant Professor of Pediatric Nursing, Department of Nursing, Faculty of Health Sciences, University of Peloponnese*

#### **Abstract**

Adolescents are at high risk of exposure to sexually transmitted infections (STIs), and unintended pregnancies and school is one of the most appropriate environments for interventions to promote Sexual and Reproductive Health (SRH). This systematic review aims to investigate and evaluate the results of sex education interventions aimed at preventing STIs and unintended pregnancies, performed on adolescents in school settings worldwide. The search for the scientific articles lasted from 15/3/2021 to 30/04/2021, following the PRISMA guidelines. The inclusion criteria for the studies constituted to be randomized control trials, including interventions that aim to prevent STIs and unintended pregnancies, conducted within a school environment among adolescent students aged 10-19 years old. The studies should have been published from 01/01/2016 to 30/04/2021, in English or Greek language. A total of 2952 articles were found through the chosen databases, of which 24 were eventually included in the final systematic review. A total of 59055 students participated in these 24 controlled randomized trials, conducted in 13 countries, which implemented 13 different types of interventions. More than half of the studies (54.17%) reported a clear method of randomization. A total of 15 studies (62.5%) reported precision of the estimate of the intervention or treatment effect, expressed by 95% confidence intervals. The strength of evidence was estimated at 45.83% of the studies at level I, while the rest of them were at level II. Reporting of outcome measurement and statistical methods was adequate in the majority of the studies. Our findings suggest that school interventions for STIs and unintended pregnancy prevention, are crucial for the improvement of adolescents' SRH. The findings also show positive results regarding the improvement of adolescents' knowledge and attitudes. Future studies should investigate more the effectiveness of the corresponding and similar programs. Last, school nurses play a significant role in school-based sex education and their involvement in corresponding research and interventions is highly suggested.

*Keywords: adolescents, sexual education, sexually transmitted diseases, sexually transmitted infections, unintended pregnancies, school-based intervention.*

OTHER

### **8. COVID-19 pandemic effect on puberty timing: a systematic review**

**Serbis Anastasios,<sup>1,2</sup> Christoforidis Athanasios,<sup>3</sup> Ntzani Evangelia<sup>4</sup>, Galli-Tsinopoulou Assimina<sup>1,5</sup>**

*<sup>1</sup> Postgraduate Course on Adolescent Medicine and Adolescent Health Care, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece*

*<sup>2</sup> Child Health Department, Faculty of Medicine, School of Health Sciences, University of Ioannina, Ioannina, Greece*

*<sup>3</sup> 1<sup>st</sup> Department of Paediatrics, Ippokration General Hospital, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece*

*<sup>4</sup> Department of Hygiene and Epidemiology, School of Medicine, University of Ioannina, Ioannina, Greece*

*<sup>5</sup> 2<sup>nd</sup> Department of Paediatrics, AHEPA University General Hospital, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece*

## Abstract

**INTRODUCTION:** During the two years of COVID-19 pandemic, a rise in cases of precocious puberty and rapidly progressive puberty in girls has been reported from several countries around the world. In order to estimate the extent of this observation, as well as possible related causes, a systematic review of the relevant literature was undertaken.

**MATERIALS AND METHODS:** All relevant literature in various languages till May 21, 2022 was assessed using PubMed and Cochrane databases. In total, 13 papers were identified of which, 11 were selected for the analysis.

**RESULTS:** All 11 papers confirmed an increase in the incidence of precocious puberty in girls but not in boys. In addition, in 3 studies, a rapidly progressive puberty was documented either through more advanced Tanner stage or through more advanced laboratory and/or imaging studies at diagnosis. None of the studies reported data on precocious menarche. Regarding possible causes, higher weight and increased adipose tissue were identified in 3/11 studies, a more sedentary lifestyle in 1/11, and a longer screen time in 2/11. In addition, 2/11 studies showed that girls with precocious puberty had worse sleep habits. Notably, none of the studies found an increased incidence of previous or concurrent SARS-CoV-2 infection in girls with precocious puberty.

**CONCLUSION:** The current systematic review shows that precocious and rapidly progressing puberty is on the rise in girls since the beginning of COVID-19 pandemic. Further studies are needed to identify which of the factors that are epidemiologically determined to be associated with this phenomenon, are directly implicated in its pathogenesis.

## MENTAL HEALTH

### 9. Strategies for enhancing the implementation of an Australian school-based mental health prevention program: Realist evaluation

Rachel Baffsky<sup>1</sup>, Rebecca Ivers<sup>1</sup>, Patricia Cullen<sup>1</sup>, Michelle Torok<sup>2</sup>.

<sup>1</sup>University of New South Wales,

<sup>2</sup>Black Dog Institute

## Abstract

**INTRODUCTION:** The COVID-19 pandemic has exacerbated existing risks for mental health challenges among children and adolescents. The United Nations has issued a call to action for schools to deliver evidence-based programs to address this mental health burden, however there are often barriers to implementation in real-world settings. There is a need for implementation scientists to develop and trial strategies to address this translational problem.

**METHODS:** In this qualitative study, we used realist interviews and focus group discussions with educational staff (N=29) and performed a realist evaluation of a multicomponent implementation strategy called PAX Plus, co-designed to enhance the adoption of international evidence-based mental health prevention program, PAX Good Behaviour Game, in New South Wales primary schools.

**RESULTS:** The PAX Plus strategies consistently reported to improve implementation outcomes were having a recognition system for positive reinforcement, leadership support through monthly meetings, training, and distributing support resources. Strategies that did not appear to work but could potentially be reformatted were monitoring progress using self-report methods, distributing e-newsletters with practical tips and having an online peer learning network.

**CONCLUSION:** Internationally, school-based practitioners can use findings from this study to develop/adapt their own strategies to improve the implementation outcomes of mental health prevention programs which will improve effectiveness outcomes for children and adolescents. Improving the effectiveness of early mental health prevention programs is a priority to address Sustainable Development Goal 3.4, to reduce premature death from non-communicable diseases by one third by 2030. The study also highlights the benefits of public health researchers taking a multidisciplinary approach to co-designing strategies with educational staff to improve the uptake, feasibility and acceptability of school-based programs.

**TRIAL REGISTRATION:** Australian New Zealand Clinical Trials Registry, ACTRN12621001125819. Registered 23 August 2021 (version 1) – Retrospectively registered.



## 10. Evaluation of the Effect of Beverage Consumption on Serum N-Terminal Telopeptide and Osteocalcin in Adolescent Age Group

Eda Uluman, Alkım Öden Akman, Murat Kızılgün, Halil İbrahim Yakut

Ankara City Hospital

### Abstract

Most of the total mass of bones is formed during the first few years of life and puberty. Lifestyle and diet are important for maximum bone mass. Beverage consumption is important for bone health because of the calcium, caffeine and other substances they contain. Bone markers such as osteocalcin and N-terminal telopeptide can be useful for the bone health in children and adolescents.

**MATERIALS AND METHODS:** This was a prospective cross-sectional case series in 70 outpatients in Ankara, Turkey. Subjects included 12-17 years old with pubertal stage Tanner 2-5. Calcium, phosphorus, alkaline phosphatase of the patients were normal, vitamin D levels were above 15 ng/ml. N-terminal telopeptide and osteocalcin were evaluated as markers of bone health

**RESULTS:** Participants in the study were asked about their beverage consumption habits. The amount of calcium and caffeine taken daily with drinks was calculated. Average daily calcium intake with beverages was 145 mg (min 0- max 406 mg), and average daily caffeine intake was 110 mg (min 0- max 528 mg). The mean of osteocalcin was 4.8 ng/ml (min 0.24-max 11.88). The mean of NTX was  $39.7 \pm 8.1$  ng/ml (min 17- max 66.5 ng/ml). No significant difference was found between osteocalcin and NTX for both genders. There was a positive correlation between caffeine intake and NTX ( $r=0,290$ ;  $p=0,015$ ). A significant correlation was found between body mass index and osteocalcin. There was no statistically significant correlation between body mass index and NTX.

**CONCLUSION:** Calcium and caffeine taken with beverages may affect bone health in adolescence. In our study, NTX, a biomarker of resorption, was significantly higher in patients with high daily caffeine intake with beverages. In the light of our data, it is important to inform about healthy beverage consumption, which is one of the important environmental factors affecting bone development, and to raise awareness of healthy consumption in the early period, together with larger-scale studies.

Key words: *osteocalcin, N-terminal telopeptide, bone health, beverage consumption*

## 11. Physical Activity in Adolescents with Congenital Bleeding Diathesis

Anna Patsourou<sup>1</sup>, Marina Economou<sup>1</sup>, Ioannis Ghelsis<sup>1</sup>, Emmanouil Hatzipantelis<sup>2</sup>, Efthymios Samoladas<sup>3</sup>, Assimina Galli-Tsinopoulou<sup>2</sup>

<sup>1</sup>*1<sup>st</sup> Pediatric Department, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece*

<sup>2</sup>*2<sup>nd</sup> Pediatric Department, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece*

<sup>3</sup>*2<sup>nd</sup> Orthopedic Department, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece*

### Abstract

**AIM:** To assess physical activity participation in adolescents with congenital bleeding diathesis.

**SAMPLE AND METHODS:** An observational study was conducted at the Bleeding Disorders' Center for Children and Adolescents. Due to limitations enforced by the COVID 19 pandemic, patients presenting at the Outpatient Clinics (therefore, participating in the study) were those with the severest bleeding diathesis i.e. hemophilia. Hence, all study patients were boys. Data collected included demographics, disease type/severity, clinical and laboratory parameters

- including Hemophilia Joint Health Score and joint ultrasound-, treatment regimen, type/frequency of sport, family's perspectives, as well as availability of public sporting facilities in the patient's place of residence.

**RESULTS:** During a 12month period, 24 patients aged 11-18 years were evaluated. In total, 50% presented with severe, 33.3% with moderate and 16.7% with mild hemophilia. Records showed obesity in 7/22 and signs of chronic hemophilic arthropathy in 6/.... With regards to physical activity, only 33.3% reported regular participation in sports, while the vast majority reported non-regular/mild activity such as school gym class participation and common outdoor playing with peers. In the regularly exercised group 8.3% participated in low-risk, 20.8% low-medium risk and 37.5% medium-high risk sports. Type of sport was decided based on both personal preference and patient's/family's ability to adhere to required prophylactic regimen. In 2 cases personal preference was not supported by family, while in 4 cases absence of participation was attributed to lack of public facilities in the place of residence.

**CONCLUSION:** Given the major physical and psychological health problems linked to inactivity, even more so in patients with hemophilia that already present with an impaired musculoskeletal system resulting from their disease, this study highlights the importance of continuing education on the advantages of regular exercise – not only to patients and their families, but also the Social Welfare Services.

## PUBLIC HEALTH

### **12. A novel approach in determining SUD status in an unlabeled dataset through cross-national comparison**

**Nikolaos G. Angelopoulos**<sup>1</sup>

<sup>1</sup> *Center for Adolescent Medicine and UNESCO chair on Adolescent Health Care, First Department of Pediatrics, National and Kapodistrian University of Athens, Greece*

#### **Abstract**

The purpose of this study was to outline a methodology for determining the SUD diagnosis status of participants in the 2019 Greek counterpart of the ESPAD, a nationally representative school-based survey on substance use trends of high-school students. For the cross-national comparison, publicly available data on 10th - 12th grade US students from the 2019 NSDUH were acquired. The NSDUH includes questions on the criteria for a SUD diagnosis, so the SUD status is calculated for each participant. First, we manually identified the identical questions between the two surveys (hereinafter referred as items). The identical items from the US and Greek surveys were examined for DIF using a MIMIC model. Through the DIF analysis we could determine which items are associated differently with an unobservable variable (also referred as a latent trait), and thus should be excluded from the rest of the analysis. As a result, the remaining items not only are identical in their wording but are similarly correlated with a latent trait in participants of both countries. Using the non-DIF items on the labeled for SUD status NSDUH dataset, we trained a supervised machine learning (ML) model that uses the item responses as input and calculates as output the probability of a participant being SUD positive. By in-putting the ESPAD participants' answers to the ML model we finally determined the probability for each participant to meet the criteria for a SUD. Our aim using this methodology will be to use the new SUD labels on the ESPAD participants to aid in the designing and validation of a screening tool for SUD in adolescents in Greece. The present methodology could be used for labeling data through cross-national comparisons and enable the development of screening tools for populations where challenges of collecting new data are otherwise prohibiting.

*Keywords: Adolescent substance use; Substance Use Disorder (SUD); European School survey Project on Alcohol and other Drugs (ESPAD); National Survey on Drug Use and Health (NSDUH); Differential Item Functioning (DIF); Multiple Indicator Multiple Cause (MIMIC); Machine Learning.*

## **ORAL PRESENTATIONS 3**

**Thursday, October 6th, 18:00-19:30 | “Kostis Palamas” Hall/Hall B**

### **PUBLIC HEALTH**

#### **13. Differences in the prevalence of obesity based on the criteria IOTF, WHO and CDC in the adolescent population of Northwestern Greece**

**Eleni M. Domouzoglou<sup>1,2</sup>, Ekaterini Siomou<sup>1</sup>, Evangelia Ntzani<sup>3</sup>, Flora Bacopoulou<sup>4</sup>, Assimina Galli-Tsinopoulou<sup>2,5</sup>**

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<sup>5</sup> *2nd Department of Pediatrics, School of Medicine, Faculty of Health Sciences, Aristotle University Thessaloniki, Thessaloniki, Greece*

#### **Abstract**

**BACKGROUND:** Early diagnosis of obesity among adolescents is critical to prevent its severe effects on their overall health. Different criteria for the diagnosis of obesity in adolescents exist and they may lead to a variation of prevalence. We aimed to compare the prevalence of obesity as defined by the three most used International definitions by IOTF, CDC and WHO in adolescents of Northwestern Greece.

**METHODS:** Four hundred and three adolescents aged ten to seventeen years old, were included. Height (m) weight (kg) and BMI as weight (kg)/height<sup>2</sup> (m<sup>2</sup>) were measured by standard procedures. IOTF, CDC and WHO definitions for overweight and obesity were used. Cohen's kappa coefficient for the agreement between different criteria and Chi-Square test for statistical significance between comparisons were used. Bonferroni correction for multiple comparisons was applied.

**RESULTS:** The agreement between the three different definitions of overweight and obesity was full (WHO vs. CDC  $k=0.886$ , CDC vs. IOTF  $k=0.870$  and WHO vs. IOTF  $k=0.793$ ,  $p<0.001$ ) for all three evaluations. The comparisons between the different definitions showed a lower prevalence of obesity by IOTF (15.4%) than CDC (21.6%) and WHO (23.1%) (CDC vs. IOTF  $p=0.07$  and WHO vs. IOTF  $p=0.017$ ). Similar and more prominent were the results within the male population whereas among the girls no statistically significant difference between comparisons was found. A tendency for higher prevalence of overweight by IOTF compared to CDC ( $p=0.087$ ) in the overall population was also found. Cross-tabulation analysis indicated more children defined with normal BMI by IOTF in comparison to the other two definitions.

**CONCLUSIONS:** Application of IOTF criteria for the definition of obesity in Northwestern Greek adolescents may lead to reduced diagnosis compared to CDC and WHO criteria. Consequently, lower number of adolescents would receive care for obesity resulting in unfavorable outcomes in their overall health.

### **CHRONIC DISEASES**

#### **14. Impact of Obesity and its associated comorbidities in children and adolescents in India**

**Anita Pal, JV Madhusudan**

*University of Hyderabad*

## Abstract

**BACKGROUND:** Globally and in India, Non-communicable diseases are increasingly prevalent across all socio-economic strata and contribute a more significant proportion to premature mortality. This study examines the factors associated with overweight or obesity and their linkages to comorbidities among children and adolescents in India.

**METHODS:** We used data from the Comprehensive National Nutritional Survey (2016-18), conducted by the Ministry of health and family welfare. It is India's first-ever nationally representative nutrition survey of children and adolescents. Bivariate analysis, binary logistics, and multinomial logistic regression have been used.

**RESULTS:** The prevalence of obesity was 4.80 among children aged 5 to 19 years in India. It was significantly higher in ages 11-15 years, urban areas, children who belong to other than scheduled tribe/caste or other backward classes, and children who have consumed fried, junk, sweets, and aerated drinks. The prevalence of diabetes with fasting plasma glucose was less likely in females (ORs: 0.667; CI: 0.537-0.829). It was increasing with increasing age. The risk of high total cholesterol was more likely among overweight children and adolescents (ORs: 1.720; CI: 1.431-2.067), and females (ORs: 1.138; CI: 1.008-1.283). The high LDL cholesterol, low HDL cholesterol, and high serum triglycerides level were also found significantly associated with mother's schooling, place of residence, caste, children who consumed fried food, and wealth quintile. The risk of high serum creatinine was higher among overweight (ORs: 1.351; CI: 1.114-1.639), children who consumed junk foods (ORs: 1.246; CI: 1.059-1.466), and aerated drinks (ORs: 1.450; CI: 1.224-1.718). The prevalence of hypertension was less likely among females (ORs: 0.753; CI: 0.628-0.905). It was significantly associated with age.

**CONCLUSION:** Based on these results, overweight among children and adolescents is an emerging public health concern in developing countries. Therefore, the government should focus on preventing and treating obesity rather than just its associated comorbidities.

**KEYWORDS:** *Malnutrition, non-communicable disease, overweight, morbidity.*

## CHRONIC DISEASES

### 15. Energy balance in Polycystic Ovary Syndrome

**Styliani Geronikolou<sup>1</sup> and Flora Bacopoulou<sup>2</sup>**

<sup>1</sup>Clinical, Translational and Experimental Surgery Research Centre, Biomedical Research Foundation, of the Academy of Athens

<sup>2</sup>Center for Adolescent Medicine and UNESCO Chair on Adolescent Health Care, First Department of Pediatrics, School of Medicine, National and Kapodistrian University of Athens "Aghia Sophia" Children's Hospital

## Abstract

The Polycystic Ovary syndrome (PCOS) is a multisystem chronic disease of unknown aetiology. The current knowledge on energy balance contribution to the PCOS is poor, while the 50-70% of body's daily metabolism is being measured by Basal Metabolic Rate (BMR) - standing for the calories the body spends functioning at rest, in a neutral environment. We meta-analyzed the relative literature of three out of five case-control studies retrieved in PUBMED according to the PRISMA protocol and found weakened BMR in patients with PCOS: Hedge's g correction of Cohen d for small samples  $g = -0.1$  95% CI [-0.069, -0.551], and a noted heterogeneity ( $I^2 > 60\%$ )- relevant to the syndrome's entanglement. We may conclude that BMR regulates cell metabolism and inflammation and tends to decrease in PCOS patients. Indeed, even when BMR seems not to be significantly decreased (i.e, in the case of adolescents), it regulates the inflammation that is intertwined with the syndrome, as shown in previous analysis by our team ( $g = -0.829$  95% CI [-1.543, -0.115]). In our previous reports, the metabolic dominance was also inferred by a constructed molecular interactions network. Finally, if we summarize the syndrome effect on multiple systems we find a great but not significant increase in intima medial thickness and significant effect on endocrine and metabolism markers in

adolescents. Future research on PCOS should focus on metabolic pathways linked to atherosclerosis, thermoregulation and reproduction in systems, metabolomics and clinical level.

## CHRONIC DISEASES

### 16. The menstrual cycle and disorders of adolescents with congenital heart disease

Demet Aygun-Ari, Melis Pehlivanurk-Kizilkan, Aydin Adiguzel, İlker Ertugrul, Orhan

Derman, Tevfik Karagoz, Sinem Akgul

*Dr Sami Ulus Maternity and Children's Education and Research Hospital, Hacettepe University*

#### Abstract

**BACKGROUND:** Previous studies have shown menstrual problems such as delayed menarche and heavy bleeding to be common in individuals with congenital heart disease (CHD) due to the underlying disorder or the medication they take.

**OBJECTIVE:** We aimed to assess the menstrual cycle and disorders of adolescents with CHD.

**Methods:** Fifty-one patients, 13 with cyanotic CHD, 24 with acyanotic CHD, and 14 with arrhythmia who applied between December 2021 and May 2022 were included in the study. The control group consisted of 51 healthy females. A detailed menstrual history was obtained.

**RESULTS:** The mean age was  $16.16 \pm 2.61$  years in the study group and  $15.13 \pm 1.90$  years in the control group. Age at menarche [12.50 (IQR: 12-13) and 12 (IQR: 11-13) years, respectively;  $p=0.33$ ], length of menstrual cycle [30 (IQR: 29-30) and 30 (IQR: 28-32) days, respectively;  $p=0.97$ ], days of menstruation [6 (IQR: 5-7) and 6 (IQR: 5-7), respectively;  $p=0.63$ ], number of pads used per day [3 (IQR: 2-4) and 4 (IQR: 3-5), respectively;  $p=0.14$ ] and frequency of dysmenorrhea (48.8% and 51.2%, respectively;  $p=0.60$ ) was not different between the groups. Both premenstrual ( $p=0.04$ ) and menstrual symptoms ( $p=0.02$ ) were more common in the control group. The ratio of heavy bleeding was higher in the control group (3.9 % and 26%, respectively) ( $p=0.001$ ). Only 7 females in the control group and 12 patients in the study group consulted a doctor because of a menstrual problem ( $p=0.2$ ). None of the adolescents in the study used contraceptives.

**CONCLUSIONS:** Contrary to previous studies we found that age at menarche, menstrual duration, and menstrual pattern in adolescents with CHD were not different from healthy controls. However, patients with CHD may perceive menstrual symptoms as milder because of the severity of their symptoms due to their cardiac disease.

## CHRONIC DISEASES

### 17. Compliance of Type 1 Diabetes Adolescents to International Nutritional Guidelines: a Food-diary Based Study

Styliani Giza, Eleni Sakellari, Efthimia Efstratiou, Assimina Galli-Tsinopoulou

*Unit of Diabetes Mellitus of Children and Adolescents, 2nd Department of Paediatrics, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, AHEPA University General Hospital, Thessaloniki, Greece*

#### Abstract

**OBJECTIVES:** For adolescents with type 1 diabetes (T1D), healthy nutrition can set the stage for good dietary habits, playing a supportive role in diabetes management. However, physiological/psychological changes during adolescence may result in poor dietary habits and impaired metabolic control.

**GOAL:** To investigate the compliance of Greek T1D adolescent patients with international dietary guidelines for diabetes and its impact on metabolic control.

**METHODS:** A cross-sectional study including 54 T1D patients aged 11-18 years was conducted. Parents and adolescents completed a 3-day weighed food diary. Age, duration of diabetes, body mass index (BMI) z-score, glycated haemoglobin (HbA1c) were recorded. Food diary analysis for total energy (E), macronutrient and micronutrients intake (Athlisis software) and statistical analysis (IBM SPSS for Statistics 26.0 software) were performed.

