Title: Prediction of Bangladeshi Urban Children's Mental Health for the Effect of Mobile Gaming Using Machine Learning

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Abstract: The popularity of mobile gaming is increasing globally, fueled by technological advancements, high-quality smartphones with gaming features, and widespread internet access. A large number of young people and also children are mainly involved in different types of mobile gaming, primarily online mobile gaming, which is a matter of concern for society. This addiction leads to various psychological issues, including mental health problems, loneliness, introversion, insomnia, and a lack of self-control. Bangladesh's lack of public mental health facilities exacerbates this challenge, particularly in rural areas. To address this issue, we have developed a machine learning model to predict the level of mental health issues faced by Bangladeshi urban children due to gaming addiction. A total of 1996 data were collected from urban parents about their children's gaming activities and categorized them as 'Serious,' 'Partial,' and 'Normal.' The dataset was then split into a 70:30 ratio for training and testing purposes. K-Nearest Neighbors (KNN), Support Vector Machine (SVM), Multinomial Naïve Bayes, & Random Forest were applied as the machine learning approaches for prediction. Here, the Support Vector Machine gives good accuracy (92.75%), and other classifiers have different accuracy. The research highlights the significance of addressing gaming addiction in children and the potential of machine learning technology in predicting mental health issues, particularly in the absence of public mental health services. The study concludes by proposing the expansion of the research to include smartphone and mobile gaming addiction among Bangladeshi rural children and ensure a holistic approach to tackling the broader issue of technology-related addiction.

Key words: Prediction; machine learning; child mental health; gaming addiction; SVM.

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