Users’ perceptions of technologies aimed at falls prevention, detection or monitoring.
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Background
Information and Communication Technologies (ICTs) have emerged aimed at falls prevention, detection and alarms for use in case of fall [1]. ICT interventions have also been created or adapted to provide strength and balance training to older adults in the prevention of falls e.g. exergames, kinect [2,3].

The main issue relates to the use of ICT devices, we know very little about older adults’ attitudes towards falls technologies. This review provides a summary of existing knowledge, identifies gaps, and informs the development of interventions within a European Commission funded research project, FARSEEING (farseeingresearch.eu).

Methods
All study designs were included. Studies included older adults aged 50 and above, to reflect attitudes of experiences of younger older adults as well as those older. Considering current and future populations who could benefit from FARSEEING’s research.

Types of interventions.
Studies included technologies related specifically to falls prevention, detection or monitoring. Technologies are directly used by older adults. Studies provide evidence on older adults’ attitudes/experiences of technologies.

Search strategy
Searches of MEDLINE, EMBASE, CINAHL and PsychINFO, COMPENDEX and Cochrane. Search terms included ‘older adults’, ‘preference’, ‘attitudes’ and a wide range of technologies, also including the key word ‘fall*’.

Quality assessment
Methodological quality was assessed by two reviewers (H.H & E.B). We used the Joanna Briggs Institute (JBI) tool for qualitative research [4] and the Quality Assessment Tool for Quantitative Studies by the Effective Public Health Practice Project (EPHPP) [5]. As many studies were cross sectional we emphasised response rate and use of validated tools, considering “Fitpatrick” [6] criteria.

For mixed methods studies we used both tools giving priority to the dominant method, considering triangulation and whether the approach led to richer data. A third reviewer (A.H.) was used if there was disagreement.

Results
Study cohorts were relatively healthy and community based, women were over represented and ethnicity not stated.

Findings

Control.
Studies talked about older adults having control over the technology and situation. Control over privacy was important, relating to systems including video imagery [7,8].

Choice was an important element of control. Older adults liked systems where they could cancel false alarms [1, 9,10].

Perceived need.
Whether participants took up or maintained use of technologies related to whether they felt they were relevant to them [8,11].

Improved safety.
Older people used technology because they felt it improved safety [7,12], particularly technologies with function), motivating them to continue the exercises [15,16].

Convenience and motivation to continue.
Older adults liked systems where they could programme and use the technology. Studies talked about older adults cited by participants/stakeholders [9,8].

Outcomes.
Independence and confidence relating to systems including video imagery [7,8].

• Intrinsic factors related to attitudes around control, independence and perceived need for safety for important for motivation to use and continue using technologies.

• Extrinsic factors such as usability, feedback and costs support these attitudes and perceptions.

Findings are not dissimilar to previous research carried out with older adults around attitudes towards uptake of falls prevention and exercise [17,18].

Positive messages about the benefits of falls technologies for promoting healthy active ageing and independence are critical, as well as ensuring technologies are simple, reliable, effective and tailored to individual need.

Discussion

References