

Developing Campus Mental Health Dashboards: Integrating AI Analytics for Wellness Monitoring, Alerts, and Faculty Collaboration



P.N. Periyasamy, M. Keerthi Priya
Hindusthan Institute of Technology,
Mallareddy University

Developing Campus Mental Health Dashboards: Integrating AI Analytics for Wellness Monitoring, Alerts, and Faculty Collaboration

¹P.N. Periyasamy, Assistant Professor, Department of Computer Science and Engineering, Hindusthan Institute of Technology, Othakkalmandapam, Coimbatore, India. periyasamy.pn@hit.edu.in

²M. Keerthi Priya, Assistant professor, Department of CSE(CS&IOT), Mallareddy University, Secunderabad, Telangana, India.mkeerthi.priya@mallareddyuniversity.ac.in

Abstract

The increasing prevalence of mental health issues among university students necessitates innovative solutions that provide timely support and intervention. AI-powered mental health dashboards have emerged as a transformative tool, enabling real-time monitoring, early detection, and predictive analytics for student wellness. By integrating diverse data streams, such as academic performance, attendance patterns, social interactions, and self-reported surveys, these systems offer a comprehensive view of student well-being, allowing for targeted interventions before mental health concerns escalate. This chapter explores the development and implementation of AI-driven wellness monitoring systems in higher education settings, highlighting their potential to enhance early intervention strategies, facilitate collaboration among faculty and mental health professionals, and improve student retention rates. Key challenges, including the ethical implications of data collection, privacy concerns, and the potential for algorithmic bias, are critically examined. The chapter also discusses the integration of alert systems that facilitate seamless care through coordinated responses from various student support services. By bridging the gap between technology and mental health care, AI-powered dashboards present a promising future for university campuses striving to foster a proactive, supportive environment for students. This work offers valuable insights for higher education administrators, data scientists, and mental health professionals seeking to harness the power of AI in improving campus mental health initiatives.

Keywords: AI-powered dashboards, mental health monitoring, early intervention, predictive analytics, student wellness, ethical implications.

Introduction

The mental health of university students has become a critical concern in recent years, as growing rates of anxiety, depression, and stress among young adults significantly affect their academic performance, social engagement, and overall well-being [1]. Universities are increasingly faced with the challenge of providing timely and effective support to students struggling with mental health issues, which often go undetected until they escalate into more severe crises [2]. Traditional mental health care models, which primarily rely on reactive measures, such

as counseling sessions and crisis intervention, have proven insufficient in addressing the increasing demands for mental health services [3]. The need for more proactive, data-driven solutions has prompted the exploration of new technologies that can assist universities in better understanding and supporting student mental health [4].

One such solution gaining momentum is the integration of artificial intelligence (AI) into mental health monitoring systems [5]. AI-powered dashboards offer the potential to continuously track and analyze a wide range of student data, including academic performance, class attendance, behavioral patterns, and self-reported well-being [6]. By processing this data through sophisticated machine learning algorithms, these systems can detect early warning signs of mental distress, such as declining academic performance, social withdrawal, or changes in attendance [7]. Through this predictive approach, AI enables universities to identify at-risk students before they reach a crisis point, allowing for timely intervention and support [8]. This shift from a reactive to a proactive mental health strategy has the potential to significantly improve student outcomes, reduce the incidence of severe mental health crises, and create a more supportive campus environment [9].

In early identification and intervention, AI-powered dashboards can also enhance collaboration among faculty, mental health professionals, and other campus support services [10]. Traditionally, faculty members are the first to notice changes in student behavior or academic performance, yet they often lack the tools or training to address mental health concerns effectively [11]. By integrating AI-driven alerts with existing campus support systems, these dashboards enable faculty to receive real-time notifications about students who may need additional help [12]. This timely and data-driven approach empowers faculty to engage in meaningful conversations with students and refer them to counseling services or other appropriate resources [13]. By fostering collaboration between faculty and mental health professionals, AI-driven dashboards bridge the gap between academic support and student wellness, creating a more holistic approach to mental health care on campus [14].