**RESULTS:** Fifty four (67.2% male) T1D patients aged 15.0±2.1 years with a disease duration of 5.1±3.6 years, a BMI z-score of 0.4±0.89 and HbA1c of 7.1±1.0% were included. Adolescents' dietary intake was optimal in all macronutrients and micronutrients, expressed as %E intake, except for a marginal increase in total fat (35.4±3.7), saturated fat (10.4±1.8) and sodium (2828.7± 973.1), compared to the International Society for Pediatric and Adolescent Diabetes (ISPAD) Guidelines. Dividing patients according to optimal glycaemic control (HbA1c≤ 7%, n=26), the two groups did not differ significantly in macronutrient/micronutrient intake except for a tendency for increased fiber intake in those with HbA1c≤ 7% (p=0.06).

**CONCLUSIONS:** Greek adolescent T1D patients meet the nutritional recommendations of ISPAD. However, there is a need for further special advice focused on reduced total, saturated fat and sodium and increased fiber intake, inducing a better glycemic control.

## CHRONIC DISEASES

### 18. Thyroid Dysfunction and Possible Liver Injury Association in a Population of Obese and Severely Obese Children and Adolescents

S. Leka-Emiri<sup>1</sup>, A. Konidari<sup>2</sup>, F. Tzifi.<sup>2</sup>, K. Mihas<sup>3</sup>, E. Dikaiakou<sup>1</sup>, C. Evangelopoulou<sup>1</sup>, M. Kafetzi<sup>4</sup>, E. Vlachopapadopoulou<sup>1</sup>

<sup>1</sup> Division of Endocrinology-Growth and Development, "P&A KYRIAKOU" Children's Hospital, Athens, Greece

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<sup>3</sup> General Hospital of Kimi34003, Evia, Greece

<sup>4</sup> Division of Biochemistry-Hormonology, "P&A KYRIAKOU" Children's Hospital, Athens, Greece

#### Abstract

**BACKGROUND/AIMS:** Pediatric obesity is a global serious public health issue. The aim of this retrospective observational cohort study was to compare SGPT, TSH, FT4 values and insulin resistance markers amongst obese and severely obese children who attended our endocrinology clinic in a tertiary children's hospital over a period of ten years.

**METHODS:** 279 children (143 females) with Body Mass Index (BMI) ≥95<sup>th</sup> percentile (CDC BMI curves) were divided into two groups: Group 1, obese (95<sup>th</sup> percentile≤BMI<99<sup>th</sup> percentile) and Group 2, severely obese (BMI≥99<sup>th</sup> percentile). Age, gender, Tanner stages, BMI (Kg/m<sup>2</sup>), SGPT (mg/dl), TSH (μIU/ml) and FT4 (ng/dl) levels were recorded. Insulin resistance was defined as HOMA-IR≥ 2.5. Raised SGPT as marker of liver injury was considered if SGPT>22mg/dl for females and >26mg/dl for males. Thyroid dysfunction was defined as FT4<1ng/dl.

**RESULTS:** Group 2 were younger (p: 0.003) and had higher SGPT levels (p: 0.001) as compared to Group 1. Higher frequency of raised SGPT was observed in children with ft4<1 compared to subjects with ft4≥1 (53.3% vs 25%, p: .024). In univariate logistic regression the odds of having liver injury were predicted to increase 2.26 times for Group 2 compared to Group 1 (OR:2.26, p:0.004), 0.29 times (OR:0.29, p:0.024) for thyroid dysfunction (ft4<1 vs. ft4≥1) and 2.41 times (OR:2.41, p:0.003) for insulin resistance (Homa ≥2.5vs.< 2.5). No significant effect of gender or Tanner staging was found. After multivariate logistic regression, severe obesity and insulin resistance had a significantly positive effect on incidence of liver injury (OR: 2.37, 3.36, p:0.022, 0.007 respectively) while adjusting for ft4, age and gender.

**CONCLUSIONS:** In our cohort, Greek children with severe obesity had significantly raised SGPT values as compared to obese children. SGPT was significantly associated with severity of obesity and insulin resistance. FT4 did not emerge as an independent risk factor of liver injury.

OTHER

## 19. Heavy Menstrual Bleeding in Adolescents: a Single-Center Experience

Elif Tugce Aydin Goker, Fatma Gul Ersan, Melis Pehlivanurk Kizilkan, Sinem Akgul, Tekin Aksu, Selin Aytac, Orhan Derman, Ozlem Teksam

*Hacettepe University Faculty of Medicine, Department of Pediatrics*

### Abstract

**BACKGROUND AND AIMS:** Heavy menstrual bleeding (HMB) is defined as excessive, prolonged, or frequent menstrual blood loss, which impairs the quality of life. There is a lack of standardized management of HMB in adolescents. This study aims to define the prevalence and clinical features of common HMB causes and assess the treatment method preferred by clinicians according to the bleeding severity.

**PATIENTS AND METHODS:** Between 2010 and 2022, the electronic medical records of 250 adolescents with the ICD-10 codes of “heavy and frequent menstrual bleeding (N92) and “abnormal uterine and vaginal bleeding” (N93) were reviewed, and a final 172 adolescents were included in the study. Clinical, laboratory, and treatment data were analyzed.

**RESULTS:** The median age was 13.8 (IQR: 12.5-15.5) years, and the mean age of menarche was 12.1± 1.3 years. Hypothalamic-pituitary-ovarian (HPO) axis immaturity was diagnosed in 59.3%, polycystic ovary syndrome in 14.5%, and bleeding disorders (BD) in 14.5%. Patients with BD were diagnosed at an older age ( $p=0.033$ ), presented with lower hemoglobin (Hb) levels ( $p=0.008$ ), more frequently reported “heavy bleeding” ( $p=0.036$ ) and mucosal bleeding ( $p=0.001$ ), and more frequently required erythrocyte transfusion ( $p<0.001$ ). Patients with HPO-axis immaturity had lower BMI percentiles ( $p=0.017$ ) and more frequently experienced dysmenorrhea ( $p=0.034$ ). Of all patients, 40.7% were given only an iron replacement, 39.5% were given a standard dose of hormone therapy, and 19.8% required a tapering regimen. The duration of bleeding is the only significant parameter between the iron-only and standard-dose groups. However, for the tapering regimen group, the median Hb levels were lower, the menstruation duration was longer, and there were more frequent emergency department visits ( $p<0.001$ ).

**CONCLUSIONS:** Recognizing the underlying etiology, classifying bleeding severity, and the decision for the appropriate treatment may be challenging in adolescents with HMB. More objective parameters and standardized protocols are required for adolescents.

CHRONIC DISEASES

## 20. Disease control and psychiatric comorbidity among adolescents with chronic physical conditions

Mira Kallio<sup>1</sup>, Anna Tornivuori<sup>1</sup>, Päivi Miettinen<sup>1</sup>, Kaija-Leena Kolho<sup>1</sup>, Evelyn Culnane<sup>1</sup>, Susan Sawyer<sup>1</sup>, Silja Kosola<sup>2</sup>

<sup>1</sup> *The Royal Children’s Hospital, Melbourne*

<sup>2</sup> *Helsinki University Hospital and University of Helsinki.*

### Abstract

**OBJECTIVES:** To investigate disease control, psychiatric comorbidity, substance use and their possible associations in adolescents with chronic health conditions before transfer to adult health care.

**METHODS:** We collected clinical data from the year preceding transfer of care and psychiatric data from the records of our tertiary care Children's Hospital, Helsinki, Finland (population base 1.7 million). Participants were grouped into three disease and/or adherence control categories (good, some evidence of concern, poor). Participants completed the Adolescent's Substance Use Measurement questionnaire before transfer of care and were divided into four risk subgroups accordingly.

**RESULTS:** In total, 253 adolescents (mean age 17.3 years, SD 1.2) from six pediatric subspecialties participated in this study. Disease control and/or adherence was good in 28% (n=70), moderate in 42% (n=105) and poor in 30% (n=76) of participants during the last year before the transfer of care to adult health services. A quarter of participants had at least one adolescence psychiatric diagnosis. Adolescents with concomitant psychiatric diagnoses more often had poor disease control of their chronic physical condition than adolescents with only a physical condition (44% vs 26%; respectively; p=0.01). In total 10% (n=26) of the adolescents reported hazardous substance use, and this was more frequent among adolescents with than without a psychiatric comorbidity (19% vs. 8%; respectively; p=0.02).

**CONCLUSIONS:** Psychiatric comorbidity in transition-aged adolescents with chronic physical conditions is common and its negative association with disease control and substance use should be considered in the transition process to adult health care services.



## **ORAL PRESENTATIONS 4**

**Friday, October 7th, 18:00-19:00 | Great Hall / Main Hall**

SCHOOL HEALTH

### **21. Learning Gaps and their multileveled consequences**

**Eleni Livaniou**

*Department of Learning Difficulties, Special Diagnostic, Therapeutic and Research Unit 'Spyros Doxiadis' Greek Dyslexia Association, Member of the European Dyslexia Association*

#### **Abstract**

On September 2021, schools started thinking of 'normality'. Nobody considered the COVID-19 pandemic will have far-reaching consequences for years to come. The past 1½ year has caused significant disruption to the education system, and the swift nature of this change and the lack of knowledge, as well as skills for applying online teaching had been detrimental for schools and students. The impact of online teaching was even more pronounced for children with neurodevelopmental disorders. Recent research findings show the extent closures, social isolation, online teaching, economy and family issues affected both cognitively and emotionally children and teenagers. Yet, no government body took these findings on board. Schools started with the curriculum unchanged ! No support for students' transition from screen to live classroom, from Elementary to suddenly 2<sup>nd</sup> Year Gymnasium, from Kindergarten to 2<sup>nd</sup> Year Elementary ....

Students complain of inattention, poor concentration, poor memory, time-management issues, restlessness, anxiety, stress, loss of interest, fear and depressive thoughts. Parents and teachers are now desperate. Throughout the year they realised students' learning gaps – which reflect the difference between what students should have learned through a specific curriculum and what they learned through online teaching. Learning gaps in education are inevitable, as students don't learn at the same pace and there are also external factors that affect their performance. Yet, despite COVID, there was no attempt to bridging important 'gaps' - whether these concerned psychoemotional needs (involving biological and emotional development), socio-cognitive issues (involving the environment and social interaction), or the loss of knowledge (learning skills and motivation issues). This mix of factors increased learning gaps at individual, class, institutional, and state levels. However, there are solutions for closing these gaps. We propose ways and approaches that could be implemented by schools to address this reality and help students catch-up before it's too late.

SCHOOL HEALTH

### **22. The perceptions of sexual harassment among adolescents**

**Evanthia Sakellari<sup>1</sup>, Elina Kaitala<sup>2</sup>, Mari Berglund<sup>2</sup>, Claudia Mariana Juliao Bacatum<sup>3</sup>, Jose Edmundo Xavier Furtado Sousa<sup>3</sup>, Laura Kubiliūtė<sup>4</sup>, Areti Lagiou<sup>1</sup>**

<sup>1</sup> Department of Public and Community Health, Laboratory of Hygiene and Epidemiology, University of West Attica, Greece

<sup>2</sup> Faculty of Health and Well-being, Turku University of Applied Sciences, Finland.

<sup>3</sup> Nursing Research, Innovation and Development Centre of Lisbon, Nursing School of Lisbon, Portugal.

<sup>4</sup> Klaipeda City Public Health Bureau, Lithuania

## Abstract

**BACKGROUND:** Sexual harassment is a crucial public health issue among adolescents. While there are many school-based sexual education programmes, little attention is given to sexual harassment. Moreover, these are often developed by professionals without the active involvement of adolescents with a participatory approach.

**AIM:** The aim of this study was to explore the perceptions that adolescents have about sexual harassment and how it could be prevented.

**METHODS:** This study is part of the Erasmus+ project “Prevention of Sexual Harassment in Secondary Schools - SHEHAP” (2020-1-FI01-KA201-066493). Four focus groups were conducted during an online “camp” in autumn 2021. They were facilitated by members of SHEHAP research team. Participants were secondary school students from Finland, Greece, Lithuania and Portugal. The qualitative data was analyzed using content analysis.

**RESULTS:** Concerning how participants perceive sexual harassment, the themes and subthemes that emerged are the following: Physically expressed sexual harassment (unwanted touching, physical violence, physical harassment); Verbally expressed sexual harassment (commenting, spreading rumours, joking, threatening, blaming); Virtually expressed sexual harassment (sending harmful material, texting); Violation of self-determination (actions without consent, unwanted sexual attention). The following environments were claimed by the participants that sexual harassment may take place: Virtual environment; School environment; Public environment; Familiar environment. Finally, in regards to the participants’ views on the prevention of sexual harassment, the following themes and subthemes emerged: Youth education (awareness, health education, open discussion; Adult education (for teachers and for parents); Support (professional, peer, family); official consequences (immediate action, discussion); health education methods (digital, books, movies, comics).

**CONCLUSION:** Adolescents provide useful perceptions about sexual harassment and its prevention which should be taken under consideration for the development of school-based programs.

## CHRONIC DISEASES

### 23. Transition to adulthood: changes in education and employment during the transition of care

Silja Kosola<sup>1</sup>, Evelyn Culnane<sup>2</sup>, Anna Tornivuori<sup>1</sup>, Mira Kallio<sup>1</sup>, Susan Sawyer<sup>2</sup>

<sup>1</sup>*Pediatric Research Center, New Children’s Hospital and University of Helsinki, Finland*

<sup>2</sup>*Royal Children’s Hospital, Melbourne, Australia*

## Abstract

**BACKGROUND:** Educational and employment transitions are powerful and dynamic determinants of health for adolescents and young adults (AYAs). Few longitudinal studies have assessed the educational and employment situation of AYAs with chronic conditions during the transition of healthcare.

**METHODS:** We recruited AYAs living with chronic conditions in Finland (n=253) and Australia (n=258) 6-12 months prior to their transfer from pediatric hospitals to adult health services. Participants completed surveys that assessed their educational and employment situation at baseline and after transfer of care circa one year later.

**RESULTS:** At baseline, Finnish AYAs were younger than the Australians (17.2 vs 18.4 years; p<0.001). At that time a minority of AYAs had completed schooling; more Australians were in tertiary education or not in education than Finnish AYAs (14% vs 1% and 18% vs 6%, respectively). Relatively high levels of satisfaction with education was apparent, with Finnish AYAs more often satisfied than Australians (95% vs 85%; p<0.001). At baseline, most Finnish and Australian AYAs were not working (86% vs 61%) although part-time employment was more common in Australian than Finnish AYAs (35% vs 13%; p<0.001). Still, more Finnish AYAs were satisfied with their employment situation than Australians (83% vs 64%; p<0.001). At follow up, most Finnish AYAs were still in secondary education (78%), while around half (53%) of Australian AYAs were studying at university. The proportion of AYAs not in any form of education increased in both countries (Finland 13%, Australia 27%) with reduced satisfaction with their educational situation. Part-time work became more common (Finland 21%, Australia 41%) and satisfaction with their employment situation increased in both countries.

**CONCLUSION:** Educational and employment transitions are dynamic during adolescence with somewhat different patterns evident by country. Given its significance for health, assessment of education and employment transitions should be considered by healthcare professionals during these years.

#### CHRONIC DISEASES

### **24. The effectiveness of novel E-Health applications for the management of obesity in childhood and adolescence during the COVID-19 outbreak in Greece**

**Diamanto Koutaki, George Paltoglou, Penio Kassari, Eleni Ramouzi, Ioanna Bacopoulou, Evangelia Charmandari**

*Division of Endocrinology, Metabolism and Diabetes, First Department of Pediatrics, National and Kapodistrian University of Athens Medical School, 'Aghia Sophia' Children's Hospital*

#### **Abstract**

**BACKGROUND:** The prevalence of childhood obesity has recently increased, particularly during the COVID-19 pandemic, which has led to lifestyle changes as a result of public health regulations and guidelines introduced by governments worldwide.

**OBJECTIVE:** To investigate the effectiveness of novel e-Health applications in addressing childhood obesity prior to and during the Covid-19 outbreak.

**PATIENTS AND METHODS:** The study was carried out as part of the four-year European project BigO (<http://bigoprogram.eu>, Horizon2020, No.727688). Eighty-six (n=86) overweight and obese children and adolescents (mean age±SE: 11.82±0.25 years; 49 males; 37 females) were studied prospectively for 1 year prior to the pandemic (non-Covid-19 group, n=50) and during the pandemic (Covid-19 group, n=36). The data collection system included the BigO technology platform, which interfaces with a Smartphone and Smartwatch, and records data on diet, sleep and exercise objectively for each patient. Participants used the BigO system for 4 weeks and wore the watch for specific periods during the week. Subsequently, they entered a personalized life-style intervention program for 4 months and used the system again for 4 weeks.

**RESULTS:** When determining improvement as reduction in BMI category, the program was successful in 36% in the non-Covid-19 versus 58.3% in the Covid-19 group. Body Mass Index (BMI), BMI z-score, insulin resistance indices (HOMA and QUICKI) decreased, and HDL concentrations increased at 12 months follow-up in both groups (p<0.01). BMI z-score at 12 months follow-up was significantly lower in the Covid-19, than in the non-Covid-19 group (p<0.05), as well as, blood pressure, γ-GT and insulin concentrations decreased only in the Covid-19 group.

**CONCLUSION:** Our results indicate better compliance with life-style interventions and improved cardiometabolic risk factors in the Covid-19 group. These novel e-health applications were effective at managing childhood obesity despite the implications and lifestyle changes owing to the Covid-19 pandemic.

#### CHRONIC DISEASES

### **25. Chronic conditions, subjective wellbeing, and risky sexual behavior among adolescents.**

**Nour Ibrahim, Christine Hassler, Jean Bouyer, Alexandra Rouquette, Catherine Jusselme, Hervé Lefèvre, Bruno Falissard, Caroline Barry**

*CESP, INSERM U1018*

#### **Abstract**

**PURPOSE:** This study aimed to clarify the relationship between suffering from a chronic condition (CC) and several types of risky sexual behavior (RSB) in adolescents. Our hypothesis was that subjective wellbeing mediates this relationship.

**METHODS:** We used data from a multicentric cross-sectional study carried out in 15,217 adolescents from 137 schools France. Logistic regression was used to assess the association between several types of RSB and CC in the 2,680

adolescents aged 17 years or more who reported sexual intercourse(s). Cox proportional hazards model was conducted to assess the association between CC and age at first sexual intercourse on the whole sample. Analyses were conducted separately by gender with and without adjustment for parents' education level, early menarche and subjective wellbeing (mother's and father's relationship, depression, perceived health status and liking school).

**RESULTS:** In boys, suffering from a CC was associated with higher risk of RSB both in univariate (OR: 1.58 [95% CI: 1.10-2.27]) and multivariate analysis (aOR: 1.62 [95% CI: 1.11-2.38]). In girls, there was a non-significant association between chronic condition and RSB in univariate analysis (OR: 1.30 [95% CI: 0.97-1.76]) that disappeared after adjustment on subjective wellbeing (aOR: 1.08 [95% CI: 0.78-1.49]). There was no association between CC and age at first sexual intercourse.

**CONCLUSIONS:** This study suggests that boys with chronic condition are more prone to engage in RSB than girls and that in girls subjective wellbeing mediates the relationship between CC and RSB.

## SCHOOL HEALTH

### 26. Experiences of professionals with student well-being during COVID-19 – Lessons learned for the post-pandemic period

Miranda Beck<sup>2</sup>, Nicola Gray<sup>2</sup>, Didier Jourdan<sup>2</sup>, Catherine Chabot<sup>2</sup>, Terje Andreas Eikemo<sup>1</sup>

<sup>1</sup>Centre for Global Health Inequalities Research (CHAIN), Department of Sociology and Political Science, Norwegian University of Science and Technology (NTNU), Trondheim, Norway,

<sup>2</sup>UNESCO Chair 'Global Health and Education', University of Huddersfield, UK

#### Abstract

**BACKGROUND:** To understand the impact of the pandemic, and contribute to the evidence-base to build healthy and resilient schools, the UNESCO Chair 'Global Health and Education' (GHE) undertook the 'Safe reopening of schools' study from January to October 2021. This abstract explores the consequences of school closures and infection control measures on student mental health and well-being during COVID-19 from the perspectives of health and education professionals.

**METHODOLOGY:** A multilingual online survey of global health and education professionals was promoted by the UNESCO Chair GHE and partners via email and social media. Survey respondents were invited to opt into a follow-up online interview. Qualitative analysis was undertaken of a relevant subset of free-text survey responses and interview transcripts from the combined English and French language dataset.

**RESULTS:** 103 survey responses from 26 countries/territories, and 10 semi-structured interviews with professionals from 10 countries/territories, were included in this analysis. According to these professionals, school closures and infection control measures during COVID-19 had negative consequences on student well-being. Online learning was cited as a driver for increased mental distress among most students, but a minority of students preferred it. Infection control measures were also experienced positively as an enabler to keep schools open, which could mitigate their perception as being restrictive.

**CONCLUSION:** Adolescent mental health issues in times of crisis are major. The study showed that professionals are aware of these issues and, in the field, are very creative in their efforts to improve student well-being. These findings support the need to explore alternatives to closing schools and transitioning to online learning during a crisis. Keeping schools open, with context-adapted infection control measures and empowered local education and health professionals, could limit adverse consequences for student well-being.

## **ORAL PRESENTATIONS 5**

**Friday, October 7th, 10:30-11:30 | “Alkis Argyriadis” Amphitheatre/Hall A**

CHRONIC DISEASES

### **27. Has intimate partner violence increased during Covid times: A prevalence study in rural Karnataka, India**

**Aishwarya**

*Karnataka Health Promotion Trust, Karnataka Health Promotion Trust*

#### **Abstract**

Literature documents that young girls internalize violence experienced at young ages and continue to be the victims of violence throughout their lives due to social and family pressure. India’s response to Gender Based Violence (GBV) is mostly focused on services for survivors that are clinical or legal in nature. Moreover, Demographic and Health Survey of India i.e. National Family Health survey (NFHS) is not able to capture how the internalisation of violence persists in the society. Studies from developed countries have shown that initiating violence prevention in the early years, working with young boys and girls would greatly contribute to reducing GBVs. Karnataka is one of the few states where domestic violence has increased from NFHS 4 (2015-16) to NFHS 5(2020-21). With limited studies on internalisation of violence in Indian context, this paper undertakes an analysis of prevalence and experiences of GBV in Karnataka with the purpose of understanding the nature and pattern of intimate partner violence. Face to face interviews were conducted for 1400 women in two age groups, 18-22 years and 23-29 years in Vijayapura district of Karnataka during the period of March 2021 till August 2021. This study was approved by a local ethics board and written informed consent obtained from all participants. The findings revealed that around 16% respondents revealed that episodes of violence has increased during lockdown mainly on account of unemployment. Around 19% faced sexual violence in the last 12 months which is almost double when referred to NFHS 5 data. Also, around 21% mentioned this to happen once or twice a month. Psychological violence (28%) was highest among all forms of violence. Effect on mental wellbeing of women was higher than physical wellbeing during Covid times. This study recommends to develop strategies to cope with mental health issues in unforeseen situations in life.

