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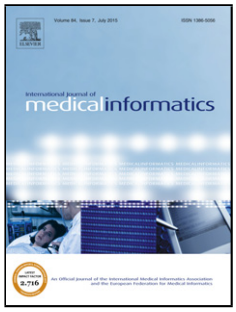

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SCADI: A standard dataset for self-care problems classification of children with physical and motor disability

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Abstract

Self-Care problems diagnosis and classification is an important challenge in exceptional children health care systems. Since, self-care problems classification is a time-consuming process and requires expert occupational therapists, using an expert system in classifying these problems can decrease cost and time, efficiently. Expert systems refer to the systems that are based on artificial intelligence methods, which have the ability to learn, infer, and predict. In order to configure and train an expert system, a standard dataset is critical for the learning phase. Hence, in this research, a new standard dataset called SCADI (Self-Care Activities Dataset based on ICF-CY) is introduced innovatively. SCADI is based on ICF-CY, which is a conceptual framework, released by the World Health Organization. According to the best of our knowledge, SCADI is the first standard dataset in the self-care activates based on ICF-CY in which 29 self-care activities are considered. In this research, to show the applicability of SCADI in the expert systems, two different types of expert systems are proposed for the self-care problems classification of children with physical and motor disability. In the first expert system, an Artificial Neural Network (ANN) is employed as a classifier. This classifier is trained by using SCADI during the learning process. Since ANNs do not provide any explanation for the inference rules and manners, in the second ex-

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