

## EPP630

# Prediction of Mental Health Problems Among Children Using Machine Learning Techniques

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**Introduction:** Developmental language delay in children is characterized by the qualitative and quantitative underdevelopment of vocabulary and insufficient expressive language skills. These delays frequently co-occur with mental health issues including the emotional and behavioral sphere difficulties and it may result in adaptation difficulties in school. A multifactorial etiology has been identified for developmental language delay, highlighting the necessity for early prediction and intervention tools. The early prediction of speech and language delays in children under one year of age can help to prevent complications of the existing impairments in future.

**Objectives:** To develop an algorithm of developmental language delay prediction in toddlers, based on anamnesis data.

**Methods:** The training dataset had been collected from anamnesis of 232 children aged 18 till 36 months. Signs of developmental language delay had been presented in 50% children; typical language development had been presented in the other half of the sample. The neural network architecture had been developed using the Python 3.0 programming language and the Keras library. The compiled neural network had been trained on data which represented anamnesis of children under 1 year old. 70% of the collected data array were used for neural network training, 30% were used for validation.

**Results:** The algorithm architecture consisted of direct propagation neural network of 5 Dense layers. A one-dimensional tensor of 58 values had been fed to the input of the network. At the output, the value of the probability of developmental language delay had been obtained. During 1000 of training iterations the accuracy of 95% had been achieved. Sensitivity and specificity of the model reached 95% and 100%, respectively.

**Conclusions:** For the first time in the world, a neural network model of predicting the developmental language delay in early age children had been developed. This model considers data of intra-uterine period of development, as well as the life of a child up to 1 year. It may help to prevent severe mental disorders which are comorbid to speech disorders.

**Disclosure of Interest:** None Declared

## EPP629

# Gender-Specific Manifestations and Diagnostic Challenges of Autism Spectrum Disorder in Women: A Focused Study

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**Introduction:** Autism Spectrum Disorder (ASD) is often under-diagnosed in women due to gender-specific manifestations and the use of diagnostic criteria primarily based on male presentations. This underdiagnosis can lead to delayed or inadequate support and interventions for women with ASD. There is a growing recognition of the need for gender-sensitive diagnostic approaches to better identify and support women on the spectrum.

**Objectives:** This study aims to explore the unique manifestations of ASD in women, identify key diagnostic challenges, and propose recommendations for refining diagnostic criteria to improve accuracy and timeliness of diagnosis in female populations.

**Methods:** A mixed-methods approach was employed, combining quantitative data from standardized ASD diagnostic tools (e.g., ADOS-2, ADI-R) and qualitative data from in-depth interviews with 50 women diagnosed with ASD. Participants were recruited from clinical settings and ASD support groups. Data were analyzed using thematic analysis to identify gender-specific behavioral patterns and diagnostic challenges, while statistical analysis compared symptom presentation between male and female groups.

**Results:** Women with ASD exhibited distinct behavioral patterns, such as enhanced social masking abilities, higher levels of camouflaging, and differences in special interests compared to men. Table 1 highlights the frequency of common ASD symptoms in women vs. men, demonstrating significant differences in social communication ( $p < 0.05$ ) and repetitive behaviors ( $p < 0.01$ ). Table 2 illustrates the discrepancy in diagnostic ages between genders, with women receiving a diagnosis on average 5 years later than men. Table 3 outlines the diagnostic tools used and their respective sensitivity rates for female ASD presentation. Figure 1 visually represents the comparative analysis of symptom profiles by gender, showing a higher prevalence of internalizing symptoms in women.

**Conclusions:** The study confirms that ASD in women often presents differently, leading to significant diagnostic delays and under-diagnosis. Gender-specific manifestations, such as social masking and camouflaging, challenge the current diagnostic criteria, which are largely based on male-centric data. To improve the diagnosis and care of women with ASD, it is crucial to adapt existing diagnostic tools to account for these gender differences and develop new guidelines that reflect a broader spectrum of presentations.

**Disclosure of Interest:** None Declared

## EPP630

# Use of attention deficit hyperactivity disorder medication among Danish children and adolescents from 2010-2020

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**Introduction:** To ensure rational drug use, there is a need to continuously monitor the use of medication for attention deficit hyperactivity disorder (ADHD) among children and adolescents.

