

ABSTRAK

Kesehatan mental merupakan aspek penting yang memengaruhi kesejahteraan psikologis mahasiswa, khususnya mahasiswa pascabencana yang berisiko mengalami gangguan mental emosional akibat dampak bencana, tekanan akademik, maupun permasalahan sosial. Proses skrining kesehatan mental yang masih dilakukan secara manual menyebabkan deteksi dini menjadi kurang efektif, membutuhkan waktu yang relatif lama, serta belum mampu menyediakan informasi dan edukasi yang terintegrasi. Penelitian ini bertujuan untuk merancang dan membangun Sistem Informasi Berbasis Website untuk Skrining Kesehatan Mental dan Edukasi *Coping Strategy* menggunakan skoring psikometrik dan algoritma *K-Means Clustering* pada mahasiswa pascabencana di Universitas Malikussaleh. Pengembangan sistem menggunakan metode *Waterfall* yang meliputi tahapan analisis kebutuhan, perancangan sistem, implementasi, pengujian, dan pemeliharaan. Proses skrining memanfaatkan instrumen *Self Reporting Questionnaire-20 (SRQ-20)* sebagai metode skoring psikometrik untuk mengidentifikasi tingkat gangguan mental emosional berdasarkan total skor yang diperoleh responden. Selanjutnya, algoritma *K-Means Clustering* diterapkan untuk mengelompokkan hasil skrining ke dalam empat kategori, yaitu Tidak Ada Gangguan, Gangguan Ringan, Gangguan Sedang, dan Gangguan Berat berdasarkan kemiripan karakteristik data. Sistem dikembangkan menggunakan *framework Laravel* dengan basis data *MySQL* serta diuji menggunakan metode *Automated Testing* melalui *Katalon Studio*. Hasil pengujian menunjukkan bahwa seluruh fungsi sistem berjalan sesuai dengan kebutuhan fungsional yang telah dirancang. Berdasarkan hasil skrining terhadap 114 responden, diperoleh 24 responden (21,05%) berada pada kategori Tidak Ada Gangguan, 39 responden (34,21%) pada kategori Gangguan Ringan, 44 responden (38,60%) pada kategori Gangguan Sedang, dan 7 responden (6,14%) pada kategori Gangguan Berat. Hasil *Clustering* menunjukkan bahwa sebagian besar responden berada pada kategori Gangguan Sedang sehingga memerlukan perhatian lebih dalam upaya pencegahan dan penanganan. Dengan demikian, sistem yang dikembangkan mampu mendukung proses skrining kesehatan mental secara efektif, menghasilkan pengelompokan data yang objektif menggunakan algoritma *K-Means*, serta menyediakan edukasi *Coping Strategy* yang sesuai dengan kondisi kesehatan mental mahasiswa.

Kata Kunci: Skrining Kesehatan Mental, *Self Reporting Questionnaire-20 (SRQ-20)*, *Clustering K-Means*, Sistem Informasi Berbasis *Website*, *Coping Strategy*.

ABSTRACT

Mental health is an essential aspect of students' well-being, particularly for post-disaster students who are vulnerable to emotional mental disorders due to the psychological impacts of disasters, academic demands, and social challenges. Conventional mental health screening is generally performed manually, making the early detection process less effective, time-consuming, and unable to provide integrated information and educational support. This study aims to design and develop a web-based information system for mental health screening and coping strategy education using psychometric scoring and the K-Means Clustering algorithm for post-disaster students at Malikussaleh University. The system was developed using the Waterfall software development methodology, which consists of requirements analysis, system design, implementation, testing, and maintenance. The screening process employs the Self-Reporting Questionnaire-20 (SRQ-20) as a psychometric scoring instrument to identify emotional mental disorders based on respondents' total scores. Furthermore, the K-Means Clustering algorithm was implemented to classify screening results into four categories: No Mental Disorder, Mild Mental Disorder, Moderate Mental Disorder, and Severe Mental Disorder according to the similarity of respondents' psychometric score characteristics. The system was developed using the Laravel framework with MySQL as the database management system and evaluated through Automated Testing using Katalon Studio. The testing results demonstrate that all system functionalities operated successfully according to the specified functional requirements. Based on the screening results of 114 respondents, 24 respondents (21.05%) were classified as having no mental disorder, 39 respondents (34.21%) as having mild mental disorders, 44 respondents (38.60%) as having moderate mental disorders, and 7 respondents (6.14%) as having severe mental disorders. The Clustering results indicate that the majority of respondents were categorized as having moderate mental disorders, suggesting the need for greater attention in prevention and intervention efforts. Therefore, the proposed system effectively supports mental health screening, produces objective data grouping using the K-Means Clustering algorithm, and provides appropriate coping strategy education based on students' mental health conditions.

Keywords: *Mental Health Screening, Self-Reporting Questionnaire-20 (SRQ-20), K-Means Clustering, Web-Based Information System, Coping Strategy*