

Use of Fuzzy Logic Based Decision Support Systems in Medicine

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ABSTRACT The complexity of the problems that are faced within people's decision-making process can reveal a variety of challenges in the solution process. The increasing complexity of the events faced, makes the decision-making more difficult. Therefore, recently, a trend has occurred in advanced technologies such as decision support systems (DSS). DSS offer alternative solutions with a flexible and objective perspective to researchers in various fields, particularly in the fields of medicine and life science. DSS can be designed using artificial intelligence based methods such as fuzzy logic (FL), and artificial neural networks (ANN). Nowadays, the fuzzy logic-based DSS in the medical field such as the disease diagnosis, the determination of appropriate treatment, the costs and so on, including issues in making clinical decisions are widely used, and successfully applied. In this study, FL-based DSS have been introduced, and different applications used in the medicine field have been given. The mean of the success level of the FL-based DSS was determined to be ninety percent. FL-based DSS has been providing a significant contribution to disease diagnosis in the examined studies.