**Objectives:** The aim was to describe the use of ADHD medication among Danish children and adolescents.

**Methods:** We used data on filled prescriptions of ADHD medication to Danes aged 5-17 years between 2010 and 2020. We calculated the incidence rate, and prevalence proportion, and described treatment duration, age at initiation, prescriber type, and concurrent use of psychotropic medication. Analyses were stratified by age and sex.

**Results:** The incidence rate of ADHD medication use followed a u-shaped pattern among boys from 2010-2020. This was most pronounced for boys 10-13-years old, with an incidence rate of 0.62 per 100 person-years in 2010, decreasing to 0.35 in 2013, and rising to 0.59 in 2020. The incidence rate among girls increased continuously from 2010 to 2020. The prevalence proportion increased in girls from 0.65% in 2010 to 1.04% in 2020 and in boys from 2.22% in 2013 to 2.65% in 2020. Girls started ADHD medication later than boys (median age 13 vs 11). Child- and adolescent psychiatrists issued 90% of initial prescriptions in 2010 with an increasing proportion over time. Sixty-four percent of 5-9-year-olds and 43% of 10-13-year-olds were covered by an ADHD prescription after five years compared to 27% of 14-17-year-olds. Approximately 20% users in 2020 had concurrent use of other psychotropic medication.

**Conclusions:** Use of ADHD medication increased in Denmark from 2010-2020. The steady increase in use among girls likely reflect an increased awareness of ADHD in girls. However, the delayed treatment onset in girls should be a focus of attention.

**Disclosure of Interest:** None Declared

## EPP631

### Victimization in Youth with Autism Spectrum Disorder in Tunisia: Prevalence and Associated Factors

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**Introduction:** Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that attracts interest, fascination, and controversy. Due to their developmental characteristics that hinder autonomy and socialization, children with ASD appear to be vulnerable and prone to victimization. Indeed, victimization has severe consequences for these children, who face risks of rejection and stigmatization. However, research on this phenomenon in Tunisia is still limited, highlighting a significant gap in the current knowledge base.

**Objectives:** Our study aimed to determine the prevalence of victimization among children and adolescents with ASD consulting at the Regional Rehabilitation Unit of Monastir- Tunisia and identify the associated factors.

**Methods:** This is a cross-sectional analytical study. It included children and adolescents with ASD aged between 5 and 18 years consulting at the Regional Rehabilitation Unit in Monastir during the year 2023. Sociodemographic and clinical data of the children were collected using a pre-established form created by the working group. We used the Juvenile Victimization Questionnaire ScreenerSumVersion (JVQ-SSV) to assess childhood victimization and major forms of aggression against youth.

**Results:** Our study included 74 participants, demonstrating a male predominance with a sex ratio of 6.4. The average age of the patients was 9 years, ranging from 6 to 14 years. The main results of our study showed that participants with ASD are particularly vulnerable to victimization, with 77% having experienced at least one victimizing event in their lifetime and nearly 69% in the past year. The most commonly reported victimization events included bullying (56.7%), peer or sibling aggression (50%)... Our results revealed that 56.2% of these incidents occurred at school. Additionally, nearly 46% of children with ASD were reported by their parents to be perpetrators of victimization towards other. Univariate analysis identified significant factors associated with victimization, including the parent's age, attendance at specialized education centers, and being a perpetrator of victimization.

**Conclusions:** The social inclusion of children with ASD, though crucial, remains fragile amid widespread victimization in both school and family environments. The concerning repercussions of these experiences necessitate focused efforts to develop and implement strategies that safeguard and support these children. Addressing the multifaceted nature of victimization and promoting protective measures are essential for improving their well-being and fostering a more inclusive environment.

**Disclosure of Interest:** None Declared

## EPP632

### Can Executive Functions and Severity of Attention Deficit Hyperactivity Disorder Predict Symptom Levels of Developmental Coordination Disorder in Children with Attention Deficit Hyperactivity Disorder? a Preliminary Study

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**Introduction:** Attention Deficit Hyperactivity Disorder (ADHD) is a childhood-onset disorder characterized by symptoms of attention deficit, hyperactivity and impulsivity, and executive functioning difficulties. Developmental Coordination Disorder (DCD) is a neurodevelopmental disorder that involves motor coordination problems with frequent difficulties in movements that most typically developing children can easily accomplish. The most common comorbidity accompanying DCD is ADHD. It has been reported that DCD frequently accompanies ADHD even if it is not at the diagnostic level and may cause loss of functionality in daily life. In this study, we aimed to investigate the relationship between DCD