Developing Multi-Genre Games to Detect Depression and Anxiety Disorders

Abstract:

Depression and Anxiety are prevalent mental health disorders affecting millions worldwide. Identifying these disorders accurately and promptly is crucial to ensure that individuals can receive appropriate treatment. To address this issue, this paper proposes using a game to identify behavioral patterns that indicate depression and anxiety. Our study involved ٥٦ university students. In this paper, we used statistical tools such as calculating Correlation, Linear Regression, Kolmogorov–Smirnov, ANOVA, and Mann–Whitney U test to analyze our data. For this research, we designed a shooter and a memory-based game that can challenge disorders by creating exciting and stressful moments. Using serious games offers several advantages over traditional methods, like increasing accuracy and reducing bias by removing self-reports and sampling with monitoring player behaviors for extended periods. Our results indicate that several parameters are significantly related to depression and anxiety. These parameters include the number of guesses and surrendering in memory games, manner of movements, losing perks, losing lives, number of enemies colliding with the player, and number of playing to win in shooter games. We also found that log size and skipping game tutorials in each game were related to depression and anxiety. Lastly, age and getting help from others were identified as significant factors. Overall, our research highlights the potential of games as an alternative tool for assessing and understanding depression and anxiety disorders. By leveraging the interactive nature of games, researchers and clinicians can gain valuable insights into individuals' mental health conditions leading to improved identification and treatment outcomes.