An Alzheimer's Intelligence Care System (AICS) to Assist Alzheimer's Patients: Design and Development of Application

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ABSTRACT

Introduction: Alzheimer's disease (AD) and cognitive impairment are age-related disorders. Nonetheless, it is possible to maintain Alzheimer's patients' quality of life by meeting their needs and reducing the unfavorable consequences. This study introduces an Alzheimer's Intelligence Care System (AICS), which can meet various needs of such patients while adapting itself to the disease progression.

Material and Methods: Mini-mental state examination (MMSE) was administered to measure the patients' cognitive abilities. The system, then, assigned the patients to level one or two, depending on the severity of their conditions. Afterwards, medicinal, nutritional and athletic schedules as well as a daily routine schedule were given to the patients to follow on three domains as follows: (a) improving the patients' memory through such activities as mental massage and play therapy, which all aim at boosting cognitive abilities, (b) reminding the patients to do their necessary daily jobs, and (c) tracking the patients' daily activities in order to protect them from probable hazards.

Results: It was predicted that constantly following a rigorous schedule helps to control the progression of Alzheimer's disease (AD) to a large extent, thereby slowing or stopping further decline of cognitive ability. Nonetheless, due to various factors contributing to the disease in the elderly, the effectiveness of the method is contingent upon many external factors.

Conclusion: The proposed system in this article intended to meet the patients' needs in improving their memory (massage therapy, play therapy), reminding them to do their necessary daily jobs, and tracking their daily activities in order to protect them from probable hazards through different stages of the disease with capability of adjusting itself to new needs as they emerge, thereby slowing or stopping further decline of the cognitive ability. Further Research on this subject is recommended.

Key words: Alzheimer's disease (AD), Memory, Cognitive abilities, Artificial intelligence, Machine learning, Intelligent systems.
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