

Computerized carer lessens dementia load

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An artificial intelligence coaching system has been developed that will help carers of older adults with moderate dementia. The COACH system (Cognitive Orthosis for Assisting aCtivities in the Home), described in the open access journal *BMC Geriatrics*, uses a camera and computer to deliver interactive advice - lessening the workload on often-overburdened carers.

Alex Mihailidis led a team of researchers from the University of Toronto, Canada, who tested the COACH's ability to help a group of six older adults with dementia remember how to wash their hands. Mihailidis said, "COACH employs various computer vision and artificial intelligence techniques to autonomously provide the user with verbal and/or visual reminders as necessary during their activities of daily living".

When COACH was used, the participants with moderate dementia showed an increase in the number of handwashing steps they were able to complete without assistance from the caregiver as well as a decrease in the number of times they required assistance from the caregiver during the activity.

COACH uses a camera to monitor the care recipient's progress and delivers relevant advice, either through speakers or on a television screen. According to the authors, "To be useful to both a person with dementia and their caregivers, a coaching device must be automatic and not require feedback like button presses, as this cannot reasonably be expected of the target audience or their overworked caregivers.

Cognitive assistance should be personalized and appropriate to the deficits in question. Finally, assistance should only be given when needed to minimize confusion and keep the user as involved in the task as possible".

When the COACH system believes that a mistake has been made, a pre-recorded prompt is played. COACH gives the relevant advice, sometimes accompanied by an illustrative video, recorded from the point of view of the person doing the task. The authors found that of the five test subjects with moderate dementia, four were independent of human caregivers while the device was used. The other subject with moderate dementia notably and consistently failed to use soap, even when she received the correct prompts.

Citation: The COACH prompting system to assist older adults with dementia through handwashing: An efficacy study, Alex Mihailidis, Jennifer N Boger, Tammy Craig and Jesse Hoey, BMC Geriatrics (in press)

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