SCHOOL HEALTH

### **28. Resilience and loneliness of high school students in Greece**

**Filippos Papazis<sup>1</sup> & Flora Bacopoulou<sup>1</sup>**

*<sup>1</sup>Center for Adolescent Medicine and UNESCO Chair in Adolescent Health Care, First Department of Pediatrics, School of Medicine, National and Kapodistrian University of Athens, Aghia Sophia Children's Hospital*

#### **Abstract**

Adolescence is a developmental stage vulnerable to the onset of mental health problems. High levels of resilience can help teenagers manage stressful situations and recover from negative family and environmental impacts. The purpose of this research was to investigate the resilience and feelings of loneliness of high school students, in relation to sex, school performance and parental employment status. The sample consisted of 720 students, 380 boys and 340 girls, from Attica. The Resilience Scale as well as the Loneliness and Social Dissatisfaction Scale were used. The results of the research indicated that the higher the levels of resilience, the lower the levels of loneliness. Furthermore, the effect of sex was not evident on resilience levels and feelings of loneliness. On the other hand, school performance and parental employment status seemed to have significant effects on adolescents' resilience and feelings of loneliness. The development of resilience during adolescence will empower students to manage the challenges of

adolescence and unpleasant emotions such as loneliness. To develop adolescents' resilience, schools should implement mental health programs to enable students to cope with stressful situations during this transitional period of their lives.

Keywords: *resilience, loneliness, sex, school performance, parental employment status*

#### SCHOOL HEALTH

### **29. Homophobic Violence in Greek Secondary Education during Covid-19 Pandemic: a teachers' perspective**

L. Liodaki<sup>1,2</sup>, G. Koulierakis<sup>1</sup>

<sup>1</sup>*Department of Public Health Policy, School of Public Health, University of West Attica*

#### **Abstract**

**BACKGROUND:** The present study aims to investigate aspects of homophobic violence in secondary schools in Greece from a teachers' point of view.

**METHODS:** Between September 2021 and March 2022, we surveyed 453 Secondary Education teachers of multiple specialties and from various areas across Greece. The participants were asked to determine the frequency of incidents of various types of homophobic violence (verbal, psychological, physical and cyber-bullying) at their schools during the COVID-19 pandemic. They were also asked to self-evaluate their competencies in managing homophobic violence, based on their confidence in raising issues regarding gender identity or gender expression, sexual orientation and homophobic violence in the classroom, as well as particular training they have received on the topic. Finally, they were asked to describe their schools' strategy on prevention, recording and combating homophobic violence.

**RESULTS:** 52.8% of the participants reported that incidents of homophobic violence never happen to their school, while 36% mentioned that incidents take place once per month. The vast majority of the participants (81.6%) have not been trained in dealing with homophobic violence during their university studies, yet approximately one out of three have received post-degree training on the topic, during their own free time and upon their own initiative. Moreover, only 11% of the teachers reported that their school had a solid action plan to combat homophobic school violence, despite almost half of them report an at least once-per-month frequency of a homophobic violence incident of any type.

**CONCLUSIONS:** Homophobic violence in Greek secondary education seems to be a common phenomenon during the COVID-19 pandemic and the school community is not yet adequately prepared to systematically face it, something that can drastically affect the students' mental health and educational experience.

Keywords: *school violence, homophobia, LGBTQI+ adolescents, secondary education, teachers*

#### MENTAL HEALTH

### **30. Romantic relationships of adolescents and young people in Greece before, during and after the COVID-19 pandemic**

Rafailia Matziouni

*Medical School of Aristotle University of Thessaloniki*

#### **Abstract**

**BACKGROUND:** In Greece, coronavirus, social alienation and the sanitary meters outspread coronavirus may strongly affect adolescents and young adults' relationships. The research reviewed adolescent and young people's love and/or Platonic relationships and mental health, before, during and after social distancing strategies.

**METHODS:** On May 11, 2022, 180 youths took part in an intercession study in Greece and, particularly in Central Macedonia, completed a web-based questionnaire around their association, feelings and how they were affected by the COVID-19 outbreak and the quarantine. The review had questions about teen relationships and on-the-net, loving or sexual intercommunication prior to, throughout and after the limitation of social distancing. The researcher used pie charts to liken and quantify the responses of adolescents (ages 11-21) and youths (ages 21-24)

**RESULTS:** Two-thirds (77.7%) of young people-adolescents were in a romantic association throughout COVID-19, and 80.8% spent time in person with a partner prior to the onset of COVID-19. Also, 43.4% seemed to be having a relationship throughout the pandemic. Among those in a relationship, 45.7% were physically separated from their loved ones due to the imposed fines. Youth also have less personal time in person during the outbreak than before. Young adults were more likely to have personal time with their partners during the restrictions than adolescents. Most youths (50.3%) were not involved in sexting or online dating, before, during or after the pandemic. In addition, the majority mentioned that the lack of contact caused a lot of stress in their daily lives.

**CONCLUSIONS:** Adolescents and young adults continued to be actively involved in loving associations throughout COVID-19. Even though many mentioned physical distancing from their partners. Results indicate that adolescents and young adults pursue to need to obtain relationships education and mental health services during difficulties, such as the COVID-19 pandemic.

## PUBLIC HEALTH

### **31. Improving adolescent health care in Armenia: a qualitative exploration of the opinion of primary care practitioners and adolescents.**

**Marina Melkumova<sup>1</sup>, Yeva Movsesyan<sup>1</sup>, Sergey Sargsyan<sup>1</sup>, Vahe Krmoyan<sup>1</sup>, Pierre-Andre Michaud<sup>2</sup>**

<sup>1</sup>*Arabkir Medical Centre- Institute of Child and Adolescent Health*

<sup>2</sup>*University of Lausanne*

#### **Abstract**

**INTRODUCTION:** To assess and improve the current situation of adolescent health services and care in Armenia and develop comprehensive integrated models of adolescent health services in PHC facilities the Institute of Child and Adolescent Health at “Arabkir Medical Centre (the largest pediatric institution of Armenia) and UNFPA Country Office have engaged in a comprehensive analysis of the situation, with the support of the Ministry of health (MoH). Based on a review of available statistics, policies and practices as well as the opinion of stakeholders, the aim was to produce a series of policies and procedures to the MoH to be implemented.

**METHODS:** besides the analysis of existing documents, several in-depth structured interviews have been conducted with 34 health care-providers (family doctors, pediatricians and nurses) from urban and rural areas of Armenia. In addition, focus-group discussions with several groups of fourteen- and fifteen-year-old adolescents (N=83), as well as an on-line survey (N=53) have been set up. Informed consent was obtained from all participants.

**RESULTS:** according to the health care-providers, the main obstacle to improve the quality of services for adolescents include lack of time to establish good contact with adolescent because of the overload of other activities, particularly paper-work. The current arrangements of facilities are not satisfactory. There are gaps in provision of mental health services and psychological care in health units and schools. Adolescents stressed other problems such as a lack of trust and confidentiality, a lack of good communication, irrelevant working hours and queues in health facilities. They also believed that health units should be modernized and improved.

**CONCLUSION:** Dialogue between health-care providers and health care consumers is strongly required. Communication skills for primary health care providers should become an important part of pre and postgraduate trainings. The report of this assessment is currently discussed, and the Armenian MoH is ready to support the proposed suggestions.

### 32. The Effect of Applying Life Skills Training Program on Substance Abuse Behaviors of Male Preparatory Schools Students in Alexandria

Asmaa Mohammed Saad Khaled Asmaa Khaled, Faten Ezz El-Din Fikry Faten Fikry, Mahassen Ahmed Abdel-wahed Mahassen Abdel-wahed, Hanan Hosni Elsherbini Hanan Elsherbini

Community Health Nursing, Faculty of Nursing Alexandria University

#### Abstract:

**BACKGROUND:** Prevention and early intervention of substance abuse represent the most promising and appropriate ways to maximize adolescent's health and minimize the negative and serious consequences of such pervasive problem. Therefore, effective prevention strategies are critically important in community efforts to combat such problem.

**OBJECTIVE:** Identify the impact of applying preventive interventions on substance abuse behaviors of male preparatory schools students in Alexandria.

**SETTINGS:** The study was carried out at four governmental male preparatory schools representing two educational zones of Alexandria Governorate affiliated to the Ministry of Education. El-Montazah (Elbactoshy and El-Shaheed Hanafy Mahmoud), East (Esmael Elkabany and Mohamed Hafez). **SUBJECTS:** a) All students in the first and second grades in the previously selected schools were screened by using Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), they were 3493 students. b) **Thirty students** from those having mild or moderate substance abuse related risk were randomly selected from each school (total number was **120 students**).

**TOOLS:** Two tools were used for data collection. **The first tool** was Students' socio-demographic and health profile structured interview schedule. **The second tool** was Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). **The study had four phases.** The first was the assessment and preparatory phase where tool (II) was used to assess students' substance abuse behaviors, the second was the development phase while the third was the implantation phase and finally the fourth phase was the evaluation phase during which tool (II) was reused for immediate and 3 month and 6 month follow up evaluation.

**RESULTS:** results of the study implies that the total ASSIST mean score for smoking/substance use among study group students was significantly decreased from  $40.17 \pm 15.54$  before the program implementation phase to  $7.20 \pm 12.75$  immediately after the program implementation. Further reductions were reported in each of 3 and 6 months follow up assessment ( $3.92 \pm 10.28$  and  $2.21 \pm 1.39$  respectively).

**CONCLUSION:** The study concluded that the preventive interventions based on life skills training program were the most promising strategies for combating substance use among adolescents. **RECOMMENDATIONS:** Evidence based substance use preventive interventions like life skills training program must be rooted in school curriculum.

Keywords: *Substance Abuse, Adolescents, Life Skills, Prevention.*

### 33. Psychosocial Functioning of Primary Immune Deficient Adolescents During COVID-19 Pandemic

Ayşe Gül Güven<sup>1</sup>, Saliha Esenboğa<sup>1</sup>, Cihan Aslan<sup>1</sup>, Erdem Karabulut<sup>1</sup>, Melis Pehlivan Türk Kızıllan<sup>1</sup>, Sinem Akgül<sup>1</sup>, Nuray Kanbur<sup>1</sup>, Devrim Akdemir<sup>2</sup>, İlhan Tezcan<sup>3</sup>, Deniz Nazire Çağdaş Ayvaz<sup>3</sup>, Orhan Derman<sup>1</sup>

<sup>1</sup>Hacettepe University children hospital division of adolescent medicine

<sup>2</sup> Hacettepe University children hospital division of child and adolescent psychiatry

<sup>3</sup> Hacettepe University children hospital division of pediatric immunology



## Abstract

**INTRODUCTION:** There are limited studies investigating the psychiatric symptoms of adults with Primary Immune Deficiencies (PID) during the COVID-19 pandemic. Adolescents with PID are at risk for depression, anxiety, behavioral and emotional problems. To our knowledge this is the first study researching the impact of COVID-19 on the psychosocial functioning of adolescents with PID.

**MATERIALS AND METHODS:** Sixty-eight patients with PID and 45 healthy controls aged 10 to 17 years were recruited. Each patient was appointed to a severe or mild PID group by using a severity score calculated according to T-cell levels, immunoglobulin replacement and immunosuppressant/immunomodulator therapy. Both adolescents and their caregivers completed the Revised Child Anxiety and Depression Scale, Strengths and Difficulties Questionnaire and the COVID-19 Phobia Scale (C19P-S).

**RESULTS:** According to the parent-reported scores, control group had significantly higher conduct problem sub-scores than the severe PID group. In adolescent-reported scores, the control group had higher emotional symptoms than the severe PID group. Similarly, both parents and adolescents reported significantly lower depression and social phobia in the mild PID group compared to the controls. Scores of the C19P-S were not different between the groups.

**DISCUSSION:** Healthy adolescents had more elevated psychiatric symptoms and adolescents with PID did not have higher Coronaphobia than their healthy peers. Resilience is a construct that concerns an individual's capacity to respond positively to an adverse situation, even when these pose a potential risk to their health or development. The result of our study could be interpreted as these patients are more resilient due to their chronic disease. PID patients already live with the fear of infection, and COVID-19 precautions have been a part of their lifestyle, even before the pandemic. In this sense, COVID-19 may have caused a more devastating effect on the mental health of adolescents without a chronic disease.

## MENTAL HEALTH

### 34. A well-being landscape on Italian adolescents in the last decade: what is happening?

**Bersia M<sup>1,2</sup>, Charrier L<sup>1</sup>, Berchiolla P<sup>3</sup>, Comoretto R<sup>1</sup>, Dalmaso P<sup>1</sup>.**

<sup>1</sup> *Department of Public Health and Pediatrics, University of Torino, Italy*

<sup>2</sup> *Post Graduate School of Medical Statistics, University of Torino, Italy*

<sup>3</sup> *Department of Clinical and Biological Sciences, University of Torino, Italy*

## Abstract

**INTRODUCTION:** The Dual Factor Model (DFM) is a conceptualization of well-being as a multidimensional construct. Two conditions must be both satisfied in the DFM: the presence of well-being and the absence of mental illness.

**AIMS:** To apply the DMF of well-being to the Italian Health Behaviour in School-aged Children (HBSC) data from the 2010, 2014 and 2018 surveys.

**METHODS:** Representative samples of Italian students aged 11, 13, and 15 years old were recruited. A 0-10 cognitive continuous scale questioning life satisfaction (LS) was used as an indicator of well-being. A summary 0-16 continuous scale indicating psychological health complaints (PHC) was used as a proxy for mental illness. Recommended HBSC cut-offs were adopted to build the axes intersection of the DFM frame.

**RESULTS:** Results were based on over 165,000 students, equally distributed by age and gender. Our study showed that LS was overall steady from 2010 to 2018, while PHC increased: from 5.3 to 6.4 in 11 yrs olds, from 6.6 to 8.2 in 13 yrs olds, and from 7.5 to 9.1 in 15 years olds. According to the DFM, all gender and age groups shifted from a Flourishing situation (Complete Mental Health) towards a Struggling condition (Incomplete Mental Illness). In particular, a shifting from one to the other DFM condition was observed in 2014 and 2018, respectively, among 15 and 13 years old girls.

**CONCLUSIONS:** Our application of the DFM to the Italian HBSC data suggests a worrying situation:

the mental well-being of Italian adolescents shifted towards an Incomplete Mental Illness condition in the last decade. Further research is requested to investigate such impaired connection between psychophysical symptomatology and cognitive perception.

## E-POSTER PRESENTATIONS 1

Thursday, October 6th, 18:00-19:00 | "Alkis Argyriadis" Amphitheatre/Hall A

MENTAL HEALTH

### 1. Hazards of excessive gaming in adolescents

Paraskevi Lampropoulou<sup>1</sup>, Konstantinos Siomos<sup>2</sup>, Georgios Floros<sup>3</sup>, Nikos Christodoulou<sup>2</sup>.

<sup>1</sup>Aristotle University Medical School, Greece,

<sup>2</sup>University of Thessaly Medical School, Greece,

<sup>3</sup>2nd Department of Psychiatry, Aristotle University Medical School, Greece

#### Abstract

Hazardous Gaming is one of the most dangerous consequences of excessive gaming in children and adolescents. Especially the latter, who spend more and more time gaming and choose more aggressive or dangerous games in general. ICD-11 included Hazardous Gaming in the third session, related to behavioral problems. In this manuscript, the impact of Hazardous Gaming either in physical or in psychological health is presented. The initial search resulted in 194 studies and 7 from other searches, and we ended up with 11 by excluding inappropriate ones according to the inclusion criteria. The studies confirmed that gaming can cause physical health problems like musculoskeletal problems, sleep deprivation, thrombosis, sense organ diseases, inflammations, or even self- injuries and death. Furthermore, physical health problems also include bad general health condition, which is about nutrition and hygiene. As far as psychological health problems, the most important is Internet Gaming Disorder, which is also included in ICD-11 - 6c51. However the variety of these pathological cases, Hazardous Gaming has been little researched and there is no or little evidence about its risk factors, therapy or prevention. This study concludes that there should be future research in these fields and guidelines should be set.

MENTAL HEALTH

### 2. Co-occurrence of addiction disorders and ADHD in youth

Papanikolopoulos P.<sup>1</sup>, Samakouri M.<sup>2</sup>, Serdari A.<sup>3</sup>, Sorvatzioti D.<sup>4</sup>

<sup>1</sup>Child and Adolescent Psychiatrist, Mobile Mental Health Unit, University General Hospital of Alexandroupolis, Greece

<sup>2</sup>Professor of Psychiatry Democritus University of Thrace, Director of the University Psychiatric Clinic, Alexandroupolis University General Hospital, Greece

<sup>3</sup>Associate Professor of Child Psychiatry Democritus University of Thrace, Director of the University Child Psychiatry Clinic, University General Hospital of Alexandroupolis, Greece

<sup>4</sup>Associate Professor of Law, University of Nicosia, Cyprus

#### Abstract

**BACKGROUND:** Adolescence is a period of dramatic bio-developmental and psychosocial changes. At this specific period issues of mental health and high-risk behaviors emerge, such as the use of psychoactive substances. The need for a therapeutic strategy is imperative.

**PURPOSE:** This is quantitative research aimed at investigating the understanding of Attention Deficit Hyperactivity Disorder (ADHD) symptomatology in adolescents suffered from substance use disorder (SUB).

**MATERIAL:** Parents of 36 adolescents who followed recognized groups of therapeutic structures for adolescents in Greece, OKANA and KETHEA, "Atrapos" and "Strofi". The SNAP-IV questionnaire was distributed to parents of 36 adolescents.

**RESULTS:** 44.4% of adolescents met criteria of ADHD. Most frequent symptoms that reported were the inability to follow instructions and failure to focus on open schoolwork, chores or extras before starting substance use. These results are in line with the current literature that documents the relationship of ADHD and future cannabis use.

**CONCLUSIONS:** The findings of our study highlight the higher rates of ADHD symptomatology in youths involved with substance use. It is of great importance to schedule the treatment plan with interdisciplinarity, so as to reducing relapses.

MENTAL HEALTH

### **3. Development Of an Online Intervention Programme (EduMind) For Mental Health Promotion Among Youths**

**Hazwa Harith<sup>1</sup>, Nik Daliana Nik Farid<sup>1</sup>, 'Abqariyah Yahya<sup>1</sup>**

<sup>1</sup>*Social and Preventive Medicine Department, Faculty of Medicine, University of Malaya*

#### **Abstract**

Mental health problem is seen as an emerging public health threat. Youths are the most susceptible group due to several risk factors and the effects are exacerbated by the Covid-19 pandemic. Mental health needs to be intervened early to reduce progression to severe illness, however, due to numerous reasons such as stigma, service uptake remains low. The mobile mental health app is seen as a potential modality in reducing barriers in obtaining early interventions due to its many advantages such as privacy. Even with the numerous readily available mobile apps concerning mental health, there is a lacking evidenced based interventions and the integration of self-screening and personalized interventional modules. Therefore, the aim of this study is to enhance the interventional components of the current 2Heal app with engagements of Public Health experts and Psychologists. Additionally, the effectiveness of the newly developed modules would be measured in this study. This study would involve five phases, where there will be a usability testing of the current 2Heal interventional components, proceeding with a scoping review on suitable interventions for the newly developed components, collectively called the EduMind, and subsequently, development of EduMind interventional components. There will be a pilot study prior to the actual effectiveness study of the new interventional components. The main outcome would be the success of the EduMind, which will be presented with differences of mean scores using the screening tool. This study would also explore further robust, evidence-based interventional materials. To conclude, this current study may provide a more effective method in increasing the mental health service uptake and subsequently improve the mental health status of youths. However, its limitations of testing on university students may produce bias results hence, future studies among youths in the community would be needed to further explore on its effectiveness.

Keywords: *Mental health, youths, mobile app*

MENTAL HEALTH

### **4. Questionnaires designed to measure the psychosocial consequences of COVID-19 pandemic in European countries: A systematic review.**

**Karra Maria, Kiagia Vasileia, Eleni Panagouli, Theodoros Sergentanis, Artemis Tsitsika**

*MSc "Strategies of Developmental and Adolescent Health", School of Medicine, National and Kapodistrian University of Athens, Greece.*

#### **Abstract**

**INTRODUCTION:** Since December 2019, the existence of a new infectious disease, caused by the novel coronavirus SARS-CoV-2, has resulted in unprecedented circumstances for whole mankind. The pandemic caused by this new virus, as declared by world health organization, undoubtedly has tremendous aftermath not only for somatic health but also for mental health and well-being. The aim of this study was to present the questionnaires that have been developed and weighed in European countries considering the psychosocial consequences of the pandemic.

**METHODS:** A systematic review was conducted in databases such as Google Scholar, Pubmed and Science Direct. In order to include an article in the review the following criteria were met: the sample was from the general population

(no specific group), the questionnaires were new or there were adapted to measure covid-19 impact, were written in English language, were published in peer-reviewed journal, time of publication 2020 to 2022, the full-text was available, the method and results were described.

**RESULTS:** According to our search, several validation articles were written concerning evaluation tools, such as Fear Covid-19 Scale, Covid Burnout Scale, Phobia Scale, Coronavirus Anxiety Scale, Obsession with Covid-19 Scale, Covid-19 Peritraumatic distress Index, Covid-19 Anxiety Syndrome, Concern about Covid, Impact of Event scale etc. All articles listed the methods they used to ensure good validity and reliability of their questionnaire. Validity has to do with the extent to which a questionnaire measures the characteristics for which it was constructed.

**CONCLUSIONS:** In conclusion, global pandemic of Covid-19, brought unprecedented, unique challenges into humanity and mental health. A great variety of new questionnaires that measure the psychosocial effects of it has already been used and validated in European countries including Greece.

## PUBLIC HEALTH

### **5. Assessing COVID-19 vaccine hesitancy among adolescents in a multicultural setting using survey data and peer interviews**

**Krystelle Abalovi<sup>1</sup>, Sanya Dalal<sup>2</sup>, Kate Zinszer<sup>1</sup>, Britt McKinnon<sup>1</sup>**

<sup>1</sup>*University of Montreal*

<sup>2</sup>*McGill University*

#### **Abstract**

Our study focuses on two neighborhoods in Montreal, Canada with lower uptake of COVID-19 vaccination, particularly among children and adolescents. The objective was to identify factors associated with youth COVID-19 vaccination and explore how unvaccinated adolescents make their decisions about vaccination. Online surveys were completed by 315 high school students aged 14-17 between January and March 2022. This age cut-off was chosen because adolescents 14 and older do not require parental consent for vaccination in Quebec. The survey assessed knowledge and beliefs about COVID-19 vaccines, sources of information about vaccination, impacts of the pandemic on physical and mental health, and socio-demographic characteristics. Adolescent community researchers from the study neighbourhoods conducted 25 interviews with unvaccinated teenagers, on the same topics. Data were compared and analyzed using a convergent parallel mixed-methods approach. Approximately three in four adolescents who responded to the online questionnaire were adequately vaccinated (2+ doses). Survey participants who reported lacking trust in neighborhood residents, having a low sense of belonging to the province of Quebec, and those who self-identified as black were less likely to be adequately vaccinated. Unvaccinated adolescents expressed concerns about the safety and efficacy of the vaccine and 60% reported most of their friends and family were vaccinated. Various myths and half-truths about the vaccine's safety and efficacy influenced participants' decisions to remain unvaccinated, although most did not subscribe to conspiracy theories on social media. They consistently expressed a desire for clear and trustworthy information about the vaccine and COVID-19. This study sheds light on why a one-size-fits-all approach to vaccine promotion and mandates have not been embraced by many young people. It highlights adolescents' needs for autonomous and better-informed decision-making through COVID-19 recovery efforts and in future health crises.

