Substance abuse in adolescents is a significant population health concern and a risk factor for other health problems and mortality in adolescents. Predictive analytics have served as a useful tool for healthcare decision-making, and the value of such a process is more recognized with emerging big data science. It is valuable to review significant predictors related to substance abuse in adolescents so that nurses can transfer the knowledge into actions for prevention and management of substance abuse and relevant health issues.

A multifactorial approach is essential for nurses working with adolescents who have or are at risk for substance abuse. With common predictors, nurses, educators and researchers could develop and implement targeted preventive and management strategies for adolescent substance abuse programs.

This literature review identified a lack of nursing-focused studies in relation to predictive analytics and substance abuse in adolescents. It is recommended for the nurse profession to explore predictive analytics to prevent or intervene substance use-related health issues in adolescents.