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## EVALUATION AND DIAGNOSIS OF ADHD WITH K-MEANS AND FUZZY K-MEANS DATA MINING CLASSIFIERS

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### Abstract

Attention Deficit Hyperactivity Disorder (ADHD) is a disorder among children which needs an early diagnosis. The projected work comprises disorder factors, demonstration, evaluation and diagnosis process. This issue is prevalent among many children and a great burden on their parents. Hence, the method has drawn interest from the areas of both health and education. The ADHD is a cerebral disorder which has more impact on school children's life and this becomes evident they have difficulty in controlling their behavior and concentrating on anything for long. Hence these types of children can be classified based on two types such as: a) Non – ADHD and b) ADHD. The data mining algorithms will do a significant job in classifying the types. The existing approach deals with the K-means clustering to perform classification. But the existing method faces more problems with classification as well as accuracy. Hence, the data mining algorithm called “Fuzzy k-means” method is employed to analyze and examine the ADHD projected here. It involves two steps – preprocessing and classification. First the given data are preprocessed to eradicate the noisy, redundant and incompatible data. Hence, the preprocessing is executed by Support Vector Machine (SVM). After preprocessing, the samples of ADHD are again classified and it is divided into moderate ADHD (ADHDmod) and high ADHD (ADHDhigh) sets. When integrating the SVM with Fuzzy k-means clustering algorithm, the performance measures are evaluated in terms of accuracy, specificity and sensitivity. The results show that the projected work offers a better accuracy rate when comparing it with K – means clustering algorithm.

### Author Keywords

ADHD, K – Means, Fuzzy K – Means, Support Vector Machine

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