## SCHOOL HEALTH

### **6. Adolescent mental health and covid-19 pandemic in 13 European and Asian countries.**

**Andre Sourander, Sonja Gilbert.**

*Turku University*

#### **Abstract**

There is an urgent need for methodologically sound studies that address the impact of the COVID-19 pandemic on the quality and quantity of psychiatric symptoms among adolescents and how different policies related to isolation,

lockdowns and school-closures have affected them. Empirical evidence of the impact of these measures on mental health of children and adolescents is still scarce and lacking completely in the cross-cultural context (Newlove-Delgado et al. 2021). International comparison of cross-sectional surveys increases the understanding of how mental health outcomes are associated with governmental policies in different countries. Further, repeated cross-sectional studies employing the same instruments, protocol and study sites in different time-points can help to understand the factors and reasons behind the changes. Such high quality research findings will guide the preparation for future pandemics and other crises (Wan Mohd Yunus et al. 2022). We will conduct a school survey on the upper secondary school / middle school to study psychosocial problems in the population regardless of service use using cross-sectional study design. The study include 13 European and Asian sites. The aim is to investigate changes in psychosocial wellbeing of children and adolescents aged 13-16 years from the time before the COVID-19 pandemic to the recovery phase of the pandemic.

#### DIGITAL LITERACY

### **7. A review of mobile health features for adolescents and young adults with cancer diagnosis.**

**Anna Sargianou, Amanta Karpathaki**

*MSc "Strategies of Developmental and Adolescent Health", School of Medicine, National and Kapodistrian University of Athens , Greece.*

#### **Abstract**

During adolescence, unique physical, cognitive, and psychosocial changes occur making this developmental stage extraordinary. Specifically, adolescents with cancer diagnoses are in need of special handling and treatment procedures. Electronic interventions for health-related problems present a radical development during the last years by dint of their easy and portable access. Adolescents seem to be digital natives having an intrinsic ability to utilize state-of-the-art services pointing out the urge to implement mobile health (mHealth) applications into public health practices. After reviewing 40 articles, it appears that mHealth interventions are able to overcome some of the barriers that occur throughout the therapeutic process in order to improve symptom management, treatment outcomes, and the overall adolescents' quality of life. MHealth interventions designed for adolescents and young adults patients with cancer could implement key features such as recording symptoms, improving communication with health care staff, promoting adherence to therapy, accessing valid sources of information, providing social support, and implementing training in the management of distressing symptoms. Finally, the present review indicates potential limitations, challenges and recommendations and a framework for further research identifying the necessity of incorporating all the aforementioned features in a mHealth application.

*Keywords: mobile health, mHealth, adolescents, young adults, cancer, application features*

#### OTHER

### **8. Implications of COVID-19, gendered technology and social norms on adolescent girls: a gender-based violence study among adolescent girls from rural south India**

**Ambuja Kowgi, Ashwini Pujar, Maithreyi Ravikumar, Satyanarayana Ramanaik,**

**Prakash Marpady, Sudeshna Dey , Harpreet Kaur, Apurva KH**

*Karnataka Health Promotion Trust, India*

#### **Abstract**

Digital technology-based learning was touted as a solution to minimize the disruptions in education during the COVID-19 pandemic without creating adequate institutional infrastructures. In India, adolescent girls from disadvantaged backgrounds face a slew of impediments and North Karnataka being challenged on many fronts, including development indices, adds to existing vulnerabilities. The coming together of technology, norms and COVID-19 adversely impacted the education of girls, as has been captured in emerging literature. Our study in North Karnataka revealed gendered access to smart-phone affects girls severely than boys. Issues of access were also related

to concerns around how technological access and girls' behaviors linked with concerns of girls' purity and chastity. In this regard, girls' smart-phone usage takes on much significance in the local cultural context and reinforces existing power dynamics between genders, generations, and the community. We conducted in-depth interviews (44) with adolescent girls, young women, parents and FGDs (8) with adolescent boys. Using thematic analysis, study revealed that the perception around this technology especially stems from the belief that providing smart-phone access to girls is a threat to family honour, and girls' sexual chastity. Since the onus of providing phone is on parents, they weighed in the economic constraints and normative scales tipped in favor of boys over girls. Inaccessible technology together with societal norms affected not just their continuing education but also their outcomes of life. The pandemic resulted in school drop-out, early entry into labor force, and early marriage. So technology as a purported solution to such crisis opened up questions on how 'genderized' smart phones' access is, lack of trust on and enabling environment for girls. As such relationship-based interventions at the family and community levels to build trust and increasing adolescent girls' agency through developing negotiations skills could facilitate improved ecosystem for adolescent girls.

## PUBLIC HEALTH

### **9. The 'shadow pandemic' and the violence trap: An assessment of intergenerational sustenance of violence among young women in rural India**

**Sudeshna Dey, Apuva K H, Maithreyi Ravikumar, Satyanarayana Ramanaik, .**  
*Karnataka Health Promotion Trust, India*

#### **Abstract**

Previous studies have shown distress caused by pandemic resulted in excessive violence against women, especially Intimate partner violence (IPV). Literature has established that layoffs, income loss and extended domestic stays due to stay-at-home orders are driving up the incidence of violence. However, there is no evidence on how pandemic reshapes intergenerational sustenance of violence and other factors which determines likelihood of IPV. With limited understanding on childhood experience (direct exposure) and/or witness (indirect exposure) of violence and their likelihood to experience IPV, we tried to assess how the association varies during distress time compared to lifetime. Therefore, this paper empirically investigated the impact of intergenerational, socio-economic, and demographic factors of IPV during COVID-19 shutdown and tried to identify the changes in the predictors of violence during pandemic and lifetime. A population-based violence against women (VAW) survey was conducted among 1400 young women aged 18-29 years between March and August 2021 in one of the vulnerable districts (Bijapur) in Karnataka, South India. Linear probability regression was conducted to assess factors associated with IPV during COVID and lifetime. We found prevalence of experiencing physical and/or sexual IPV during COVID (12.2%) was higher compared to lifetime (18.05%) IPV. This difference between the rates was tested and found significant, which implies vulnerability increased during pandemic. The findings revealed intergenerational persistence of violence remains key factor for IPV during pandemic, and direct childhood exposure to violence remains a significant factor. However, both direct and indirect exposure plays key role in explaining lifetime IPV. Other socioeconomic and demographic factors vary as well. Interestingly, education level of women and husbands are important determinants of violence during pandemic, however, they are insignificant for explaining lifetime IPV. Our study suggests certain policy changes and strategies required to address complex social and gender norms to reduce VAW, particularly during turbulent times.

## CHRONIC DISEASES

### **10. Evaluation of Greek version of the Pittsburgh Sleep Quality Index (PSQI) among Greek childhood cancer survivors.**

**Elissavet Koliouka<sup>1</sup>, Emmanouel Hatzipantelis<sup>2</sup>, Marina Economou<sup>3</sup>, Assimina Galli- Tsinopoulou<sup>2</sup>, Kiriaki Kotsoglanidou<sup>4</sup>, Evgenia Papakonstantinou- Athanasiadou<sup>4</sup>, Athanasios Tragiannidis<sup>2</sup>**

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<sup>4</sup> Paediatric Oncology Department, Ippokration General Hospital, Thessaloniki, Greece

## **Abstract**

**INTRODUCTION:** Malignant diseases are rare in childhood. The prognosis has significantly improved in recent years. However, paediatric cancer survivors experience early and late complications of treatment. According to the literature these also include sleep disorders. PSQI has been shown to be a reliable and easily applicable method for the evaluation of these disorders.

**AIM:** The aim of the study was to record sleep disorders in adolescent survivor having been diagnosed with malignant disease, after having completed their treatment.

**MATERIALS:** The study included 43 adolescent survivors, of whom 24 were boys and 19 girls.

**METHODS:** Patients and/or their parents, after written consent, completed the Greek version of Pittsburgh Sleep Quality Index (PSQI) questionnaire supplying information about the patient's sleep habits.

**RESULTS:** Sleep disorders were found in 41 of the 43 adolescents. However, there were no statistical significant differences with relevance to previous radiotherapy, corticosteroid use, gender, endocrine disorders, underlying disease, time-lapse from completion of treatment, and HSCT. The only parameter exhibiting statistically significant difference with respect to sleep disorders was older age at the time of observation ( $p = 0.031$ ). Also we should highlight a trend formed in the very small group of HSCT recipients. It appeared that HSCT did favor sleep disturbances.

**CONCLUSIONS:** Sleep disorders are common in adolescent cancer survivors. The increase in frequency appears to be related to older age.

## MENTAL HEALTH

### **11. Clinical treatment of eating disorders in the covid and post-covid era.**

**Pinelopi Papadopoulou, Lila Papadopoulou, Rea Drymioti, Apostolos Mermerelis, Ioanna Argyropoulou, Athanasios Ntanis, Sophia Serra, Aggeliki Mpravou, Rosa Stathopoulou, Dora Charitaki, Anna Fountzoula, Chrysa Daskalaki, Rafaela Makri**  
*Day Center for Eating Disorders "ANASA"*

#### **Abstract**

The Day Center "ANASA" is an outpatient clinic focused on clinical diagnosis and treatment in children, adolescents and adults with eating disorders (anorexia nervosa, bulimia nervosa and binge eating disorder). The Day Center offers psychotherapy (Psychodynamic psychotherapy, Systemic psychotherapy, Cognitive-behavioral psychotherapy), psychiatric follow-up, internal medicine follow-up and nutritional counseling. The therapeutic team consists of three psychiatrists, one child and adolescent psychiatrist, seven clinical psychologists, one internist and one clinical nutritionist.

Patients with eating disorders have difficulties in holding the therapeutic context. Absences, drop-outs and other cooperation problems can often emerge. The above issues became more complex during the quarantine and strengthened the need for flexible therapeutic interventions.

The aim of the oral presentation is to highlight the clinical task and vision of ANASA as well as to point out difficulties and challenges that the members of the diagnostic team have coped with in the covid and post-covid era.



## **12. No longer in the schoolyard: a comparative analysis among Mexico and Europe on the use of digital media to recruit minors for illicit activities.**

**David Ramírez Plascencia<sup>1</sup>, Rosa María Alonzo González<sup>2</sup>**

<sup>1</sup>*University of Guadalajara*

<sup>2</sup>*Autonomous University of Baja California*

### **Abstract**

The rising presence of digital media in people's daily lives has not only brought several benefits and advantages, but perils and risks as well. This is particularly critical among minors who are exposed to diverse threats online: from fraud, bullying, grooming, sexting, and in some cases, young ones are susceptible of being contacted on Internet and recruited by criminal gangs, extremist, and terrorist groups. This fact is not surprising since these organizations have been successful in introducing information technologies to improve their inner organization and achieve their goals: from the use of bitcoins for money-laundering and drones for surveillance to the incursion on social media for maximizing the impact of their activities and ideology. This technologization of the illicit organizations' activities has been particularly intriguing regarding the use of digital media to enroll minors, as it has happened in Mexico with Narco gangs using video games with chat support to incorporate new members or Jihadist groups recruiting minors in social media to commit terrorist acts in Europe. The aim of this research is to study how illicit organizations have incorporate digital media not just as a propaganda platform to spread their agenda but to enroll new members, particularly minors. What kind of strategies and discourses are employed by these groups to contact and convince children and young people to join them? As final outcomes will show, besides the evident different among these illegal associations such as ideology, objectives, and strategies, they have been successful incorporating digital media to improve their inner organization, maximize the media impact of their actions, and to approach and persuade minors to commit criminal acts. For that reason, is imperative not just to analysis their strategies but to set guidelines and actions to limit the exposure of young people to these perils online.

## E-POSTER PRESENTATIONS 2

Thursday, October 6th, 08:00-09:00 | “Kostis Palamas” Hall/Hall B

DEVELOPMENTAL HEALTH

### 13. Bariatric Surgery in Obese Adolescents

Isaak Sason<sup>1</sup>, Assimina Galli-Tsinopoulou<sup>2</sup>, Theodossis Papavramidis<sup>2</sup>

<sup>1</sup>Health Center of Makrakomi, Greece

<sup>2</sup>School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki

#### Abstract

Childhood obesity is a multifaceted disease that affects a child’s both physical and mental health. It is a complex condition, intertwined with biological, developmental, environmental, behavioral and genetic factors. It is also associated with an increased risk of chronic conditions, such as dyslipidemia and type 2 diabetes. Furthermore, childhood obesity is linked to mental disorders with a significant impact on young people’s quality of life. In most cases, changes in lifestyle and eating habits, as well as medication, lead to poor and short-term weight loss results. So far, bariatric surgery has shown promising results in the treatment of adult obesity, while it is also becoming more popular as a therapeutic option for children and adolescents. The purpose of this study is to conduct a thorough evaluation of the current literature in order to emphasize the benefits of bariatric surgery in adolescents as well as the complications associated with such an operation. In addition, this review will highlight the particularities of both the short-term and long-term postoperative course in cases of adolescents.

PUBLIC HEALTH

### 14. ‘Seroprevalence of HPV serotypes among male adolescents and young men’

Pardali<sup>1</sup>, A. Tsitsika<sup>1</sup>, N.F. Vlahos<sup>3</sup>, M. Tsoia<sup>1</sup>, E. Panagouli<sup>1</sup>, M. Koukouvitaki<sup>1</sup>, T.N. Sergentanis<sup>1,3</sup>

<sup>1</sup>MSc “Strategies of Developmental and Adolescent Health”, School of Medicine, National and Kapodistrian University of Athens, Greece

<sup>2</sup>2nd Department of Obstetrics and Gynecology, Aretaieion Hospital, National and Kapodistrian University of Athens, School of Medicine, Greece

<sup>3</sup>Department of Public Health Policies, University of West Attica, Athens, Greece

#### Abstract

**INTRODUCTION:** Research on seroprevalence of human papillomavirus (HPV) with respect to prophylactic vaccines for male adolescents and young men is critical for the prevention of HPV-related pathologies in male populations.

**OBJECTIVE:** To investigate the impact of HPV vaccinations on the prevalence of the various HPV serotypes on adolescent boys and young men through a systematic review.

**METHODOLOGY:** Articles were retrieved from PubMed using the keywords (HPV OR “human papilloma virus”) AND (adolescent OR teens) AND (serotypes OR types) AND (boys OR men OR male). According to the selection criteria, articles should include clinical studies in English up to 2021. Moreover, articles should concern randomly selected, non-high risk male participants aged 11-26 with no underlying pathologies or infections. Serotype identification should be performed by PCR on urine samples or anogenital swabs.

**RESULTS:** The search resulted in 18 eligible articles ranging from 2004 to 2021 among which 15 concerned unvaccinated and 3 included vaccinated adolescent boys and young men. In 4 articles the participants were homosexual/bisexual while in the rest of the publications the sexual orientation of participants was mixed or unspecified. In about half of the publications, the data collection predated the initiation of national HPV vaccination programs for girls in the respective countries. In the selected articles, the seroprevalence of HPV varied significantly depending on vaccination rates and various

## DEVELOPMENTAL HEALTH

### **15. Very Low and Low Birth Weight of children and appearance of ailments and neurodevelopmental disorders during childhood.**

**Aletras Charis<sup>1</sup>, Theodoros. N. Sergentanis<sup>2</sup>**

<sup>1</sup>MSc "Strategies of Developmental and Adolescent Health", School of Medicine, National and Kapodistrian University of Athens, Greece

<sup>2</sup>Assistant Professor of Epidemiology and Research Methodology, Department of Public Health Policies, University of West Attica, Athens, Greece

#### **Abstract**

Birth Weight is defined as the weight of the embryo or neonate immediately after birth. The very low and low birth weights are responsible for the appearance of a great number of ailments and neurodevelopmental disorders during childhood. The purpose of the particular review was the study of the relation between low birth weight and the appearance of disorders and ailments (after birth) during the childhood. For this purpose 61 studies were investigated including population based studies, cross sectional studies as well as systemic reviews and meta-analyses. The findings of this research showed that there is the possibility for children who have a very low birth weight (BW<1500 gr) or generally low birth weight (BW<2500gr) to develop many non - cancerous ailments and disorders that influence children throughout their developmental stages. In particular, some of them could be ailments related to metabolism of childhood such as cardiovascular ailments, high blood pressure, diabetes type 2, childhood asthma, wheezing disorders, feeding and swallowing disorders (dysphagia) and childhood osteoporosis. At the same time a significant number of developmental divergences such as autism, special learning difficulties, ADHD, cognitive and motor disorders, behavioral and emotional problems, psychiatric disorders as well as developmental disorders usually occur as a consequence of low birth weight (lower than 2500gr). Consequently, the prevention of risk factors that could have an impact on the birth of children with a diverging birth weight is of vital importance.

## CHRONIC DISEASES

### **16. Improving the comprehensive follow-up of adolescents with chronic diseases**

**Alice Gondallier<sup>1</sup>, Chantal Stheneur<sup>2</sup>, Mariana Marin<sup>3</sup>**

<sup>1</sup>Louis Mourier Hospital, Colombes, France,

<sup>2</sup>Université de Versailles Saint Quentin en Yvelines, France,

<sup>3</sup>Rives de Seine Hospital, Neuilly sur Seine, France.

#### **Abstract**

Chronic disease affects 20 % of adolescents. Living with a chronic disease during adolescence will disrupt its proper course. The chronic disease will have repercussions on all areas of the adolescent's life and adolescence will disrupt the balance and the follow-up of the disease. Taking into account the mutual impact of chronic disease and adolescence is a major challenge for specialty care pediatric units and helps preparing transition to adulthood. The global follow-up of adolescents with chronic diseases was studied in two pediatric specialty care departments (gastroenterology and visceral surgery). We analyzed the last 46 files of young people who had made their transition to adult medicine and 27 questionnaires completed by health professionals in the same departments. Biopsychosocial items are more often discussed orally than written in the files. Information about sexuality (especially for boys), substance use, mental health, and bullying is missing from most files. This information is addressed by half of the health professionals. More than 80% of health professionals believe that the global adolescent health knowledge improves the management of adolescents with chronic conditions. Few professionals are aware of and use checklists for the follow-up of these patients. A comprehensive approach and a well-prepared transition are the basis for the management of chronically ill adolescents. In specialized pediatric services, health professionals are committed to this comprehensive care. Although they are familiar with the various aspects of their patients' lives, they do not always

allow themselves to discuss certain subjects and, above all, to transcribe them into the medical record. The implementation of tools and their validation would be a precious help.

## MENTAL HEALTH

### **17. Siblings of children and adolescents with cancer**

**Eleni Vamvakopoulou, Georgia Pardalou**

*MSc "Strategies of Developmental and Adolescent Health", School of Medicine, National and Kapodistrian University of Athens, Greece.*

#### **Abstract**

Childhood cancer is predominant among pediatric illnesses as a potentially traumatic event that affects the psychosocial adjustment of the entire family. It constitutes a highly stressful experience not only for the sick child but for the parents and the healthy siblings as well. The structure of the family system is affected due to the numerous changes in daily life and the necessity for its members to adapt to new, unknown circumstances. Generally, family members experience intense fear and anxiety, while the appearance of cancer-related stressors increases conflicts between them. More specifically, healthy siblings' most common emotions include uncertainty, shock, anger, sadness, and jealousy. Pediatric cancer, apart from affecting the formation of their personality, can lead to chronic stressful consequences including a high risk of developing posttraumatic stress disorder. Changes also occur in siblings' school work and the dynamics of their interpersonal relationships meaning that fraternal and peer relationships might become stronger or weaker. It is worth mentioning, though, that in the long run some changes can lead to post-traumatic growth. In general, how siblings of children and adolescents with cancer comprehend and experience the disease differs depending on their developmental stage. Undoubtedly, in the case of the death of a brother or sister from cancer, the observed changes are many more and differ in type and duration. Although some of them may be temporary, other changes are long-term. Hence, because of the nature of the illness and the impending challenges, ongoing psychosocial support should be immediately offered to all family members to alleviate their unmet psychological needs. Specifically for siblings, essential support should be provided both during the disease and afterwards, in order to facilitate the way they tackle stressors and prevent their potential detrimental effects.

*Key words: childhood cancer; siblings; personal changes; social changes; grief; support*

## CHRONIC DISEASES

### **18. Fragility of gender norms and outcomes for adolescent girls in the times of COVID-19 pandemic:**

#### **Reflections on girls' empowerment programs from South India**

**Ashwini Pujar, Sudeshna Dey, Ambuja Kowgi, Harpreet Kaur, Apurva KH, Prakash**

**Marpady, Maithreyi R, Satyanarayana Ramanaik**

*Karnataka Health Promotion Trust*

#### **Abstract**

Across the world, the unprecedented COVID-19 unfolded a range of contextual challenges including exacerbation of existing inequalities, with adolescent girls being exposed to disruption of education, loss of family income, increased GBV instances, and early/child marriages. This research aims to understand the resilience of girl-leads-girl, a three-year empowerment intervention (*Sphoorthi*) between 2015 and 2018 involving adolescent girls, their families, and the community in a district of northern Karnataka, India. The study presents a mixed-method design consisting of 940 adolescent girls in a quantitative study and 32 FGDs with girls, parents, boys, and the community. Despite increasing evidence of forced early marriages of girls across India during COVID, girls in the intervention sites have been able to and sustain negotiation skill with their parents to postpone marriage, continue education through access to a

smartphone as a result of participating in 'Sphoorti' activities like life skill education, leadership camps, meeting, dialogue (*Samvada's*) with parents and community. Gender norms towards the usage of cell phones for girls are not lenient and viewed as 'spoiling life' and 'unbeneficial' and this precarious context concomitantly increased pressure on girls to take up labour work to compensate financial crisis which is habituated and sending them back to school was resisted. The economic impact of COVID has seen '*reversing progress*' on the part of parents who were earlier supportive of their daughters' aspirations but due to increased unemployment among the youth as many return back to their village, financial crisis, and peer influence. This reversal is, in a way, contributing to what we call 'fragility' among parents while at the same time, empowering adolescent girls and sustaining 'resilience' among them. The presentation will use this research data to discuss the intervention and implications for adolescent girls' programming in unanticipated contexts such as that the pandemic.

OTHER

## **19. An Exploration of Volunteering as a Path to Healthy Youth Development**

**Rehan Devanjith Meemaduma, Kartini Booso**

*University of West London*

### **Abstract**

Volunteering is commonly observed from the standpoint of the service recipient, and the effect it has on a volunteer's growth and development is often overlooked. Though quantitative studies, mixed method research, and surveys have explored the impact of volunteerism, very few look into its connection with healthy youth development. Furthermore, it has not received the academic attention it deserves in Sri Lanka, given that the country is globally ranked 1st in volunteer engagement. This qualitative study sought a psychosocial approach to explore and gain insight into the effects of volunteerism on the personal and social development of volunteers. Data collection was done through semi-structured interviews which were conducted on 6 (young adult) participants (F-4, M-2), with a minimal 2 years of experience volunteering at an educational or psychosocial setting. The data was analysed through interpretative phenomenological analysis, which took a hermeneutical stance to explore the lived experiences of volunteers. The analysis revealed two superordinate themes; the first, "journey of growth," emphasized the development through exposure to different realities and the discovering of career-related interests. The second, "acceptance, support, and validation," illustrated the importance of sociocultural influences on volunteerism. The findings of the study provided insight into multiple implications including the role of supervisors and volunteer organizations in facilitating a healthy volunteering experience, the significance of sociocultural beliefs and philosophical drives in volunteerism, and the possibility of using volunteering as a standardized youth development program.

