

COMPUTER LITERACY IN THE ELDERLY: A SURVEY EXAMINING REAL WORLD USABILITY OF MEDICAL SOFTWARE

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There is widespread evidence of an association between reduced health literacy and an increased risk of poor medical outcome. Patients with poor medical education experience significantly higher emergency room costs¹ and up to double the hospital admission rates compared to patients with sufficient medical education.^{2–6} Lack of medical literacy is particularly important in the ageing population, due to increased burden of chronic illness and the increasingly complex management of progressive chronic conditions. To address this, various smartphone and tablet medical applications have been developed to improve patient health literacy and monitor chronic illnesses. We propose the need to examine the technological literacy of elderly patients, who are most likely to benefit from these applications.

The efficacy of self-monitoring medical applications hinges on a patient's ability to access and use technology to track health progress. We suspect that computer literacy in elderly patients will not be adequate for effective technological monitoring of chronic illness at this time. It has been shown that amongst doctors there is often low familiarity with basic computer applications.⁷

We have designed a study to determine the technological literacy of patients who present to a large specialist Ophthalmology hospital. This population is one of the least likely to adequately operate advanced technology due to deteriorating vision and advanced age. There has also been recent development of patient health-monitoring applications for illnesses in this field. These include applications to

monitor glaucoma and macular degeneration, which have significant correlation with clinical assessment in experimental settings.^{8,9}

We will survey Ophthalmology patients and compare their ability to perform simple tasks on their smartphones and tablets as a screening measure for operating more advanced medical software for the purposes of health monitoring. The designed survey will enquire about the ability of patients to install, open and operate applications on a smartphone or tablet. The survey will also obtain information about the type of devices patients own and frequently use. Finally, the survey asks whether a patient has any previous experience with medical applications.

With the results of this research we aim to assess the computer literacy of an ageing patient population, and extrapolate from this data the reliability of personal medical software to accurately monitor chronic disease in this demographic. Due to potential limitations in patient language comprehension, participants will be limited to those fluent in English. While there are also potential study limitations due to visual or technological difficulties, these problems will reflect the issues in implementing personal medical applications in practice.

These findings will act as a benchmark to guide the feasibility of implementation of technology-based disease monitoring in the near future. We would expect, with time, that subsequent generations' computer literacy will only improve from this benchmark.

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