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Title

Medication Adherence Technologies : A Classification Taxonomy Based on Features

Priority 1 (Research Category)

Geriatrics

Presenters

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Abstract

Context: To ensure older adults with multiple chronic conditions can age comfortably at home, safe and effective medication management is crucial. However, complex medication routines and functional limitations often make adherence challenging. Although medication adherence technologies hold promise, the absence of a standardized classification system based on attributes impedes effective communication, and comparison by clinicians and researchers, as well as the selection of the most suitable technologies for older adults based on their abilities.

Objective: To develop a classification system for medication adherence technologies based on an inventory of characteristics and features of existing technology.

Study Design and Analysis: The study used the Taxonomy Development Method. Five research team members defined the users of the taxonomy, determined the meta-characteristics, ending conditions, and utilized both the empirical-to-conceptual and conceptual-to-empirical approaches. A subset of 23 medication adherence devices were examined to identify common characteristics. These characteristics were then organized into dimensions and sub-dimensions to create the taxonomy. A Delphi consensus survey process with a team of 13 field experts was used to attain consensus (> 70% agreement) on the taxonomy.

Setting: University of Waterloo, Canada.

Outcome Measures: The primary outcome measure was the proposed taxonomy.

Results: The initial inventory of characteristics and features yielded 7 dimensions, 23 sub-dimensions, and 96 characteristics. Following the first Delphi consensus survey, 4 sub-dimensions did not achieve 70% consensus. Feedback received during the consensus process led to the addition of new sub-

dimensions such as non-slip features, screen size, and privacy, and modifications to existing sub-dimensions such as connectivity and power source. In the second round of Delphi consensus, over 70% agreement was achieved for all sub-dimensions, resulting in the final taxonomy comprising 7 dimensions, 24 sub-dimensions, and 105 characteristics.

Conclusions: The developed taxonomy provides a valuable tool for distinguishing among medication adherence technologies available in the market and facilitates their comparison. This classification system allows for an examination of the usability of products by patients with functional limitations, potentially enhancing medication management for older adults with multiple chronic conditions.