Key words: *volunteerism, positive youth development, developmental assets model, interpretative phenomenological analysis*

CHRONIC DISEASES

## **20. The effect of physical activity on lipid profile and body composition in youth with**

### **T1D**

**Kaza Maria<sup>1</sup>, Tsentidis Charalambos<sup>2</sup>, Vlachopapadopoulou Elpis<sup>3</sup>, Sakou Ikboule<sup>1</sup>,  
Karanasios Spyridon<sup>1</sup>, Mastorakos George<sup>4</sup>, Karavanaki Kyriaki<sup>1</sup>.**

<sup>1</sup>*Diabetes and Metabolism Unit, 2nd Department of Pediatrics, National and Kapodistrian University of Athens, "P&A Kyriakou" Children's Hospital, Athens, Greece.*

<sup>2</sup>*Department of Endocrinology, Metabolism & Diabetes Mellitus, General Hospital of Nikaia - Piraeus "Agios Panteleimon",*

<sup>3</sup>*Department of Endocrinology Growth and Development, "P&A Kyriakou" Children's Hospital, Athens, Greece.*

<sup>4</sup>*Endocrine Unit, National and Kapodistrian University of Athens, "Aretaieion" Hospital, Athens, Greece.*

## Abstract

**INTRODUCTION:** Physical activity has a direct positive effect on glycaemic control by promoting insulin secretion from the pancreatic islet-cells and by an increase in skeletal muscle glucose uptake. The reduction of daily insulin needs and the optimization of glycaemic control improves T1D patients' quality of life, self-esteem, mental wellness and diabetes related morbidity and mortality.

**METHODS:** Eighty children with T1D [36 (45%) boys, age: mean±SD, 14.8±3.4 years] were included in this study. Mean±SD disease duration was 5.8±4 years, mean annual HbA1c:8.0±1.41. For the purpose of this study, participants' somatometric data were measured [height, weight, waist-circumference, body-mass-index (BMI), BMI z-score and waist-circumference to height ratio]. Muscle mass was calculated with biometric impedance scale (Tanita, Body Composition Analyzer, Type BC-418 MA). Physical activity was estimated for 1 week with the use of pedometers (Omron walking style IV) and with anonymous questionnaires, validated for Greek population (Augerinos et al). Fasting blood samples were obtained for white blood cell count, triglycerides and HDL-c levels.

**RESULTS:** Of our T1D patients, 23.75% had significant physical activity (physically active group). Physical activity was negatively related to age (beta=-0.309, p=0.000), Tanner stage (beta=-0.804, p=0.000), height( beta=-0.026, p=0.012), weight( beta=-0.053, p=0.000), waist circumference(cm) (beta=-0.077, p=0.000), BMI (beta=-0.16, p=0.009), muscle mass(kg) (beta=-0.061, p=0.001), disease duration (beta=-0.141,p=0.017), white blood cell count (beta=-0.0004, p=0.007) and triglycerides (beta=-0.0150404,p=0.007). Physical activity was positively related to HDL-c (beta=0.03, p=0.033) and total number of daily glucose measurements (beta=0.158, p=0.016).

**CONCLUSION:** In this study a considerable proportion of T1D young patients were physically active (23.75 %). Our findings are indicative of the beneficial role of exercise on youth with T1D by primarily reducing their cardiometabolic risk through amelioration of lipid profile (HDL-c, triglycerides) and body composition, the reduction of chronic systemic inflammatory response and ultimately the overall diabetes morbidity.

## CHRONIC DISEASES

### 21. Obesity without Insulin Resistance in an Adolescent with Cowden Syndrome

Aikaterini Vourdoumpa<sup>1</sup>, Diamanto Koutaki<sup>1</sup>, George Paltoglou<sup>1</sup>, Ioanna Bakopoulou<sup>1</sup>, Elena Fryssira<sup>2</sup>, Evangelia Charmandari<sup>1</sup>

<sup>1</sup> Division of Endocrinology, Metabolism and Diabetes, First Department of Pediatrics, National and Kapodistrian University of Athens Medical School, 'Aghia Sophia' Children's Hospital, Athens, Greece

<sup>2</sup> Division of Medical Genetics, National and Kapodistrian University of Athens Medical School, 'Aghia Sophia' Children's Hospital, Athens, Greece

## Abstract

**INTRODUCTION:** Germline mutations of the phosphatase and tensin homolog (*PTEN*) gene lead to PTEN Hamartoma Tumor Syndrome (PHTS), including Cowden syndrome. *PTEN* encodes a tumor suppressor protein, which antagonizes the PI3K/Akt pathway, participating in growth and metabolism. Except for its role in tumorigenesis, *PTEN* haploinsufficiency is obesogenic with paradoxical increased insulin sensitivity. PI3K/AKT signaling is amplified, promoting glycolysis and lipogenesis, inhibiting neoglycogenesis in the liver, mobilizing glucose transporter during hyperglycemia in adipose tissue and muscles, and rescuing age-related loss of regenerating abilities for  $\beta$ -cells.

**METHODS:** We present an 8-year-old female followed-up in our Outpatient Clinic for the Prevention and Management of Childhood Obesity. Clinical examination revealed BMI z-score 2.16, macrocephaly, short neck, depressed nasal bridge, lip papillomas and lipoma. Past medical history suggested fetal macrosomia, lipoma excision and multiple papillomas. Evaluation by a Clinical Geneticist suggested the diagnosis of Cowden syndrome.

**RESULTS:** Genetic analysis confirmed a *de novo* pathogenic mutation of *PTEN* [(NM-0013047175): c.1546-2A>G)]. During follow up, two thyroid nodules (normal thyroid function, FNA negative for malignancy), oral papillomas, acral

keratosis, intracranial venous anomalies, and a possible cerebral hamartoma were found. BMI initially improved through implementing a multidisciplinary personalized lifestyle intervention, however, it gradually deteriorated during puberty (BMI z-score: 2.95, 15<sup>8/12</sup> years). Despite increased adiposity, no signs of insulin resistance were developed (OGTT: plasma glucose at 120': 114 mg/dL, maximum insulin concentration at 150': 27,81 µIU/mL, HbA1c: 5%, HOMA-IR: 1.96).

**CONCLUSIONS:** PTEN Hamartoma tumor syndrome is rare, may present early in life and is associated with a complex phenotype (dysmorphic features, thyroid nodules, hamartomas, mucocutaneous lesions, tumors, obesity, insulin sensitivity). Early diagnosis allows the implementation of a multidisciplinary management plan, detecting and addressing tumorigenesis and other comorbidities in time. Further research may contribute to the development of novel therapeutic targets for diabetes mellitus type 2 based on small molecule PTEN inhibitors without oncogenic side effects.

## CHRONIC DISEASES

### **22. Gut microbiota dysbiosis in adolescent girls with Polycystic Ovary Syndrome (PCOs): a systematic review.**

**Vasiliki-Regina Tsinopoulou<sup>1</sup>, Flora Bacopoulou<sup>2</sup>, Evangelia Ntzani<sup>3</sup>, Athanasios Christoforidis<sup>4</sup>**

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<sup>3</sup> Department of Hygiene and Epidemiology, School of Medicine, University of Ioannina, Ioannina, Greece

<sup>4</sup> 1<sup>st</sup> Department of Paediatrics, Ippokraton General Hospital, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece

#### **Abstract**

Polycystic ovary syndrome (PCOs) is a common endocrinological disturbance affecting women of reproductive age as well as young female adolescents. Establishing the diagnosis during puberty is challenging, since most of the criteria overlap with normal variations during this time (abnormal menstrual cycles, hyperandrogenism and multifollicular ovarian morphology). On the other hand, human gut microbiome is a well-studied field and known for its dynamic growth and development. Regarding gut microbiome and PCOs, current studies have tried to explain the possible mechanism associating these two, in terms of pathophysiology, symptoms and treatment. This review aimed to detect dysbiosis patterns in adolescent girls with PCOs, compared to healthy controls. Databases were searched for studies published until March 2022. One hundred and seventy-eight (178) studies were identified and sixty-eight (68) underwent full-text assessment for eligibility. Finally, four (4) were included in the systematic review, and underwent quality control. The results of the review were controversial, in accordance with findings from the international literature. Two studies revealed a change in  $\alpha$  diversity of the gut microbiome in adolescent girls with PCOs, with no significant alterations in  $\beta$  diversity. Regarding the phyla almost all of the studies found in abundance *Firmicutes*, *Bacteroidetes* and *Actionobacteria* in both groups, with changes in family composition and fluctuations at phylum level. Accordingly, they tried to investigate the impact of therapeutic approaches in microbial composition, in adolescents with PCOs. Only one found a positive correlation between PCOs and therapy, in terms of microbial alteration. Most studies described statistically significant correlation between those changes and clinical or biochemical features of the syndrome. In conclusion, only few studies have tried to assess dysbiosis of gut microbiota in adolescent girls with PCOs. The bottom-line findings conclude in differentiations between adolescents with PCOs and healthy controls, nonetheless further studies are needed to verify those alterations.

**Key words:** *adolescents; polycystic ovary syndrome (PCOs); microbiome; gut; dysbiosis*

### 23. Current practices in health care of Cerebral Palsy in Greece: Transition from childhood to adulthood.

#### A preliminary study

Karela Christina<sup>1</sup>, Kazakou Agori<sup>1</sup>, Detsi Vasiliki<sup>2</sup>, Kornarou Eleni<sup>1</sup>, Stathis Pantelis<sup>2</sup>

<sup>1</sup> Department of Public Health Policy, University of West Attica

<sup>2</sup> Cerebral Palsy Greece-Open Door, Argyrupolis, Athens

#### Abstract

**INTRODUCTION:** Cerebral Palsy (CP) is defined as a non-evolving disorder of the brain, during perinatal period. It is responsible for impairment of multiple body functions with corresponding disability. Treatment of CP is usually complex, multidisciplinary, and long-term.

**OBJECTIVE:** To investigate the way of seeking health services people and families with CP at the ages of transition and shortly after (16-24 years) in the Greek, mix of public and private, health care system.

**MATERIAL AND METHODS:** Sample of 62 parents of children with CP, accessed by convenience sampling from special social care facilities and special schools in Athens during the period February-May 2021. Data collection tool was a structured questionnaire. Statistical analysis was performed with the program SPSS v21.

**RESULTS:** People with CP ages 16-42, male 38. GMFCS (disability) I=(3) 4.8%, II=(6) 9,7%, III=(9) 14,5%, IV=(20) 32,3%, V=(24) 38,7%. Chronic needs covered firstly from specialties such as Neurologist, Orthopedist, Pediatrician and General Practitioner or Internist, almost equally to state and private sector. Emergencies covered mainly from, Pediatric and Internal Medicine (adults) departments of state hospitals, and private home visits. Families are rather satisfied when they ask for a specific (especially local), service but also miss some crucial services. They also stress the need of the participation of the former attendant pediatrician at the first visit to adult practitioner, education of medical staff in CP, psychological and social support, and reduce charges.

**CONCLUSIONS:** Families with CP people still seek medical care from the Pediatrician at the ages of transition. They use mainly special physicians. Insurance, marital status, and the parents' educational level are factors that affect more the way they cover medical care needs on chronic and urgent basis. Transition requires careful planning and timing, especially in children with CP.

**KEYWORDS:** *cerebral palsy, children, transition, use of healthcare services*

#### OTHER

### 24. Gynecomastia in adolescents

Demet Aygun Ari, Semra Cetinkaya.

*Dr. Sami Ulus Maternity and Child Health and Diseases Training and Research Hospital, Ankara*

#### Abstract

**BACKGROUND:** Gynecomastia is the benign proliferation of male breast glandular tissue. Asymptomatic gynecomastia is very common and is observed in 50% to 60% of boys during puberty.

**OBJECTIVE:** In this study, we aimed to present the clinical and biochemical data of our patients who applied with gynecomastia.

**METHODS:** Seventy patients with gynecomastia who applied between April 2019 and May 2022 were included in the study. Data were collected retrospectively from the medical records.

**RESULTS:** The mean age was  $13.4 \pm 0.15$  years. The mean body weight, height and body mass index was  $56.56 \pm 13.7$  kg,  $161.43 \pm 9.48$  cm and  $21.35 \pm 3.94$ , respectively. By BMI criteria, 5 of the patients (7.1%) were obese, 15 (21.4%) were overweight and 50 (71.4%) were normal-weighted. Sixty-seven of the cases were pubertal and 3 of them were prepubertal gynecomastia. No etiological factor was found in cases with prepubertal gynecomastia. Gynecomastia was bilateral in 75.7% (53/70) of patients; the left and right disc long diameters were  $2.16 \pm 1.23$  cm and  $2.12 \pm 1.16$



cm, respectively. The presenting symptom was only swelling in the breasts in 58.6% of the patients, the rest had complaints of swelling, tenderness and pain in the breast. Seven patients had a family history of gynecomastia. Serum estradiol, total testosterone, sex hormone binding globulin, dehydroepiandrosterone sulfate, human chorionic gonadotropin, follicle-stimulating hormone, luteinizing hormone, prolactin, thyroid stimulating hormone and free thyroxin levels were within the normal range. Laboratory tests are shown in table 1.

**CONCLUSIONS:** Gynecomastia is thought to result from a relative imbalance between androgens/estrogens. This imbalance arises through mechanisms such as exogenous estrogen intake, endogenous estrogen production, increased aromatase activity and increased peripheral conversion of androgens to estrogens, androgen deficiency or insensitivity. When gynecomastia is detected in male adolescents, it is important to distinguish between prepubertal and pubertal gynecomastia by a pubertal examination.

## **E-POSTER PRESENTATIONS 3**

**Thursday, October 6th, 13:30-15:00 | “Kostis Palamas” Hall/Hall B**

CHRONIC DISEASES

### **25. Two cases of Perniosis in Teenagers with Anorexia Nervosa**

**Eleni Panagouli, Athanasios Tsaraklis, Athanasios Thirios, Artemis Tsitsika**

*MSc Program “Strategies of Developmental and Adolescent Health”, Medical School of Athens, National and Kapodistrian University of Athens, Greece.*

#### **Abstract**

Anorexia Nervosa has been associated with low hand blood flow and abnormal peripheral vascular response to cold. Perniosis (chilblains) is a seasonal inflammatory disorder that is usually caused by prolonged exposure to cold. We describe two cases of perniosis in two teenage girls diagnosed with Anorexia nervosa, aged 15 and 17 years respectively, which in one case bluish-red and slightly painful discoloration of the skin was observed during winter in both leg and hand fingers. In the second case discoloration was detected only in the hands, with no other symptoms and lasted for several months. Extensive laboratory tests were performed in both cases, including diagnostic exams for autoimmune diseases, Raynaud’s disease and COVID-19 antibodies which were all negative. Topical corticosteroids, (mometasone) were applied in both cases. Nevertheless, the symptoms were recessed after gaining normal weight and fat tissue were retrieved to normal levels. In general, patients with Anorexia Nervosa might present subnormal core temperature and abnormal or excessive responses to heat and cold, as result to insufficient weight and fat tissue. Moreover, one of the most common risk factors of perniosis includes low body mass index and poor nutrition. Thus, specialist should keep in mind the possibility of cutaneous vascular changes in these patients.

CHRONIC DISEASES

### **26. HNF1B-MODY with Extrapancreatic Manifestations in an Adolescent Male**

**Aikaterini Vourdoumpa<sup>1</sup>, Diamanto Koutaki<sup>1</sup>, Ioannis-Anargyros Vasilakis<sup>1</sup>, George Paltoglou<sup>1</sup>, Ioanna Bakopoulou<sup>1</sup>, Amalia Sertedaki<sup>1</sup>, Evangelia Charmandari<sup>1</sup>,**

*<sup>1</sup>Division of Endocrinology, Metabolism and Diabetes, First Department of Pediatrics, National and Kapodistrian University of Athens Medical School, ‘Aghia Sophia’ Children’s Hospital, Athens, 11527, Greece*

#### **Abstract**

**INTRODUCTION:** Hepatocyte nuclear factor 1B (*HNF1B*) gene that encodes the transcription factor HNF1B, contributes to embryonic development and regulation of gene expression in several organs, mainly originating from the endoderm. Mutations in *HNF1B* cause monogenic diabetes (*HNF1B*-MODY or MODY5, OMIM 137920) with multisystem disorders.

**METHODS:** We present the case of a 14.3-year-old male evaluated in our Outpatient Clinic for the Prevention and Management of Childhood Obesity. His past medical history revealed unhealthy dietary habits, elevated concentrations of fasting glucose and HbA1c, unilateral nephrectomy (polycystic kidney), a femoral fracture and hypertransaminasemia. At initial evaluation, our patient was pubertal (G3, P4, A3, Testicular volume: 6-8mL) with normal BMI (BMI z-score: -0,07) and a right hydrocele. The OGTT was diagnostic of diabetes mellitus (plasma glucose at 120’: 200 mg/dL, maximum insulin concentration at 120’: 96.94 ng/mL, HbA1c: 5.5%, fasting C-peptide: 0,401 nmol/L, autoantibodies for Type I diabetes: negative). He was noted to have hypomagnesemia, hypertransaminasemia, hyperparathyroidism and hyperuricemia, which indicated the diagnosis of *HNF1B*-MODY.

MLPA methodology was implemented in patient's and his parents' DNA to detect *HNF1B*, *GCK*, *HNF1A*, and *HNF4A* gene deletions or duplications.

**RESULTS:** Genetic testing revealed a *de novo* heterozygous deletion of *HNF1B*, confirming the diagnosis. Further investigation (elastography, MRCP, MRI) showed pancreatic hypoplasia with steatosis, liver fibrosis, and genital tract malformations. A multidisciplinary management plan was introduced, including pediatric endocrinological (structured diabetes training program - glucose monitoring, dietary consultation with carbohydrate counting, insulin therapy), nephrological and gastroenterological care.

**CONCLUSION:** Impaired glucose metabolism or diabetes with multisystem (extrapancreatic or exocrine pancreas) involvement should raise awareness towards monogenic forms of diabetes. *HNF1B* mutations lead to multisystemic manifestations, which present with a heterogenous and broad phenotype. Early diagnosis in childhood or adolescence and early implementation of an integrated multidisciplinary management plan, even in the absence of overt diabetes, prevent and/or address comorbidities in time.

## CHRONIC DISEASES

### 27. Juvenile Systemic Lupus Erythematosus and thyroid dysfunction

**Stella Bourtzou, Evdoxia Sapountzi, Assimina Galli-Tsinopoulou.**

*School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki*

#### Abstract

Systemic Lupus Erythematosus (SLE) is a chronic multisystem disease which can be associated with other autoimmune disorders. Thyroid gland is reported to be the commonest endocrine organ to be affected by organ specific autoimmune injury. However, the accurate correlation between these diseases and the pathogenic mechanism has not been fully elucidated in children and adolescences. Herein, we attempt to review the thyroid comorbidities in juvenile SLE patients.

**Methods:** We searched PubMed and Scopus for English literature using the following search terms: "Juvenile Systemic Lupus Erythematosus" and "thyroid disease" from 2000 to 2020. In order to support and interpret the findings a series of reliable and advanced statistic tools and methods was applied.

**Results:** The duration of SLE does not appear to be related to thyroid dysfunction. The onset of puberty as well as the course of adolescence is closely related to the apparent thyroid dysfunction. The prevalence of thyroid autoantibodies in young SLE patients was higher compared to controls and the prevalence of autoimmune hypothyroidism was higher than hyperthyroidism. Females adolescents are more affected than males.

**Conclusions:** Thyroid disorders are frequent in SLE and are multifactorial. Solid and concrete association between these two ailments is yet to be confirmed. One suggested interaction mechanism is a cross reaction between thyroid auto anti-bodies and several tissues or organs, which causes an abnormal pro inflammatory cytokine condition and regulation. Despite the published data on SLE and thyroid dysfunction, there is still a lack of explanation for their relationship. Further research is needed to understand the nature of this correlation.

**Keywords:** juvenile systemic lupus erythematosus; thyroid diseases

## PUBLIC HEALTH

### 28. Knowledge and Practice of Food label information among adolescents of Vijayapura, India.

**Chandrika Doddihal, Shailaja Patil, Sakshi Patil.**

*BLDE University, Shri.B.M.Patil Medical College, Vijayapura, Karnataka, India*

#### Abstract

**BACKGROUND:** India is home to largest number of adolescents in world and the burden of obesity is on rise. Amongst several contributing factors, one of them is unhealthy eating habits especially consumption of easily available,

packaged foods which is steeply increasing among Indian urban adolescents. Regulations for food labelling on packages to provide nutritional information are in place, however only supply side interventions without assessing its usage will make it a futile exercise. This study aims to evaluate the knowledge and practice of reading food label information among urban adolescents in a 2 tier city of South India.

**METHODOLOGY:** It's a Cross sectional study among representative sample of urban school going adolescents in 11<sup>th</sup>/12<sup>th</sup> grade(n=206). We developed and tested questionnaire eliciting components of knowledge and practices regarding food labelling information. We also elicited the packaged food consumption patterns among adolescents and whether their knowledge and behaviours are in tandem with governmental regulations

**RESULTS:** The participants were between 16-18 years, mostly(82%) belonging to nuclear families with educated parents. They all consumed packaged foods and 1/3<sup>rd</sup> consumed daily with chocolates/sweets and ready-to-eat foods like pasta/noodles being most frequently bought foods. About 86% adolescents were aware of food labels being mandatory. Majority (75%) of them had seen the food logos like "veg"/"non-veg"/ISI/FPO but only ½ of them knew what it actually meant. Around 50% participants felt the food labels were confusing and more pictorial information would make it easy to read and understand. Adolescents checked only manufacture and expiry dates rather than other contents on the label

**CONCLUSION:** Knowledge about food package labelling is limited among adolescents, pictorial messages about healthiness of food items to be on the front along with increasing awareness about labelling among school children.

## PUBLIC HEALTH

### 29. Gender differences in health behaviours, knowledge and attitudes of adolescents in Armenia

**Yeva Movsesyan, Marina Melkumova, Sergey Sargsyan**

*ARABKIR Medical Center-Institute of Child and Adolescents Health, Armenia*

#### Abstract

**BACKGROUND:** A supportive family and school environment with comprehensive Healthy lifestyle (HLS) education are crucial for the development of healthy lifelong skills. Adolescents' own attitudes, and the pressure they experience to conform to culturally sanctioned gender roles, is likely to vary across cultures. Gender differences were found to be present from early adolescence leading to different health outcomes: girls have higher level of psychosomatic complaints; boys have a higher level of physical fighting, risky behaviors and obesity.

**AIM:** To identify more prevalent gender differences in behaviours and attitudes of Armenian adolescents using data of HBSC 2017/2018 Armenian survey.

**METHODS:** 5892 11-17-years-old students participated in HBSC 2017/18 survey. Alongside health findings they expressed opinion about statements on gender norms related to enrollment in education and family roles. Senior adolescents were asked about their sexual experience, whether they were educated on SRH, HIV prevention.

