A Feasibility Study Examining the Use of Wearable Technology Among Older Delirious Adults Recovering from Acute Illness

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Introduction

Wearable technology that continuously monitors physiological metrics has become increasingly popular and allows remote patient monitoring in virtual ward settings. Wearable technology has been shown to be effective in disease monitoring among younger adults. However, its use among older adults, including those with cognitive impairment, is yet to be explored.

Aims:

We aim to explore the acceptability of remote monitoring using wearable technology among older adults with delirium.

Methods

Participants were recruited from an in-patient rehabilitation unit. Inclusion criteria included documented delirium, clinical frailty score greater than 6 and age over 65 years. Wearable technology was worn continuously, except when being charged or the patient was washing. Device data was recorded every minute. Participants were assessed daily for delirium and using the Memorial Delirium Assessment Scale. At point of discharge from the study, participants completed a questionnaire to gather feedback on their experience.

Conclusions

Our findings demonstrate that wearable devices are tolerated by delirious older adults with delirium. We found that this group cannot manage these devices independently and need support from either a carer or healthcare professional. . These results provides useful information, and highlight potential pitfalls to help pilot these devices among older adults with delirium in virtual ward settings.

Results

20 participants were included, with a mean age of 83.0 years and an average premorbid Barthel's index of 72.6. Mean total data capture from the wearable technology was 44.1% (12.8-65.8). There was weak negative correlation (-0.08) between delirium severity and percentage capture per participant, suggesting that the more delirious a participant the less they tolerated the device. None of the participants could independently manage the device (see figure 1). None of the participants could independently manage the device.

Three participants stated that the device interfered with their normal activities with five reporting the device uncomfortable to wear (see illustrative quotes). However, nine participants stated they would wear the device again if asked to by a healthcare professional.

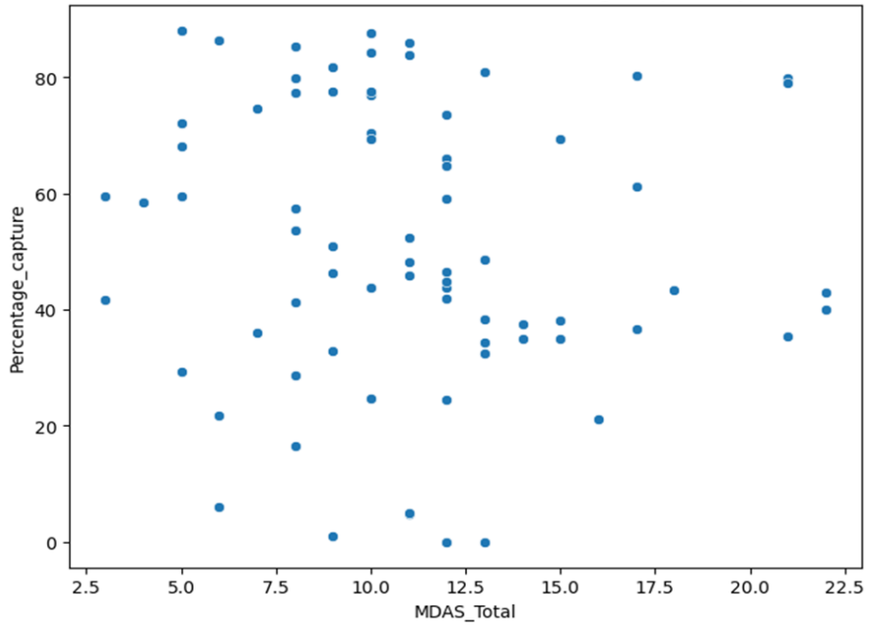

Fig. 1 Scatter plot between MDAS total and percentage capture by device

Quotes from participants:

"*Difficult to use and interact with as she has very poor eyesight*"

"It moved around on my arm a lot. It was very itchy. I wanted to see my information, what use is it to me if I cannot see the information"

"Useful that doctors could see my information without having to be looking at me at the same time. Felt like I was being looked after"

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