PAEDIATRIC ATTENTION DEFICIT/HYPERACTIVITY DISORDER APPLICATION SOFTWARE (PANDAS)

A TABLET BASED GAME AIMED AT DISTINGUISHING BETWEEN SPECIFIC NEUROPSYCHIATRIC DISORDERS AND LEVEL OF COGNITIVE FUNCTIONING IN CHILDREN AND ADOLESCENTS
A novel method for the identification and monitoring of neuropsychiatric disorders

BRIEF DESCRIPTION

Children suffering from Attention Deficit Disorder (ADD) with or without hyperactivity (ADHD) are typically presented with problems such as lack of concentration, inattentiveness, poor memory, no sense of time, poor social skills and low self-esteem. The incidence of ADD/ADHD and Autism Spectrum Disorders (ASD) varies between populations, as well as within social groups. Between 2% - 5% of the population are reported to be affected internationally.

The diagnosis of ADD/ADHD is to a large extent based on subjective techniques such as the Conner’s or Swan assessment, psychological assessment, and feedback from parents and teachers. It is most desirable to ascertain the effectiveness of medication for these disorders in order to determine the correct diagnosis of ADD or ADHD, to limit side effects due to overdose, to curb costs, to determine whether the dose should be increased as a child grows older, and to determine which drug works more effectively, for example stimulant versus non-stimulant types of drugs.

TECHNICAL DESCRIPTION

PANDAS is a novel method used for the identification and monitoring of neuropsychiatric disorders through specific features, scenarios and machine learning algorithms, resulting in a probability score. The algorithms of the application are designed to incorporate all the specific parameters required by each disease entity. The algorithms also interpret the psychological tests pertaining to each disease entity in terms of all the defined parameters. The weight allocated to the defined parameters aid in the final qualification (and quantification) of each individual parameter correlating to the disease entities. The validation of these pre-defined weighted parameters within the algorithm are concluded through clinical testing and supported by artificial intelligence multi-dimensional assessment.

INNOVATION STATUS

A proof of concept and prototype has been developed.


VALUE PROPOSITION/ BENEFITS

PANDAS is a novel method used for the identification and monitoring of neuropsychiatric disorders through specific features, scenarios and machine learning algorithms, resulting in a probability score. The information is used by patient, parent as well as medical practitioners to assist in the diagnostic process, better monitor treatment, progress and medication as well as collectively and anonymously being used to better support the results with statistical data.

COMPETITIVE ADVANTAGE

• The use of quantitative algorithms and scenarios to detect neuropsychiatric disorders, instead of using standard testing methods
• The algorithms and scenarios are implemented as a game on a handheld device
• The use of artificial intelligence to validate the algorithms and scenarios

TARGET MARKET(S)

• Clinical psychologists
• Paediatricians
• Teachers
• Parents
• Psychiatrists

PRINCIPAL RESEARCHERS

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