**RESULTS:** Results showed that boys were significantly more prone to risky behaviors, especially smoking, physical fighting; three times as many boys as girls have sexual experience. Gender stereotypes were found to be more common in boys, especially in younger age groups and in rural areas. Girls struggled for their rights to study in universities and also being leaders and not only serving as wives and mothers. A significant gender difference was found in knowledge on HIV: fewer girls provided correct answers to the question regarding protection from HIV during sexual intercourse, but they were more confident about other types of contact such as sharing food with a person with HIV.

**CONCLUSION:** Study revealed a number of issues that can lead to personal and family problems, poor health outcomes and require joint interventions by health, social and education sectors. Among them are creating healthy school environment and further improvement of HLS education with more attention to SRH, gender, violence prevention and other areas.

## MENTAL HEALTH

### 30. Psychological and Emotional Factors of School Refusal in Kindergarten or Elementary: A systematic Review of the 20 last years

Anastasia Kourti<sup>1,2</sup>, Amanta Karpathaki<sup>2</sup>, Stephanos Vassilopoulos<sup>1</sup>.

<sup>1</sup>Department of Educational Sciences and Social Work, University of Patras, Greece,

<sup>2</sup> MSc Program "Strategies of Developmental and Adolescent Health", Medical School of Athens, National and Kapodistrian University of Athens, Greece.

#### Abstract

School refusal is a worldwide phenomenon that affects students of various ages and mainly during kindergarten and in first grades of elementary school and high school. Various factors, such as psychological, emotional, social, neurodevelopmental and more, have been linked to school refusal. The present systematic review examines the psychological and emotional factors of school refusal in kindergarten or first grade of elementary school during the last twenty years.

**METHOD:** The following databases were accessed until 20 June 2022: Scopus, ERIC, DOAJ, Google Scholar, Science Direct, Pubmed.

**RESULTS:** Nine studies were selected as eligible assessing 1,784 kindergarten and 1<sup>st</sup> grade students. Students with low emotional adjustment, loneliness, shyness or anxiety were more likely to face school refusal. Especially loneliness and shyness were key factors to school refusal. More likely to face school refusal were boys, rather than girls.

Conclusion: School refusal is a complex phenomenon, with psychological and emotional factors to play important role, especially in key stages, like kindergarten and first Grade. Due to minimal research implemented in these stages. further research is required.

Key words: *school refusal, school phobia, primary education, preschool education, psychoemotional factors*

## SCHOOL HEALTH

### 31. A snapshot of School food environment in perspective of Covid-19 from South of India

Shailaja Patil, Chandrika Doddihal, Tejaswi Jakkepally.

BLDE University

#### Abstract

**BACKGROUND:** India like other LMICs is undergoing Nutrition Transition and School children are facing dual burden (24% underweight ,5% overweight) of malnutrition (CNNS 2019). The school Mid Day Meal programme (MDM) catering around 116 million children plays a pivotal role in preventing Under nutrition. Food safety and standard regulations (FSSAI) to schools (2020) to promote healthy food environment prohibited unhealthy (HFSS) foo/tobacco sales inside and within 150mts of schools. Covid-19 pandemic resulted in school closures (March2020-November2021) and deprived children from MDM. Alternatively Government made provisions to supply Dry rations (Rice/pulses) to children , school managements faced challenges in delivering amidst pandemic. Implementation of Food safety guidelines also became Essential for schools, this study explored the status of MDM/Food safety guidelines immediately after schools reopened.

**METHODOLOGY:** A representative sample of 80 schools (Government and Private) was selected from Vijayapura city in South of India. We used semi structured questionnaire eliciting information about MDM functioning and(FSSAI) implementation from School authorities and also from few Vendors near the schools.

**RESULTS:** Among the schools studied, 48% provided mid-day meals PreCovid time and were giving dry rations during study period 93% of these schools were government and told there was no interruption in supply chains of ration. 43% of the Government schools had a staff exclusively meant for MDM and Food safety monitoring. 88% of Government and 81% private school authorities were aware of FSSAI guidelines, only 61% restricted HFSS foods inside

schools. Food vendors interview revealed that most sold HFSS items, which were easily accessible (within 50metres distance) and were cheap, students usually bought them during school breaks. The vendors were unaware of FSSAI guidelines.

**CONCLUSION:** MDM in schools was disrupted during COVID and dry rations though supplied were not a substitute for cooked meals for children, Food safety guidelines need to be implemented in all schools through comprehensive programme.

## MENTAL HEALTH

### **32. The role of supervision in cognitive behavioral therapy of eating disorders**

**Vasiliki Ioanna Tzanne, Fragkiskos Gonidakis, Christina Zourna, Alexandros Georgoulis, LizaMavromara**  
*National and Kapodistrian University of Athens*

#### **Abstract**

In eating disorders the mortality rate is higher compared to other mental disorders, since patients present physical complications, low level of functionality, and there are also consequences in regard to their relatives. Therefore, patients have to cope with not only pathological issues (organicity) but also intense psycho-emotional difficulties, since food is often not merely a means of survival but also an emotion regulation. Some common characteristics in eating disorders are :excessive weight gain (weight control), eating in the absence of hunger, decrease or lack of sexual desire (eg anorgasmia, amenorrhea, role confusion), reservation, etc. At the level of thinking: thoughts around food, food items, calories, clothes, deformed body images, etc. Common process errors are observed in the interpretation of the bodily senses, as well as in the patterns of values and control. The contribution of supervision (mentoring) is important to achieve a successful treatment process as it helps to strengthen the skills, the treatment plan for the formulation of the case and the management of the therapists' difficulties, since the latter provide direct guidance on the "baby steps" of the intervention process. There are many persons suffering with anorexia who go on to develop bulimia, since the impulse is high. In bulimia, patients seem to start much later the treatment, while it should be noted that the trigger point appears to be during adolescence. Throughout adolescence is being observed an intense dissatisfaction with body image (shape, weight), changes in the body and the emotions, as well as premature obesity that leads adolescents to extreme diets and the adoption of risk compensation/safety behaviors (vomiting, laxatives) which most of the times constitute a strategy for regulating their negative emotions (sense of control, achievement of a goal etc). Moreover, in bulimia there is an overestimation of weight, intense control as a reward, as well as consumption of large amounts of food which is followed by self -induced decompensation. Their main request: "Be a better anorexic". A case study of active bulimia which started during adolescence, continued in the course of adulthood (50 years) and it was successfully completed.

## PUBLIC HEALTH

### **33. Three vs. five minutes cell phone effect on the heart rate variability of adolescents**

**Styliani Geronikolou<sup>1,2</sup> and George Chrousos<sup>1,2</sup>**

<sup>1</sup>*Clinical, Translational and Experimental Surgery Research Centre, Biomedical Research Foundation, of the Academy of Athens, Greece*

<sup>2</sup>*University Research Institute for Maternal and Child health and Precision Medicine, Greece*

#### **Abstract**

There has been a great social concern regarding the possible risk of radiofrequency fields exposure in children and adolescents. Heart rate variability (HRV) is one of the two valid markers of the autonomic nervous system (ANS) activity. In a previous work of ours, we had demonstrated that radiofrequency fields have an impact on linear components of HRV that depend on the age of the subject rather than the duration of a telephone call. As younger age was closely related to a higher impact, we designed a case control study comparing two groups of healthy age and BMI adjusted adolescents: a. group A including 17 participants exposed to a three min cell phone call, and b. group B including 20 participants exposed to a 5 min call. HRV was recorded by Task Force Monitor. The experiments were performed in the same room, between 11-11.30 am, with similar technology: 4G-cell phones. As the sample size of

each group is small, we performed SSEv for each component and then meta-analyzed the Hedge's g effect size – correction of Cohen d for small sizes- so as to evaluate the difference of the effect of cell phone call duration on puberts' ANS. A non-significant low effect  $g = -0.18$  with 95% CI [-0.54, 0.18], and a low heterogeneity  $I^2 = 22\%$  were found. These results confirm previously calculated results by meta-analysis, showing that minutes of cell phone call do not affect the nervous or cardiac function in adolescents.

#### SCHOOL HEALTH

### **34. Cross-Cultural adaptation of “Attitudes related to trauma-informed care” ARTIC-35 scale in primary and secondary educators in Attica**

**Koulouvari Areti-Dimitra, Dimitrakaki Christina, Kolaitis Gerasimos, Sakellari Evanthia, Lagiou Areti**

*Laboratory of Hygiene and Epidemiology, Department of Public and Community Health, School of Public Health, University of West Attica*

#### **Abstract**

**BACKGROUND:** The psychological trauma has high incidence in childhood and teenagehood. The experience of adverse childhood events in U.S.A. is considered to be a Public Health issue, as almost two thirds (2/3) of the general population reports having experienced at least one traumatic childhood event. Adverse childhood events seem to have negative consequences in the children's social functionality and health. The Trauma-Informed Care (TIC) is an approach for planning and providing services that incorporate an understanding of the biological, psychological and social consequences of the trauma. It is particularly valuable in the school community with the ultimate goal of improving the well-being of the students with trauma.

**METHODS:** The aim of the study was the cross-cultural adaptation of the scale “Attitudes related to Trauma Informed Care” ARTIC-35 in Greece. The Traumatic Stress Institute of Klingberg Family Centers (New Britain, US) gave the permission to develop and use the Greek version. Data was collected by the Greek version of schools in Attica.

**RESULTS:** Test-retest reliability was measured with intraclass correlation coefficient, and it was adequate. The internal consistency reliability was calculated with Cronbach's alpha ( $\alpha = 0,75$ ). The structure of Greek version was examined in comparison with the genuine scale. Six factors emerged in the exploratory factor analysis, and they were confirmed in the confirmatory factor analysis.

**CONCLUSION/NEXT STEPS:** The Greek version of ARTIC-35 has been used in the context of a cross-sectional study in schools in Attica and we are expecting very interesting results about the attitudes of primary and secondary educators.

#### PUBLIC HEALTH

### **35. Breastfeeding and the risk of cancer in childhood and adolescence.**

**Eleni Maria Totorou, Vasiliki Volikaki.**

*MSc in Strategies of Developmental and Adolescent Health, Medical School, National and Kapodistrian University of Athens*

#### **Abstract**

**BACKGROUND:** Breastfeeding has been of a great interest worldwide for its protective effects on chronic diseases in children's lives, as cancer. The recommendation of World Health Organization is to follow exclusive breastfeeding, the first 6 months of life, to achieve the optimal infant's growth and health. This review aims to analyze the possible correlation between breastfeeding and development of cancer in childhood and adolescence.

**METHODS:** Research on the duration of breastfeeding, the intake of infant formula, and the appearance of neoplasms in children and adolescents by 0-18 years old was conducted on online databases, regardless of gender, educational level, and nationality. Two authors performed the screening the studies to obtain full manuscripts, and the titles and abstracts. During this research words such as, “Breastfeeding”, “Formula”, “Adolescence”, “Childhood”, “Pediatric Cancer”, “Lymphoma” and “Leukemia” were used. We collected and analyzed different types of surveys, published in English, including meta-analysis and case-control studies.

**RESULTS:** The results showed a protective effect of breastfeeding in the development of childhood cancer worldwide, specifically in all types of acute leukemia. Furthermore, the duration of feeding with mother's milk is related to the decrease in cancer cases. In contrast, the induction of formula in the first days of life was associated with some types of cancer, especially with acute lymphoblastic leukemia.

**CONCLUSION:** The nutrition of children is vital in the first years of life and eating habits affect food choices at an older age. Balanced children's nutrition is an important public health issue, which depends on the parents who should consult health care professionals. Based on this literature review some studies found a connection between breastfeeding and a lower risk of pediatric cancer, while others demonstrated no connection. Given that variability and the differing results of these studies, there is a need for further research in this field.

## PUBLIC HEALTH

### 36. COVID-19 Vaccination for French Adolescents

**Roxane Meurillon, Marie Guirguis, Mariana Marin.**

*Rives de Seine Hospital, Neuilly sur Seine, France*

#### Abstract

Vaccination against SARS-CoV-2 is open in France for all adolescents aged 12 and older since June 15th 2021. It is recommended but not compulsory. The price of the vaccine is covered by Social Insurance.

Even if two messenger RNA vaccines were authorised for adolescents aged 12 to 17: Comirnaty® (Pfizer) and Spikevax® (Moderna), the current vaccination scheme uses only the Comirnaty® vaccine in this age group. In June 2022 82% of the 12-17 years old have completed the initial vaccination schedule. However the booster rate was only 16.5%. Since August 2021 the consent of only one person with parental authority is required for a child under 16 to be vaccinated against COVID-19. A teenager over 16 who wishes to receive this vaccine is not required to have parental consent. This is unprecedented in France for a non-compulsory vaccine. Other specific authorisations exist for minors aged 12 or over in child welfare care, for incarcerated or for unaccompanied minors. COVID-19 vaccination is strongly recommended for adolescents. It has an individual and collective interest and a favorable benefit-risk balance. However, few French adolescents have received the booster dose by June 2022.

## OTHER

### 37. Serum Concentrations of Hepatokines in Adolescents with Polycystic Ovary Syndrome

**Aikaterini Giannouli<sup>1</sup>, Vasiliki Efthimiou<sup>1</sup>, Dionysia Lampropoulou<sup>1</sup>, Despoina Apostolaki<sup>1</sup>, Leon Aravantinos<sup>2</sup> Efthimios Deligeoroglou<sup>3</sup>, Flora Bacopoulou<sup>1</sup>**

*<sup>1</sup>Center for Adolescent Medicine and UNESCO Chair in Adolescent Health Care, First Department of Pediatrics, School of Medicine, National and Kapodistrian University of Athens, Aghia Sophia Children's Hospital,*

*<sup>2</sup>2nd Department of Obstetrics and Gynecology-Aretaieion Hospital, National and Kapodistrian University of Athens*

*<sup>3</sup>Department of Pediatric & Adolescent Gynecology, Mitera Children's Hospital*

#### Abstract

**CONTEXT:** Polycystic ovary syndrome (PCOS) is a multifactorial disorder with gynecological and metabolic sequelae, affecting women from adolescence until menopause. Liver steatosis is reported more commonly in PCOS patients than healthy women. Hepatokines are organokines secreted by liver and are associated with metabolic dysfunction. Hepatokine production is altered in hepatic steatosis.

**Objective:** To assess potential differences in hepatokines between adolescents with PCOS and healthy controls.

**PATIENTS:** The study included 75 Caucasian adolescent girls (35 controls and 45 PCOS patients), aged 12.28-19.08 years (mean 15.25±1.56) recruited from the Center for Adolescent Medicine and UNESCO Chair in Adolescent Health Care, First Department of Pediatrics, School of Medicine, National and Kapodistrian University of Athens, at the Aghia Sophia Children's Hospital.

**METHODS:** Adolescents' anthropometric data were recorded and biochemical and hormonal parameters were assessed with commercial methods. Hepatic steatosis was assessed with ultrasound. Serum concentrations of



hepatatokines i.e. fetuin A, fibrinoblast growth factor 21 (FGF21), selenoprotein P (SeP) and sex hormone binding globulin (SHBG) were measured.

Results: Serum concentrations of fetuin A and FGF21 did not differ significantly between PCOS adolescents and controls ( $0.94\pm 0.16$  vs.  $0.94\pm 0.16$ ,  $p=0.972$  and  $92.50(104.10)$  vs.  $127.20(87.80)$ ,  $p=0.147$ , respectively). Serum concentrations of SeP and SHBG were significantly lower in adolescents with PCOS than controls ( $2.47(0.40)$  vs.  $2.65(0.36)$ ,  $p=0.025$  and  $54.94\pm 22.12$ ,  $p=0.011$ , respectively). When we stratified our sample in lean and overweight vs. obese groups, only SHBG remained significantly different between groups ( $p=0.005$ ). Additionally, SHBG was the only hepatokine significantly lower in adolescents with hepatic steatosis than those without steatosis ( $p=0.006$ ).

**CONCLUSION:** Whereas in the adult population hepatokines are significantly altered in PCOS women and women with hepatic steatosis, in our adolescent sample differences were evident only for SHBG and SeP. Among hepatokines, SHBG alterations seem to prevail in relation to PCOS with its metabolic consequences.

## DEVELOPMENTAL HEALTH

### **38. Parents perception of symptoms alterations in children with ASD, ADHD and SLDs during COVID-19 Quarantine in Greece**

**Effrosyni Tsekoura**

*Asklepieion General Hospital*

#### **Abstract**

COVID-19 pandemic came unexpectedly in the beginning of 2020. Greece put in place two periods of lockdown to control COVID-19 pandemic. The second one started from 7th November 2020 until 14th May 2021. Under the new circumstances everybody was placed at a high-risk position for mental health issues but children with neurodevelopmental disorders and their families were even more vulnerable.

**AIM:** The purpose of the study was to investigate how parents of children with ASD, Asperger syndrome, hyperactive type ADHD, inattentive type ADHD and SLDs in Greece perceived changes in the core symptoms of their child's neurodevelopmental disorder regarding alterations in frequency and intensity during the second COVID-19 quarantine in Greece, compared to before and if they experienced any increased feelings of emotional distress.

**METHODS:** This is a descriptive analysis survey. Data will be compared between the five dyads of children/parents with neurodevelopmental disorders. A total of 75 parents/caretakers that visited the researcher's office between 20 of September and 9 October 2021 participated in the study. A self-compiled survey questionnaire consisted of 40 items was constructed and given anonymously to participants.

**RESULTS:** Parents of children with neurodevelopmental disorders did not perceive any significant changes in the core symptoms of their children's disease during the second COVID-19 pandemic quarantine in Greece. Parents did not experience any significantly increased emotional distress.

Preschool age and discontinuation of physical activity was significantly associated with children's symptom deterioration. Changes in parents' work status and increased time spent with their children were significantly associated with improved perception of their children's core symptoms.

## DEVELOPMENTAL HEALTH

### **39. High Birth Weight and Non-Neoplastic Diseases and Entities**

**Chrysovalanti Christodoulou, Theodoros N Sergentanis**

*MSc in Strategies of Developmental and Adolescent Health, Medical School, National and Kapodistrian University of Athens*

#### **Abstract**

**Objectives:** The purpose of this work was to examine whether children and adolescents with High Birth Weight (HBW) are at increased risk of developing Non-Neoplastic Diseases and Entities (NND/E), how these entities affect them and to find ways to treat, manage and prevent these diseases.

**Methods:** Google Scholar, PubMed and ScienceDirect, were searched for articles. The basic search terms (high birth weight, macrosomia, large for gestational age, diseases, disorders, difficulties) were used to identify potential studies.

The selection of studies was mainly limited to those that are systematic reviews, published from 2012 until today, while studies on neoplasms and tumors were rejected.

**Results:** Overall studies have shown a significant correlation between HBW and Non-Neoplastic Diseases and Entities, the frequency and severity of which varies. These diseases start in infancy and follow individuals throughout their later lives, affecting their functionality and quality of life. Existing preventative measures have low effectiveness.

**Conclusion:** High birth weight has been associated with the onset of a number of Non-Neoplastic Diseases in childhood and adolescence. Therefore, it is necessary to take into account the prevention of risk factors for high birth weight as well as the implementation of early diagnosis and early intervention in these populations. Further research studies are required for high birth weight infants.

OTHER

#### **40. New age limits set new needs in Pediatric Intensive Care Unit. Self-destructive behavior; A Retrospective study.**

**Maria Katsafiloudi, Peristera Mantzafleri, Kalliopi Kappou, Evangelia Karaïskou, Eleni Karakeke, Asimina Violaki, Eleni Volakli, Maria Sdougka**  
*PICU Ippokrateio Hospital of Thessaloniki*

##### **Abstract**

**INTRODUCTION:** Recently, suicide attempts and self-destructive behavior in adolescents are increasing worldwide and account for a common cause of admission to ICU. Since 10.19.2018, the age limit of patients hospitalized in PICU in our country has extended up to 16 years. This study aims to record the admissions of adolescents between 14 and 16 years to the PICU of Northern Greece in the past three years.

**METHOD AND MATERIALS:** We used PICU archives to collect data regarding suicide or self-destructive attempts in adolescents admitted from 2019 to 05/2022. Data recorded were the demographics, cause of admission, Paediatric Risk of Severity in admission, length of stay (LOS), mechanical ventilation days, the need for inotropic support, and the outcome of patients aged older than 14 years.

**OUTCOME:** Out of a total of 396 admissions, 24 patients were older than 14. 20% of these patients, with a mean age of 15.2 years, were admitted to PICU due to suicide attempts or self-destructive behavior. 20% of these patients were known heroin users and under child psychiatric supervision. The reasons for admission to PICU were thrombophlebitis-sepsis, poisoning by alcohol and alprazolam, hanging attempt to fall from a height, and substance abuse with self-injury. The average duration of hospitalization was 13.6 days, while the average duration of mechanical ventilation support was 10.8 days. 60% of the patients needed inotropic support. The severity index estimated on admission PRISM III (Pediatric Risk of Mortality III) was 10.6 on average. All patients survived, while one out of five had a tracheostomy and a portable ventilator at discharge.

**CONCLUSION:** The new age limit for hospitalization in PICU sets new data and implements new medical and nursing staff needs. Changes in hospitalization occur due to changed somatometric and psychological parameters in dealing with adolescent patients and their families.

SCHOOL HEALTH

#### **41. Self-Administration of Medicines at School by Students Living with Medical Conditions**

**Nicola Gray, Mariam Al-Sallami, Charlotte Cunningham, Maream Hadi, Nikola Janowska, Marinela Lazri, Farah Saleem**  
*University of Huddersfield, UK*

##### **Abstract**

**BACKGROUND:** Every school in England is required to have a policy to support students with a medical condition under statutory guidance issued by the Department for Education [1]. An individual healthcare plan (IHP) should be in place for every student who needs medical care at school. The guidance promotes self-administration of medicines where possible, supervised by an adult.

**METHODS:** An online data collection form was developed to facilitate content analysis of school health/medicine policies. One topic within the form was to search for content relating to self-administration of medicines. Each student

was assigned to 1 or 2 of the 9 regions of England and used search engines to find school websites with accessible health/medicine policies. We sought a diverse sample of schools (e.g. nursery age to college; urban and suburban; public and private/fee-paying). Ethical approval was not needed for this study of public documents.

**RESULTS:** Twenty-four of the 50 school policies analysed related to secondary schools and/or colleges for students aged 11-18. Eighteen of these 24 schools included statements about self-administration of medicines. Many were comprehensive, that young people with medical conditions should assume complete responsibility under parental supervision. Others specified self-administration for diabetes, asthma or severe allergies. Some schools described restricting access to controlled drugs.

**CONCLUSION:** Most schools have adopted a positive approach to self-administration of medicines consistent with the recommendations of statutory guidance. There is, however, some variation in this approach and a minority of schools that still prefer to keep medication stored away. In order to empower young people living with medical conditions, policies must be explicit in their approach, and school staff feeling confident to support students needing medicines.

