Intelligent Well-Being Monitoring Of SEND Pupils with Emotional and Behavioural Disorders Using the Grist Digital Decision Support System

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Abstract

UNICEF emphasises the importance of scaling up disability inclusion, in all levels of the educational system, as the number of children with disabilities globally is estimated at almost 240 million. This study explores the use of GRiST, a web-Based mental health Decision Support System (DSS), for managing risks associated with mental health problems of children with Special Educational Needs and Disabilities (SEND). Assessment data have been provided by mental health practitioners for children with moderate to severe mental health problems from two different institutions. For the implementation, an 11-point scale (0 = Low up to 10 = High) for measuring the intensity of each risk was condensed into a 3-level scale (Low, Moderate, and High risk). The results show that GRiST can learn how to predict levels of risks with varying degrees of accuracy for harm to others (88%), self-harm (78%), suicide (81%), self-neglect (91%), and vulnerability (72%). However, the overall performance is biased towards the lowest risks and needs to be improved for the higher, more important levels. Performance is likely to be better for methods that adjust to the heavily skewed (heteroscedastic) distributions and have a more sophisticated way of selecting the predictor variables, as previous research has shown for working-age populations. This study provides the stimulus for scaling up and continuing the research because GRiST has the potential to help teachers and carers understand what is causing risks, how to reduce them, and what will help these children perform better in the classroom alongside their peers.

Keywords: Decision Support System, Special Education, Inclusion, Well-being