EPP627

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 intrauterine 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 underdiagnosed 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 underdiagnosis. 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.

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EPP630

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

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