## CHRONIC DISEASES

### **42. Cross-sectional Study on Assessment of Risk Perception and Coping Strategies of Covid-19 among Adolescents in Nigeria**

Ajike P.T.<sup>\*1</sup>, Olawumi I.F., Adubi K.O.<sup>1</sup>, Ariyo A.M.<sup>1</sup>

*Child Development and Family Studies Unit, Department of Home Science and Management, Federal University of Agriculture Abeokuta, Ogun State Nigeria.*

#### **Abstract**

**BACKGROUND:** Despite the fact that the COVID-19 pandemic afflicted people of all ages and genders, how the risk is perceived differs from one person to another. Individuals and societies must respond positively to pandemic risk reduction efforts for them to be effective, and it is critical to understand how the risk is perceived and reacted to by different groups of people.

**AIM/OBJECTIVE:** This study therefore, assessed the risk perception and coping strategies of COVID-19 pandemic among adolescents in Ogun State Nigeria.

**METHODS:** The research design employed a cross-sectional descriptive survey. Three hundred and forty-five adolescents were recruited for the study, and data was collected using a questionnaire. Statistical tests and regression analysis were used in analyzing the data.

**RESULTS:** The majority of males (mean = 71.70) had a greater risk perception than females (mean = 69.66). Risk perceptions and coping strategies are similar in males and females. The result of this study also showed that there is significant ( $p < 0.05$ ) difference in risk perception towards COVID-19 ( $F = 1.75$ ) between public and private secondary schools and there is no significant ( $p > 0.05$ ) difference in coping strategies toward COVID-19 ( $F = 0.51$ ) between private and public secondary schools.

**CONCLUSION:** It was concluded that the risk perception of adolescents towards COVID-19 was high, and the student's level of coping was also poor, with the majority of students choosing problem-focused coping methods over emotional-focused coping methods. These findings suggest that, in order to effectively manage present and potential future pandemic emergencies, emotional management and risk reduction methods for adolescents must be considered when developing effective communication strategies.

Keywords: *adolescents; coping strategies; coronavirus; risk perception*

## **E-POSTER PRESENTATIONS 4**

**Friday, October 7th, 08:00-09:00 | Great Hall / Main Hall**

CHRONIC DISEASES

### **43. Developing a transfer program in collaboration with young patients, parents and health care professionals**

**Ena Lindhart Thomsen, Bente Appel Esbensen, Signe Hanghøj, Helena Hansson, Kirsten Boisen**

*Copenhagen University Hospital*

#### **Abstract**

**BACKGROUND:** Transfer from paediatric to adult care for chronically ill adolescents is associated with no-shows and low treatment adherence among adolescents, as well as anxiety and concerns among parents. Studies show that supporting the parents results in better transitions, but there is lack of interventions.

**PURPOSE:** The aim of this complex intervention study was to develop, test and evaluate a transition intervention targeting parents of chronically ill adolescents (aged 16,5 – 17,5).

**METHODS:** The study is based on The UK Medical Research Council's guidance on developing, evaluating, and implementing complex interventions. To increase the program's feasibility and relevance, participatory design was chosen as the overall method in the development. During this phase, a collaborative group of parents, adolescents, and health care professionals were actively involved in the assessment of needs and ideas generation.

**RESULTS:** Together with the collaborative group we developed a comprehensive transfer program called ParTNerSTEPS using workshops, individual interviews, online brainstorms, and multiple pilot tests. The collaborative group were continuously asked to suggest elements in the program and give their feedback on preliminary initiatives. ParTNerSTEPS consists of three different initiatives, 1) an informative website, 2) online educational events and 3) transfer consultations across the paediatric and adult department.

**CONCLUSION:** By incorporating the principles of participatory design in the development phase we ensured that parents' and adolescents' needs were represented and met in the program. Furthermore, we believe, by involving health care professionals, that the feasibility and relevance of the intervention in clinical practice will be improved together with the chances of successful implementation.

The program is being evaluated in a RCT study.

**TRIAL STATUS:** Recruitment started in July 2021 and is ongoing.

CHRONIC DISEASES

### **44. Advocacy for the Implementation of Mental Health Assessment and Support in Healthcare Transition for Adolescents with Chronic Conditions**

**Maxime Morsa.**

*Université Sorbonne Paris Nord*

#### **Abstract**

It is now widely documented in the literature that adolescents with chronic disease have been reported to be more likely to have mental health disorders (depression, anxiety...) and developmental issues (stigma, foreclosed identity...) than healthy adolescents. Healthcare transition is concerned by this statement: in the absence of a formal or developmentally appropriate transition program, depression and anxiety in adolescents are more likely to increase. However, psychological outcomes are rarely reported as a transition outcome and the measuring of psychological outcomes in transitional research is rarely reported. That is why we plead for the introduction of AYAs mental health assessment in HCT and the development of research about it. Healthcare providers could use the *Children's Global Assessment Scale* that aims to measure adolescents' mental health and wellbeing or the *HEEADSSS* (for Home, Education, Eating, Activities, Drugs, Sex, Suicide and affect, safety) in order to explore the impact of the disease on

the daily life. The psychosocial development could be also measured, for example with the *Illness Identity Questionnaire*. Healthcare providers could lead interviews with adolescents in order to complete transition readiness scales and to better understand adolescents experience of the disease, their projects and psychosocial concerns. The *Self-Understanding Interview*, a semi-structured interview guides, can be used featuring qualitative open-ended questions that encourage adolescents to engage in self-descriptions. While there has been highlighted that a typology of adolescents needs helps to elaborate relevant and personalized HCT by healthcare providers, allowing to support adolescents in executive functioning and psychosocial development, the mental health assessment could help to identify adolescents with specific difficulties and adapt interventions in a way to facilitate their well-being during transition from pediatric to adult care.

#### SCHOOL HEALTH

### **45. Educational intervention program in Greek pre-adolescents concerning routine vaccination**

**Athanasios Thirios**

*MSc "Strategies of Developmental and Adolescent Health", School of Medicine, National and Kapodistrian, University of Athens, Greece*

#### **Abstract**

**INTRODUCTION:** School-based intervention programs establish globally good compliance and an increase to the vaccination rates among adolescents. In Greece, the compliance with vaccination national recommendations in adolescence has not yet been sufficiently registered. The goal of the present intervention is to develop community-based material for pre-adolescents and their parents that will enhance their beliefs in vaccines and elevate the immunization rates amongst teenagers.

**METHODS:** The immediate audiences for this intervention were pre-adolescents (age between 9 and 11 years old) and their parents. The intervention was performed after pre-questionnaire testing and parent consent form. First component of our study was to investigate the level of information on vaccinations in pre-adolescents and their parents from six public schools (estimated number: 240 pupils). The second phase will take place one year later, when the parents that received the intervention will be asked to fill a second form, concerning the vaccination status of their children afterwards, in order to examine the impact of the intervention. There will also be a corresponding control group of schools.

**RESULTS:** The primary outcome of our research is likely to be an increase in vaccination knowledge/beliefs and furthermore in vaccination rates. In case where a significant difference with the control group will be estimated, that will confirm our results and goal. Finally, we expect that our informative model will be widely accepted and adopted for application to practice.

**DISCUSSION:** The hypothesis we make is that pre-adolescents knowledge concerning the importance and need of vaccinations will increase after the intervention. We consider that pre-adolescents will understand how necessary vaccines are and will discuss about them with their parents. We believe that the whole program will help parents understand the positive effects of vaccines and will change their attitude. To our knowledge, such programs concerning adolescents, have not been conducted.

Keywords: *vaccines, adolescents, intervention program.*

#### OTHER

### **46. Distinctiveness of adolescents' care through case studies**

**Maria Ovezik, Apostolia Stampouli, Eleni Sakellari, Styliani Giza, Stergianna Douma, Assimina Galli-Tsinopoulou**

*2nd Department of Paediatrics, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, AHEPA University General Hospital, Thessaloniki, Greece*

#### **Abstract**

**INTRODUCTION:** Adolescents have always stood out from other age groups for being subject to greater physical and mental change. Ensuring their well-being and effectively dealing with their issues poses a notable challenge for every health professional.

**AIM:** To demonstrate the necessity of a comprehensive approach towards adolescent care, through the description of three cases treated in our clinic.

**METHODS:**

Case 1: A teenage immigrant girl was brought in for intentional self-harm following a psychologically stressful event. The staff members immediately treated the physical emergency and subsequently ruled out the possibilities of organic disease or exposure to toxic substances and arranged for child-psychiatric intervention and long-term follow up by a mental health facility.

Case 2: An adolescent girl with chronic inflammatory demyelinating polyneuropathy is being hospitalized frequently and receives regular treatment. For the purpose of treating the disease itself as well as the resulting psychopathology, a team consisting of a general paediatrician, a paediatric neurologist, a nurse, a dietician, a child-and-adolescent psychiatrist, a physiotherapist and a teacher work closely together on the case.

Case 3: A teenage boy without a medical history was brought in due to acute alcohol intoxication. As a response, the emergency situation was promptly treated, the necessary toxicological tests were performed, the appropriate medication was given and counselling was provided by a social worker and an adolescent psychiatrist.

**RESULTS:** Each adolescent received individualized and comprehensive treatment of their pathology by a team of trained specialists from our clinic.

**CONCLUSIONS:** In order to ensure the optimal protection of adolescents' health, it is imperative to adopt a multifaceted and multidisciplinary approach towards their problems, as well as to provide the appropriate training of both medical staff and all health professionals.

MENTAL HEALTH

**47. Evaluation of psychotic symptoms in childhood and adolescence**

**Papanikolopoulos P.<sup>1</sup>, Samakouri M.<sup>2</sup> Serdari A.<sup>3</sup>**

<sup>1</sup> *Child and Adolescent Psychiatrist, Mobile Mental Health Unit, University General Hospital of Alexandroupolis, Greece*

<sup>2</sup> *Professor of Psychiatry Democritus University of Thrace, Director of the University Psychiatric Clinic, Alexandroupolis University General Hospital, Greece*

<sup>3</sup> *Associate Professor of Child Psychiatry Democritus University of Thrace, Director of the University Child Psychiatry Clinic, University General Hospital of Alexandroupolis, Greece*

**Abstract**

**BACKGROUND:** Psychotic symptoms often appear in childhood and adolescence. however, without often a disturbance of perception or thinking is documented.

**PURPOSE:** The presentation of the special characteristics of psychotic symptoms in childhood and adolescence as well as their differential evaluation.

**METHOD/MATERIAL:** We performed a literature review of psychotic symptoms in adolescents published in PubMed at since 1 year.

**RESULTS:** We identified 36 studies, included 1 clinical trial, 1 Randomized Controlled Trial, 1 meta-analysis and 2 reviews. Psychotic-like experiences are common in adolescents and their persistence may confer increased susceptibility to psychotic disorder. Genetic factors like 22q11.2 deletion syndrome and related Immune-gene, biological factors like prenatal cannabis exposure, markers of oxidative stress, and CRP are related with onset and symptoms of psychosis. Also, psychological factors like social anxiety disorder, emotional reactivity and regulation impairments and trauma events can contribute at onset of psychosis. Sensitive approaches have be considering in evaluation of psychotic and like-psychotic symptoms and psychosis risk. The presence of perceptual anomalies, bizarre experiences, persecutory ideation and high incidence of depression in first episode of psychosis or like-psychotic symptoms have be considered seriously. Interventions for functional impairments in adolescents and young adults at clinical high risk for psychosis are needed especially social skills training.

**CONCLUSION:** Psychotic symptoms in childhood and adolescence, except of a depressive or psychotic diagnosis, has many causes (biological, social, and developmental). Therefore. the therapeutic approach must include not only pharmaceutical but also intensive psychosocial support of adolescents and their families.

## 48. How did Parisian students with disabilities experience Covid-19 ? An exploratory qualitative study

Alice Weil<sup>1</sup> and Thomas Pernin<sup>2</sup>

<sup>1</sup>Henri Mondor University Hospital, Creteil, France,

<sup>2</sup>Fondation sante des etudiants de France, French Foundation for students' health

### Abstract

**BACKGROUND:** Since March 2020, the daily lives of adolescents and young adults have been organized around health measures aimed at limiting the spread of COVID-19 pandemic. Few studies question the experience of students with motor disabilities. FSEF proposes adapted student houses, including the Parisian *Residence adaptée Colliard (REA)*. This study aimed to explore the experiences of students with motor disabilities since March 2020 during the Covid-19 pandemic within the REA.

**METHOD:** This study combines a literature review and qualitative methodology, based on semi-structured interviews from 1st to 8th March 2021 including students with disabilities, of an average duration of one hour. The data were analyzed using grounded theory approach. A follow-up interview with the REA's social worker put the results in perspective.

**RESULTS:** Four students out of ten invited participated in our study. Remote education brought initial relief but over the months accentuated an impression of impersonal teaching and devoid of social interaction. Adapted student housing has helped to maintain sociability and has contributed to continuity of education and healthcare. The students' perception of how severe contracting Covid-19 would be diminished over time and gave way to weariness towards barrier gestures and rules of social distancing. Students confirmed the lack of media interest regarding disabled people during the pandemic and felt that specific resources offered by universities were lacking.

**CONCLUSION:** This study was limited in its number of participants owing to the pandemic context. Participants suffered from isolation caused by reduced social interactions and anxiety regarding their academic background. Living in an adapted student house helped preventing some of these difficulties. Additional research is needed targeting development of devices promoting autonomy and fulfilment of students with disabilities with specific tools to use during a sanitary crisis.

MeSH terms: *Students, COVID-19, Education, disabilities, Student Housing, qualitative research*

### PUBLIC HEALTH

## 49. A start for coordinated actions aiming adolescents / young adults living and studying next to the Sorbonne via a territorial professional health community: the example of CPTS Paris 5 as a french public health perspective

Thomas Pernin

Fondation sante des etudiants de France, French Foundation for students' health

### Abstract

**INTRODUCTION:** In France, territorial professional health communities (CPTS) bring together professionals from the same territory who wish to organize a health project to respond to local needs and create greater fluidity in healthcare for patients since 2016. Latin quarter is located in the 5th district of Paris. The latter is mainly inhabited by a young population (15-29 years old = 29% of the population). This youth can be explained by the presence of many universities and studios for students. The most precarious populations there are under 30 (20% of this age group). We note that the general practitioners and specialists of this district are close to retirement age: 52.4% of GPs are over 60 years of age, 81.8% of gynecologists are over 60, 76.4% of psychiatrists are over 60 and 50% of pediatricians are more of 60 years. CPTS are an opportunity to address adolescent and young adult medicine issues within ambulatory care. CPTS Paris 5 has been created in June 2022.

**DISCUSSION:** The health project is a prerequisite for contracting between professionals and the regional sanitary agency (ARS). In order to delimit its framework of action and its financing, a Multi-professional Conventional Agreement (ACI) is signed by the unions of health professionals and the National Union of Health Insurance Funds. The first mission concerns access to patient care. The second mission concerns the organization of the patient's healthcare.

The third mission concerns the field of prevention (youth isolation, addiction, STI prevention and screening, cancer prevention campaign).

**CONCLUSION:** A new dynamic identifying young people with difficulties, professionals trained in AYA medicine with affordable care and implementing prevention actions with student's association is born in the heart of Paris thanks to a new public health model.

## PUBLIC HEALTH

### **50. Towards fair funding for adolescent and young adult medicine in outpatient settings: the example of an innovative project at the Centre de Santé Colliard FSEF Paris 5 via the « Article 51 » in France**

**Thomas Pernin**

*Fondation sante des etudiants de France, French Foundation for students' health*

#### **Abstract**

**INTRODUCTION:** Adolescent and young adult medicine is currently not a recognized medical specialty in France. The majority of its practitioners are pediatricians or general practitioners in addition to specialized psychiatrists. A specialized consultation that can last one hour with the HEADSS approach is billable 25 euros by a general practitioner, 28 euros by a pediatrician and 42.5 euros for a psychiatrist if the professional doesn't exceed fees recommended by the *sécurité sociale*. In March 2022, a "contraception-prevention" consultation can be billed 46 euros and only once in the patient's follow-up. Additional remuneration based on public health objectives do not concern the young population specifically. These limitations raise the question of a medico-economic adolescent and young adult medicine approach that is sustainable over time and accessible in an outpatient setting to all young people.

**DISCUSSION :** The Colliard FSEF Paris 5 Health Center is a primary and specialized care center bringing together general practitioners, pediatricians, adolescent and young adult medicine physicians, midwives, gynecologists and psychiatrists in the middle of a living area of more than 100,000 parisian students. This center is contracted with several actors of the educational, social and health fields and participates to the training of future general practitioners and AYA physicians. Our billing process complies with Social Security reimbursement rules and exempts patients to pay directly any consultation fees, which questions the medico-economic balance of the medical center. Article 51 of the Social Security Financing Act for 2018 allows derogations from the billing and pricing rules for all care providers, as well as derogations from the basket of reimbursable care.

**CONCLUSION :** A first request for innovative funding of adolescent and young adult medicine in outpatient settings is currently taking place in France. A population-based capitation system is currently being studied.

## MENTAL HEALTH

### **51. Juvenile delinquency – The role of “psychopathy” traits**

**Papanikolopoulos P.<sup>1</sup>, Kappou K.<sup>2</sup>, Samakouri M.<sup>3</sup> Serdari A.<sup>4</sup>**

<sup>1</sup> *Child and Adolescent Psychiatrist, Mobile Mental Health Unit, University General Hospital of Alexandroupolis*

<sup>2</sup> *Pediatrician, Pediatric Intensive Care Unit, Hippokration General Hospital of Thessaloniki*

<sup>3</sup> *Professor of Psychiatry Democritus University of Thrace, Director of the University Psychiatric Clinic, Alexandroupolis University General Hospital*

<sup>4</sup> *Associate Professor of Child Psychiatry Democritus University of Thrace, Director of the University Child Psychiatry Clinic, University General Hospital of Alexandroupolis*

#### **Abstract**

**INTRODUCTION:** Addressing the health status and needs of delinquent adolescents represents an important issue in the law of minors and their mental health care. Delinquent adolescents face disproportionately higher morbidity and mortality compared to the general adolescent population. However, in the Greek reality, the course of these adolescents is inevitably unfavorable, due to the often lack of cooperation of both the adolescent himself and his family and lack of specialized mental health services.

**METHOD - MATERIAL:** Empirical and bibliographic data on the complex therapeutic psychosocial phenomenon of juvenile delinquency.



**RESULTS:** At the diagnostic level, the "conduct disorder - CD" (a repetitive and persistent pattern of behavior, violation of basic rights and important social norms) and coexistence with the "callous-unemotional traits – CU traits" (restricted affect and low empathy) provides for more serious and persistent antisocial behavior, sometimes self-destructive or aggressive.

**CONCLUSION:** Given the chronic weakness of the family, but also of the resilient individual elements of high risk, judicial type involvement in the treatment process is inevitable. In fact, as the clinical practice has shown, it is necessary the ongoing judicial oversight to motivate the adolescent for staying in treatment and the therapeutic change as an alternative to punishment.

## MENTAL HEALTH

### 52. The contribution of religiosity in the mental health of young people

**Papanikolopoulos P.<sup>1</sup>, Samakouri M. <sup>2</sup>, Serdari A.<sup>3</sup>, Kaprinis. S. <sup>4</sup>**

<sup>1</sup> *Child and Adolescent Psychiatrist, Mobile Mental Health Unit, University General Hospital of Alexandroupolis, Greece*

<sup>2</sup> *Professor of Psychiatry Democritus University of Thrace, Director of the University Psychiatric Clinic, Alexandroupolis University General Hospital, Greece*

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<sup>4</sup> *Associate Professor of 2nd Psychiatry Department, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Greece*

#### **Abstract**

**INTRODUCTION:** Adolescence is a critical, transitional phase of human life. One area of adolescent psychosocial development that is often overlooked is his or her religiosity, which influences and is influenced by that of the parents and their environment in general.

**MATERIAL - METHOD:** A bibliography of the last 5 years was searched in the pubmed database of the terms "religiosity", adolescent and "mental health". 7 articles were found, 2 of which were excluded due to their non-reference to religiosity in their results or conclusions.

**RESULTS:** Adolescents' religiosity is significantly related to the family environment. Adolescents with higher levels of religiosity report better communication with both parents but also higher emotional support from them. In turn, parents with higher levels of religiosity pay more attention to adolescents about their physical health-related behaviors (eg smoking, healthy eating, watching TV).

Religiosity can also be a source of strength in a teenager's highly stressful and unavoidable life situations (eg, refugee, state violence or life-threatening illness) by reducing the negative impact of stressful life events on his or her mental health.

**CONCLUSIONS:** A potentially protective factor, such as religiosity, could play an important role in the adolescent's mental balance in the face of the challenges of the new age flooded with insecurity and uncertainty about the present and the future.

## MENTAL HEALTH

### 53. Effectiveness of a Video-based Psychoeducational Programme in Improving Depression Literacy Among University Students: a randomised controlled trial

**Mohd Zahiruddin Mohd Khairi<sup>1</sup>. Abqariyah Yahya<sup>1</sup>. Nik Daliana Nik Farid<sup>1</sup>. Rafidah Aga Mohd Jaladin<sup>2</sup>**

<sup>1</sup> *Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Jln Profesor Diraja Ungku Aziz, 50603 Kuala Lumpur, Malaysia.*

<sup>2</sup> *Department of Educational Psychology and Counselling, Faculty of Education, University of Malaya,*

#### **Abstract**

**BACKGROUND:** Many students worldwide struggle with depression, which is a major public health concern exacerbated by the COVID-19 pandemic. However, there is currently limited research on the use of a video-based strategy to increase depression literacy among Malaysian students. Further research is therefore required to close

this gap. Hence, the objective of this study is to determine the effectiveness of a video-based psychoeducational programme in improving depression literacy among undergraduate students at the University of Malaya in Malaysia. **METHODS:** The research will be conducted in four phases. The Depression Literacy Questionnaire will be translated into Malay, followed by a need assessment survey to determine the student's need for the psychoeducational video in Phase One. The second phase involves developing the components of the psychoeducation video through focus group discussions with undergraduate students and mental health professionals. A pilot study is part of Phase Three. The effectiveness of the psychoeducational video will be assessed in Phase Four by a randomised controlled trial, with the outcomes measured using the Depression Literacy Questionnaire at baseline, postintervention and 1 month's follow-up.

**DISCUSSION:** The Mental Health Literacy Framework's guiding principles will be used to develop the psychoeducational video. The research will determine whether the psychoeducational video on depression literacy has a greater impact than the conventional lecture method.

**IMPACT:** The importance of depression literacy is being highlighted since it helps to increase understanding of depression, promote help-seeking behaviour, and mitigate stigmatisation. Additionally, it is essential to take preventative measures since depressive symptoms can last for years that does not only result in poor academic performance but also the development of cardiovascular diseases and other non-communicable diseases which may reduce life expectancy.

Keywords: *Depression Literacy, Video-Based, Psychoeducation, University Students, Randomised Controlled Trial*

## MENTAL HEALTH

### **54. Play Therapy as Intervention for School Refusal in Children and Adolescents: A systematic review**

**Anastasia Kourti<sup>1,2</sup>, Charalampos Gourzis<sup>3</sup>, Amanta Karpathaki<sup>2</sup>, Stephanos Vassilopoulos<sup>1</sup>.**

<sup>1</sup>*Department of Educational Sciences and Social Work, University of Patras,*

<sup>2</sup>*MSc "Strategies of Developmental and Adolescent Health", School of Medicine, National and Kapodistrian University of Athens, Greece*

<sup>3</sup>*Open University of Greece (MSc student)*

#### **Abstract**

**INTRODUCTION:** Play therapy is a therapeutic approach that helps children with various difficulties, using play as its main tool. School refusal, on the other hand is associated with various factors, such as shyness, separation or anxiety. Play therapy as intervention aims to help children with school refusal, allowing them to work with their individual difficulties. Although there are a few studies regarding school refusal and play therapy, there is no systematic review combining all the available data.

