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Using technology to assist creative arts activities in dementia care

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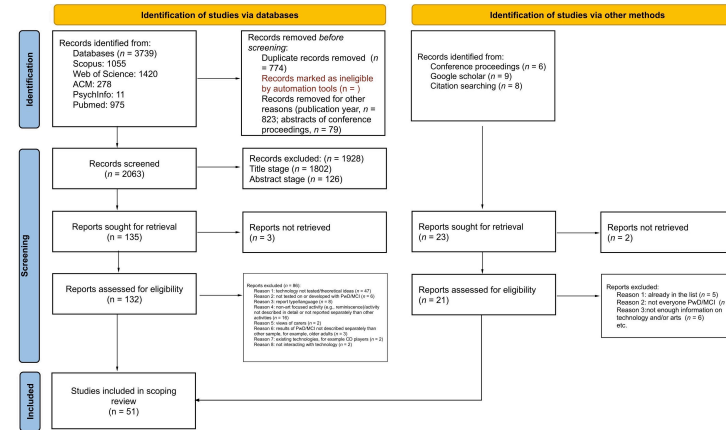[2] The Hague University for Applied Sciences, Netherlands

Background and Aims

- Growing use of creative arts in community and residential settings for health and wellbeing for people living with dementia.
- Similar increasing availability of technology.
- We conducted a scoping review to assess the current state of development of creative assistive technologies across various art-forms for people living with dementia.
- We examine how technology might be used to meet their leisure, health, and wellbeing needs.

- Our research questions:
  i) what are the arts-based activities being delivered through technology for older adults living with dementia or mild cognitive impairment, and
  ii) what are the characteristics of technologies being used to enhance these arts-based activities?

Resonant rocking chair (Bennet et al., 2016)

HUG – (Treadaway et al., 2019)

Sharing art frame (Lazar et al., 2017)

Turnaround (Houben et al., 2020)

Methods

Two raters independently screened titles and abstracts:

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers and other sources

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: http://www.prisma-statement.org/

Results

- Music (29), visual art (7), storytelling (6) and film-making (2) were delivered through technology to older adults living with dementia. Other activities included dance (1), interactive light and sound (1), incorporating arts activities into multi-sensory objects (3), and two applications specifically allowed a choice between multiple creative arts (2).
- Majority of devices were custom-made (22), but many others were applications for tablet (9), computer (8), portable media device (3) video game system (3), VR (1), or online software (1).
- Most devices were oriented towards individual use (25), others in the presence of a group (6), that also supported individual or group use (9), that involved 2 participants (5), or a larger group of participants (6).

- A majority of papers only reported doing user-testing (31), but many others included some degree of co-design processes (20) that incorporated the contributions of people living with dementia.
- Over half of devices allowed participants some degree of choice from a pre-existing list (38) of either stimuli, activity or instrument to use. Less allowed personally relevant stimuli materials (18), only a few offered the ability to add personally relevant stimuli (5), and only a couple had the possibility for the interface to be changed to adapt to the needs of the user (2).
- There were a wide range of cognitive measures used, from feasibility testing (36), either cognitive or behavioral tests of changes to participants' BPSD (16), changes to quality of life (8), changes to participants' interactions with their environment (14)

Discussion

- Most work in the field is currently at the prototyping stage, but a few devices are now commercially available.

Recommendations for future research:
- involvement of participants reporting on their previous experiences in the arts and how this influences co-design choices
- inclusion of different severities of dementia in the participant/co-design group.
- Furthering device development past prototyping stage as well as collaboration between teams would enable comparisons to be made across different types of devices used for the same activity.
- Comparisons across arts-based activities could lead to cross-disciplinary outcomes for the design of creative arts-based assistive technologies.

References

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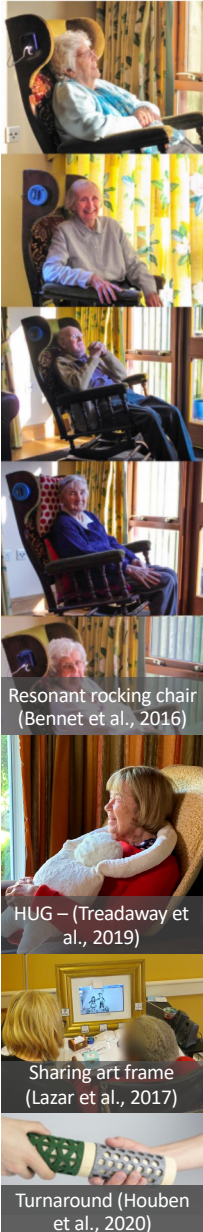
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