ConnectED Briefing #7

Technology-enabled care (TEC) for people living with dementia at home

The issue

Technology-enabled care (TEC), or 'Assistive technology and telecare' (ATT) for people living with dementia, comprises electronic or mechanical devices designed to support them to maintain independence. TEC is also used to improve quality of life by assisting people with daily living activities and managing risks to their safety. It can include devices that support leisure activity or communication.

What we wanted to find out

For people living in the community with dementia, how effective are the following, commonly used, types of TEC in delaying the need for new or enhanced packages of care and promoting quality of life: technology that monitors, reminds or prompts people to do things, and sensors designed to enhance safety, with or without links to remote support or surveillance?

What we did

Technologies change rapidly, so we searched for systematic reviews and studies published since 2018. We looked for studies that examined TEC's effectiveness in supporting people living with dementia, whether or not they lived with informal carers.

What we found

We found two scoping reviews, one systematic review and one randomised controlled trial.

One scoping review looked at digital technologies that support people living with dementia and carers at home and in care homes[1]. This review covered studies of technologies at all key stages of development, and we focused on those likely to be in use in social care at the time of writing. The second scoping review considered the effectiveness of smart home technologies for people living with dementia in the community[2]. The systematic review examined whether assistive technology improved people's safety at home[3].

The randomised controlled trial – the ATTILA trial[4] – was conducted in England. It examined the effectiveness of a full package of ATT (provided after an assessment) in maintaining independent living at home for people with dementia. Those in the control group received ATT limited to one or more of the following: a pendant alarm, non-monitored smoke and carbon monoxide detectors and key safes (basic ATT). Older people in both groups received comparable community services.

Most studies focused on the impact of TEC on service user safety, with less attention paid to their wellbeing or quality of life.

Some studies report findings on the impact of TEC on carers, but in the absence of a comprehensive review of the impact of TEC on carers, these must be treated with caution.

What the evidence suggests

There is some evidence that TEC can:

- provide a 'sense of security' for carers in relation to risk[1,3]
- when used alongside other interventions, help reduce risks from falling or accidents, or other behaviours such as 'purposeful walking'.

There is currently no clear evidence to suggest that:

- a full TEC (ATT) package (as in the ATTILA trial) is more effective than 'basic ATT' when provided in addition to community services.
- TEC will delay the entry of people living with dementia to long-term residential care or reduce the demand for social care services over time for those remaining at home.
- TEC will necessarily improve the quality of life of people living with dementia.
- TEC will help carers to feel better able to provide care and support or relieve anxiety or depression.

The research highlights potential usability and ethical concerns with the technologies commonly used, and many studies note that the effective use of TEC may depend on the involvement of carers.

Reasons for the lack of evidence of effectiveness

Overall, the evidence suggests that:

- The TEC provided to people living with dementia is not always appropriate. It may be unwanted, not sufficiently tailored to need (i.e. not person-centred), or too complex to use.
- TEC may be installed too early (before people feel they need it) or too late (when there is less chance it can make a difference): in both cases it is unlikely to be used or used as intended.

Implications for practice and service users

The evidence highlights the importance of social care practitioners working in a person-centred way, taking the time to understand people's needs and how they live their lives, including both their home and social environments.

It is important that the processes used by social care providers to assess a person's needs ensure that technology recommended will in fact meet those needs. They should also follow up to ensure TEC is installed correctly and provide any ongoing support that service users and carers might need.

Practitioners and researchers may want to explore how technology can be used to support people's quality of life as well as address safety concerns. Maintaining social relationships is key.

Although current evidence doesn't help us to know what technology is effective, an ethnographic study and research around the *process* of needs assessment highlighted in the ATTILA trial raises important issues for practice. This, coupled with the perspectives of a family carer and adult social care practitioners, have informed a 'Practice Considerations Appendix to this briefing.

Overall quality and completeness of the evidence

On balance we are moderately confident that we have included the current best evidence in relation to older people living with dementia.

Studies have examined different kinds of TEC, targeting different needs in different contexts. Much TEC is not yet sufficiently well developed, or in wide enough use, to support robust evaluation of its effectiveness, or to suggest what might work in what circumstances.

Further reading

- Research in Practice research summaries on technology (2020) and on delivering person-centred TEC (2018).
- Glasby, J. et al. (2023). *If I knew then what I know now: A short guide to introducing new technology in adult social care*.

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References

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[2] Moyle, W., Murfield, J. & Lion, K. (2021). The effectiveness of smart home technologies to support the health outcomes of community-dwelling older adults living with dementia: A scoping review. *International Journal of Medical Informatics*, 153: 104513.

[3] Brims, L & Oliver, K. (2019). Effectiveness of assistive technology in improving the safety of people with dementia: a systematic review and meta-analysis. *Aging and Mental Health*, 23:8, 942-951.

[4] Gathercole, R. et al. (2021). Assistive technology and telecare to maintain independent living at home for people with dementia: the ATTILA RCT. *Health Technology Assessment*, 25:19.