**METHOD:** Two independent researchers assessed the following databases until 17 June 2022: Scopus, ERIC, DOAJ, Google Scholar, Science Direct, Pubmed, following the PRISMA protocol for systematic reviews. CASP was used for critically appraise case studies, Newcastle-Ottawa was used for cohort studies, and Cochrane tool was used for RCTs. Results: According to the results, six studies were deemed eligible. The studies described the beneficial effect of play therapy in children with school refusal, reducing separation anxiety and disruptive behaviours, leading to enhance school attendance. Due to the low number of the available studies

**CONCLUSIONS:** Play therapy seems to be an effective intervention for school refusal. Yet, there is little data regarding this issue. This systematic review managed to collect the available data as a base for future research.

## **E-POSTER PRESENTATIONS 5**

**Friday, October 7th, 18:00-19:00 | “Alkis Argyriadis” Amphitheatre/Hall A**

SCHOOL HEALTH

### **55. Comprehensive Sexuality Education: Is there one size that fits all?**

**Mamdouh M. Wahba,**

*The Egyptian Society for Adolescent Medicine, Cairo, Egypt*

#### **Abstract**

As adolescents grow up, they have to make several important choices and decisions related to their relationships, and sexuality as part of normal human development. However, many young people all over the world are inadequately prepared to make proper decisions and choices. A large number of them lack the necessary knowledge and proper skills conducive to a healthy lifestyle and safe sexual practices. At the same time, physical and sexual maturity precedes full brain development making adolescents vulnerable to illness and other dangers due to the inability to control emotions or foresee consequences. As such, many communities face a large burden of ill health as a result of unhealthy sexual and reproductive practices and behaviors including unwanted and early pregnancies, unsafe abortions, sexually transmitted infections and gender-based violence. Young people need and require age-appropriate and culturally sensitive sexual education in order to provide them with the knowledge and skills that make them able to navigate safely through the critical phase of adolescence. This has been concluded as a well evidence-based fact in many global societies. School-based programs can reach large number of young people and are very cost-effective to provide this education. Out-of-school young people should also be catered for. Findings from a desk review of a number of sexuality education programs globally indicate that there has been a persistent and wide debate around this issue in many communities. The controversy is mainly due to socio-cultural sensitivity or lack of political will. This has left many young people in the dark and prevented them from getting their needs and rights for sexual and reproductive health information and services. It is suggested that certain precautions and actions be taken during the design and implementation of sexual education programs that could ease sensitivities regarding the subject and make them more appealing to all stakeholders- in a diverse global context- and ensure that no one is left behind.

*Key words: Sexuality Education, Adolescents, Reproductive Health, Culture and traditions, Comprehensive sexuality education, Global landscape*

OTHER

### **56. Children’s Rights Through Greek Art**

**Eleni Papamichalaki**

*1st Junior High School of Petroupoli*

#### **Abstract**

We are pleased to present the work of 2<sup>nd</sup> Grade students of the 1st Junior High School of Petroupoli in the context of the school's participation in the Erasmus KA3 Teachers4Europe Program “Setting an Agora for Democratic Culture”, under the theme “Preventing bullying, safeguarding Children’s Rights.” Our journey into the wonderful world of the Rights of the Child began in the school year 2019-2021 and ended this school year (2021-2022). Our main goals were to enhance a) student understanding of and respect for human rights with a focus on children's rights, and b) student awareness on issues related to bullying and child abuse. We first familiarised students with the Convention on the Rights of the Child and helped them understand its fundamental principles. The activities carried out under the program were a source of inspiration for our students, who wanted to give another, more creative dimension to the Convention on the Rights of the Child and chose to present the Rights of the Child through the works of Greek painters. The main resource used was the Greek National Aggregator for Digital Cultural Content ([SearchCulture.gr](http://SearchCulture.gr))

and our objective was to make the presentation to go beyond national borders while fostering sensitization on children's rights through the medium of Greek art.

Keywords: *children's rights, bullying, abuse, art*

OTHER

## **57. Eating disorder visits increase among adolescents during the COVID-19 pandemic**

**Sinem Akgül, Şeyma Torun, Hande Çınar, Melis Pehlivan Türk Kızılkın, Orhan Derman**

*Hacettepe University*

### **Abstract**

**BACKGROUND AND AIM:** The Covid-19 pandemic has led to an increase in the demand for mental health services among youth worldwide and within this group there has been a significant increase in the prevalence of eating disorders (EDs) thought to be exacerbated by the pandemic. The study aimed to assess changes in adolescent visits due to EDs during the pandemic.

**METHOD:** A retrospective evaluation of adolescents diagnosed with an ED during 2 periods: June 2019-February 2020 (pre-pandemic) and June 2021-February 2022 (during the pandemic) was conducted. The number of patients diagnosed with an ED between these dates and the ratio of these patients to all applications were calculated. Baseline data for patients with Anorexia Nervosa (AN) and requirement of hospitalization for all cases were compared.

**RESULTS:** Of the 3708 visits in the pre-pandemic period 46 (1.2%) were diagnosed with an ED. This was 69 (2.2%) of 3149 visits during the pandemic and the difference was statistically significant ( $p=0.003$ ). Ratio of males to females changed from 1:46 (2.2%) to 8:69 (11.6%) ( $p=0.065$ ). Distribution of ED diagnoses did not change ( $p=0.331$ ), although the ratio of atypical AN cases increased from 6.5% to 17.4%. Baseline data of patients with AN and ratio of cases hospitalized for medical stabilization did not change ( $p=0.512$ ).

**CONCLUSION:** Our study supports the data that adolescents may be particularly vulnerable to developing EDs during the COVID-19 period and changes due to the pandemic may have acted as the trigger. The study particularly underlines the importance of early intervention in males and those with atypical ED.

Keyword: *Eating disorders, COVID-19, Pandemic*

MENTAL HEALTH

## **58. Postpartum depression and ADHD in the offspring: Systematic Review and Metaanalysis**

**Vasileia Christaki, Ioanna Ismirnioglou, Asimina Katrali, Eleni Panagouli, Efthalia Tzila, Loretta Thomaidis, Theodora Psaltopoulou, Theodoros N. Sergentanis, Artemis Tsitsika**

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### **Abstract**

**BACKGROUND:** Postpartum depression (PPD) is a disorder that has a severe impact on a woman's mental state and mood after birth. Research has shown that postnatal levels of family adversity and maternal psychopathology are associated with Attention Deficit Hyperactivity Disorder (ADHD). This paper is intended to examine the association among maternal PPD and the risk of ADHD in the offspring.

**METHODS:** Keyword search was conducted for PsycINFO, PubMed, Google Scholar, and Embase up to Feb 28, 2021; studies in English were deemed eligible. Random-effects meta-analysis and meta-regression analysis took place. Subgroup analyses by study design, geographical region, level of adjustment and study setting were performed.

**RESULTS:** Nine cohort studies and two case-control studies published from 2003 to 2019 were included in the qualitative synthesis; among them, eight studies were synthesized in the meta-analysis. Overall, maternal PPD was associated with an increased risk of ADHD in the offspring (pooled relative risk,  $RR=1.69$ , 95%CI: 1.27-2.26). Significant associations were noted in the subsets of cohort studies, studies implementing multivariate analyses and registry-based surveys.

**LIMITATIONS:** Overall, a larger number of studies of the field are needed. Data collection relied on self-report and attrition bias limited the validity of eligible studies. Studies from developing countries were underrepresented. There was significant publication bias ( $p=0.035$ , Egger's test).

**CONCLUSIONS:** The relationship between PPD and ADHD in children was found to be significant in this systematic review and meta-analysis and reveals the need for further investigation in various geographical regions.

Keywords: *quantitative synthesis; neurodevelopmental disorders; maternal health; meta-regression*

OTHER

## **59. Physical Activity of Children and Adolescents: A Systematic Review of Studies in Greece**

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### **Abstract**

**Objective:** The current systematic review aimed to explore children's and adolescents' physical activity (PA) levels in Greece, aged 6 to 18 years old. It was conducted with keywords ("*physical activity OR exercise AND children OR adolescents OR youth AND cross-sectional OR longitudinal OR prevalence AND Greece OR Hellas OR Greek*") in seven databases (*Academic Search Ultimate, APA Psych Info, ERIC, PubMed, Medline, Scopus, Sport Discus*), seven online journals of physical education and sport science published in Greece or Cyprus (*Sports & Society, Inquiries in Sport & Physical Education, Kinesiology, Hysplex, Physical Education & Sport, European Psychomotricity Journal, The Journal of Physical Activity, Nutrition & Rehabilitation*), and in other sources [World Health Organization (WHO), scientific journals out of the above databases].

**Results:** In total, 92 studies met the inclusion criteria and analyzed. Eighty-six were cross-sectional studies and six longitudinal studies. To record youths' PA levels, 71/92 studies used self-report questionnaires, 15/92 wore motion sensors, 9/15 used motion sensors and self-report questionnaires simultaneously. In addition, boys, younger children, athletes, and people from non-urban areas were found to be more physically active than girls, older children, non-athletes, and people living in urban areas, respectively. Regarding the percentage of young people who met the WHO recommendations for regular PA or the differences in the PA levels of young people due to their BMI, the results were ambiguous. The different results observed between studies may be due to the different ways in which young people's PA levels were recorded, to the representativeness of the sample and to the different characteristics of the sample.

**Conclusion:** The results of the present systematic review might be a useful guide for researchers, Physical Education teachers, medical staff, parents, and other social policy makers in Greece to carry out more actions and intervention programs aimed at increasing youth's PA levels.

CHRONIC DISEASES

## **60. An Adolescent Patient with Gitelman Syndrome, Obesity, and Insulin Resistance**

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### **Abstract**

**INTRODUCTION:** Gitelman syndrome (OMIM: #263800) is a rare autosomal recessive renal tubular salt-wasting disorder characterized by hypokalemia, metabolic alkalosis, hypomagnesemia, hypocalciuria and secondary hyperaldosteronism. Genetic basis of Gitelman syndrome (GS) has been ascribed to biallelic mutations of the solute carrier family 12, member 3 (*SLC12A3*) gene, which encodes a thiazide-sensitive sodium-chloride cotransporter. Interestingly, GS is associated with impaired insulin secretion and sensitivity, and a higher prevalence of diabetes mellitus type 2 (DM2), possibly through pathophysiologic mechanisms mediated by hypokalemia, hypomagnesemia, and hyperaldosteronism.

**METHODS:** We present the case of a 12.4-year-old boy referred to our Outpatient Clinic for the Prevention and Management of Childhood Obesity. The patient was diagnosed with GS at the age of 8 years, when he was confirmed to carry a missense mutation and a deletion of *SLC12A3* on different chromosomes. He has been followed up by a Pediatric Nephrologist and has been on treatment with spironolactone and magnesium and potassium supplements. On initial clinical evaluation, he was obese (BMI z-score: 2.5) and at the onset of puberty (G2, P3, A2, testicular volumes: 4-5mL bilaterally).

**RESULTS:** Endocrinologic evaluation, including OGTT, revealed elevated insulin concentrations and insulin resistance [OGTT: plasma glucose: 118mg/dL at 120', maximum insulin concentrations ( $\mu$ IU/mL) 192.8 at 30', 141.6 at 120'; HbA1C: 5.1%, HOMA-IR: 2.8, QUICKI: 0.33]. A multidisciplinary personalized lifestyle intervention was implemented, and treatment with metformin was initiated. Despite a significant decrease in adiposity (BMI z-score: 1.56) by the age of 15.9 years, the patient had persisting insulin resistance (fasting plasma glucose: 83mg/dL, insulin: 21.7  $\mu$ IU/mL, HbA1C: 4.6%, HOMA-IR: 4.45, QUICKI: 0.31).

**CONCLUSIONS:** Gitelman Syndrome is characterized by an increased risk of DM2, while there is a three-fold increase in fasting insulin concentrations with an increased BMI compared with controls. Therefore, it is important to implement a comprehensive, multidisciplinary, personalized management plan early to address the onset of obesity and its metabolic complications.

OTHER

## **61. French Young Professionals in Adolescent Health Network: a Paediatric Residents' Initiative**

**Guillaume Groffe, Mariana Marin, Nour Ibrahim**

*APHP, CH Rives de Seine, CESP*

### **Abstract**

In French medical studies, adolescent health is underdeveloped: paediatric residents only have 5 hours of classes during their entire curriculum about this subject. There are few internship sites in adolescent medicine and not many interactions between young professionals working in these units, in primary care, school medicine or social services dealing with adolescents. Inspired by the IAAH Young Professionals Network, we have decided to create a French network.

A real challenge: how to link different young professionals from different fields across France? Launched by a small group of Paris based paediatric residents, we presented our project at each paediatric congress beginning with autumn 2021. Our network was endorsed by the French Society for Adolescent Health. We belong to it and participate to its board while keeping our autonomy.

We have been well received by the paediatrician community and joined by many young professionals from different fields. Through this network, we promote the communication on adolescent medicine to residents and medical students. We use social media to spread awareness about adolescent health in France and connect adolescent health professionals. Our project is to host conferences facilitated by and aimed at young professionals, as this may inspire some to embrace the challenge of adolescent health. Another goal is to promote peer associations for adolescents having a chronic condition. Lack of time is a main difficulty: we have a lot of academic obligations and a major attendance at hospital.

This young initiative has for purpose to give a new momentum to the French Society for Adolescent Health. Connection and exchange will be our greatest assets to take care of adolescents. We hope this network can participate in shaping the next generation of French adolescent professionals.

OTHER

## **62. Disorders of Sex Development and Social Stigma in 21st Century: A Pilot Study**

**Kalliopi Kappou<sup>1</sup>, Myrto Ntougia<sup>2</sup>, Panagiotis Papanikolopoulos<sup>3</sup>, Zacharoula Karampouta<sup>4</sup>**

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## Abstract

**INTRODUCTION:** Atypical genitalia either isolated or combined with other malformations, consist of a mayor problem for affected individuals and their families. Children with disorders of sex development (DSD) are in need not only of the hormonal therapy but also from the phycological support to embrace their problem and deal with it. The same support is mandatory for the family too. The aim of this study is to assess the psychosocial problems children with DSD and their families are facing, as well as to make a comment about the social stigma these families get, even nowadays.

**METHOD:** We conducted a questionnaire in order to assess the social stigma families of children with DSD, are facing in our country even in 2022. Both parents, of each patient are requested to complete our questionnaire individually and in privacy.

**OUTCOME:** Four children and their families participated, till today. Three boys (two pubertal and one prepubertal) are having gonadal dysgenesis (bilateral testicular agenesis) and the fourth adolescent is diagnosed with Klinefelter syndrome, suffering from hypergonadotropic hypogonadism. All of them come from rural areas. According to the questionnaire and the results from the answers, an important divergence exists between the parents. It seems that the mothers are showing a better awareness of their children health issue and a greater acceptance of their situation. All the participants state that they feel their families stigmatized by local societies due to their children's situations. Fathers are facing bigger difficulties in accepting their sons' problems than mothers do. Furthermore, they recognize that, they are in need for a better psychological support for them and their family members as well as a greater financial support from the government.

**CONCLUSION:** Despite the progress our societies have made in accepting diversity, it seems that social stigma still exists and disturbs everyday life of affected individuals and their families. It is our obligation as health care workers to better inform society about these situations and provide a holistic support to these children and their families.

OTHER

### 63. Youth friendly health services in Greece

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## Abstract

**INTRODUCTION:** Maintaining and enchasing adolescent's wellness, could be one of the contributing factors in their lives. Wellness is referred not only in the absence of illness, but also in preserving functionally in all aspects such as physical, mental, social, emotional or sexual. WHO set the guidelines for establishing youth friendly health services (YFS), in order to provide fair, effective and accessible health services for adolescents and youth. In Greece, the existence of YFS is under-representative. Concerning the modern reality, the establishment of YFS is deemed necessary. The purpose of this study is the design, development, organization, evaluation and supervision of YFS, which would set the example for establishing more YFS across Greece.

**METHODS:** The study would be conducted in two parts. In the first part, the development of YFS would start experimentally in two Municipalities of Attica with the training of health professionals, such as pediatricians, doctors, children psychiatrists, children psychologists, social workers, nutritionists, special educators etc., through innovative methods of distance learning. In the second part, alongside with educational process, YFS would be organized and start operating, providing not only health but also psychosocial support services in youth. The completion of this study would be set approximately in three years from its approval.

**CONCLUSIONS:** This study should benefit youths aged from 10 to 24 years old, aiming in maintaining their well-being, through holistic approach of their physical and mental health. Approaching not only youths, but also their parents/carers, could provide positive results in their lives. The training of health professionals in addressing health related issues in youth may create a safer ground for youth to deal with their problems. In conclusion, the establishment of YFS in Municipalities of Attica, could potential provide with numerous health and social benefits the citizens of Greece.

OTHER

## 64. Maternal Mid-upper Arm Circumference as a Predictor of Low Birth Weight Outcome Among Newborn Deliveries of Adolescents in a Tertiary Level Hospital

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### Abstract

**BACKGROUND:** Maternal malnutrition is a major cause of low-birth-weight (LBW) newborn outcome among adolescent mothers. It is one of the key drivers of child stunting and initiates a vicious cycle of intergenerational malnutrition. The body mass index prior to pregnancy or at the initial trimester is currently being used to establish the desired weight gain all throughout gestation. However, adolescents often delay their first antenatal visit. Without a baseline weight, the establishment of nutritional status is often challenging. Mid-upper arm circumference (MUAC) was proven to be a good proxy measure of acute malnutrition however there was no established global cut-off point to determine pregnant adolescents at risk for delivering LBW babies.

**METHODS:** A cross-sectional study was conducted among adolescent ages 10 to 19 years who delivered babies in a tertiary hospital in the Philippines for a period of six months. Maternal MUAC and LBW outcome were documented, and their association determined using a logistic regression analysis. To measure diagnostic accuracy, the sensitivity, specificity and the area under the curve were taken for each MUAC point. A receiver operating characteristic (ROC) curve was used to aid the MUAC cut-off determination.

**RESULTS:** Out of 237 newborn deliveries, 35% had LBW, while 65% had normal birth weight. The crude association for the MUAC cut-offs <23.00cm, <23.50cm and <24.00cm and LBW showed a significant value of 2.19, 2.25 and 2.39 at 95% CI respectively. However, it is only the cut-off <24.00 cm that showed significant result for adjusted association. The MUAC cut-off <24.00cm also showed a better trade off value between the sensitivity and specificity. Furthermore, the optimal maternal MUAC measurement that predicts LBW newborn outcome points to <24.00cm cut-off based on the ROC curve.

**CONCLUSION:** This study shows that the maternal MUAC is predictive of low-birth-weight outcome among adolescent deliveries. A MUAC cut-off of <24.00 cm was superior to lower cut-offs studied. The pregnant adolescents might need higher MUAC cut-off than adults to allow timely intervention and prevention of poor neonatal outcome. By doing this simple screening test, suspected pregnant adolescent can be easily identified and referred for further confirmatory testing.

CHRONIC DISEASES

## 65. Puberty in boys with type 1 Diabetes Mellitus: what changed?

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### Abstract

**INTRODUCTION:** In children with diabetes mellitus type 1 (T1DM) delayed onset of puberty has been reported. However, current evidence tends to overturn these data.

**AIM:** To study the age of pubertal onset and secular trend in Greek boys with DM1.

**MATERIALS AND METHODS:** A total of 85 boys with T1DM visited the Outpatient Clinics of the 1st and 2nd Department of Paediatrics of Aristotle University of Thessaloniki from March until June 2022 were enrolled. Demographic and anthropometric data were recorded during the follow-up visit. A volume of testis greater than 3ml was indicative for the onset of puberty.

**RESULTS:** The mean age of patients during this record was  $12.37 \pm 3.82$  years old while the age of the initial diagnosis was  $7.46 \pm 3.52$  years. In 43 (50.59%) patients diabetic ketoacidosis was recorded as first manifestation of T1DM. Since



26/85 boys were prepubertal and 10/85 developed T1DM after the onset of puberty, 49 boys were included in the group of patients with a pubertal onset after the diagnosis of T1DM. Their mean age at pubertal onset was  $10.51 \pm 1.35$  years. Precocious puberty (<9 years) was observed in 5/49 (10.2%), early puberty (<10 years) in 15/49 (30.61%) and 31/49 (63.27%) entered in puberty before the age of 11 years. No delayed puberty was recorded among boys with T1DM. A significant amount of earlier puberty was recorded in patients being born in 2011 and 2010 indicating an early puberty initiating during the first months of COVID-19 lockdown (Figure 1).

**CONCLUSIONS:** The present study suggests that a considerable number of boys having T1DM appear to develop precocious and early puberty. This raises thoughts regarding their diabetes management and their final height. More studies are needed to confirm these results based on these preliminary data and to clarify potential pathological mechanisms underlying this trend.

## CHRONIC DISEASES

### 66. Prevalence of Medication Non-adherence among Sickle Cell Disease Adolescents in Nigeria

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#### Abstract

**BACKGROUND:** Non-adherence is linked to greater rates of morbidity and mortality as well as higher expenses for medical care. Consequently, increasing medication adherence is critical for the continuous wellbeing of sickle cell patients. This study examined the prevalence of medication non-adherence among sickle cell disease adolescents and the associated factors.

**METHODS:** Using a cross-sectional study design and a purposive sampling method, 122 sickle cell adolescents were recruited for this study. Using the 8-item Morisky Medication Adherence Scale (MMAS-8), we assessed medication adherence and categorised the results (scoring 6 = low adherence, scores 6 - 8 = medium adherence, and > 8 = high adherence). The data were analyzed using STATA version 14.0.

**RESULTS:** About half of the respondents were females (58.2%) and the ages of the respondents ranged from 11-19 years with a mean of  $15.7 \pm 2.32$ . According to the responses, about 42% of patients stated that they do forget to take their medications and are careless (45.90%) about taking their medicine. The prevalence of high adherence to medication was 55 (45.1%). The prevalence of moderate and low adherence levels was observed to be 60 (49.2%) and 7 (5.74%), respectively. A higher proportion of non-adherent participants were females, but there was no significant difference among the adherence levels (P-value = 0.954). Non-adherence was significantly associated with the age of the participants (P-value = 0.003). Participants with high adherence levels were older than those with other adherence levels. The majority of adolescents (81.7%) living with parents were high adherents, while 14.3% were low adherents. However, there was no statistically significant difference with respect to this P-value (0.791).

**CONCLUSION AND RECOMMENDATION:** Almost half of the adolescents with sickle cell disease demonstrated high medication adherence. Interventions targeted at improving medication adherence among sickle cell adolescent patient should consider family related factors with special attention given to younger adolescents.

Keywords: *adolescents, sickle cell disease, medication non-adherence*

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