K-NEAREST NEIGHBOR MODELING IN THE DIAGNOSIS OF ALLERGIC CONTACT DERMATITIS
(Case Study: Mlati 1 Community Health Center, Sleman)

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ABSTRACT

Allergic contact dermatitis is a highly prevalent skin condition in primary healthcare settings that requires accurate diagnosis but is often hindered by limited diagnostic resources. This study aims to develop a diagnostic classification model for allergic contact dermatitis using the K-Nearest Neighbor (KNN) algorithm, based on a case study at the Mlati I Community Health Center (Puskesmas). The research utilized data from 250 patient records, including demographic variables, exposure history, clinical symptoms, and physician diagnoses. These data underwent preprocessing steps, including data cleaning, categorical variable encoding, normalization, and splitting into training and test sets. The KNN algorithm was implemented with varying values of k and evaluated using a confusion matrix and performance metrics including accuracy, precision, recall, and F1-score. The results demonstrated that KNN achieved strong classification performance, with the highest accuracy at a specific k value, indicating its potential as a decision support tool for diagnosing allergic contact dermatitis in primary healthcare settings.
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Keywords: Allergic contact dermatitis, K-Nearest Neighbor, classification, machine learning, community health center.