

# **Self-Care Assistive Technologies: A systematic review of studies on efficiency and factors influencing their use**

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# Theoretical backgrounds

- Assistive technologies
  - Devices, products, or equipment that are used to protect, enhance or improve the body functions, to prevent impairments and activity limitation (ISO, 2016)



# Theoretical backgrounds



- Assistive technologies benefits
  - To keep or improve the functioning of an individual to facilitate activities and participation
  - To reduce the need for formal and informal care and the burden on caregivers
  - To enhance overall well-being

# Theoretical backgrounds

- Self-care activities

**Self-care activities based on International Classification of Functioning, Disability, and Health (ICF) (WHO, 2001)**

1. Washing oneself
2. Dressing
3. Eating
4. Drinking
5. Caring for body parts
6. Looking after one's health
7. Toileting

# Theoretical backgrounds



- Research questions
  - How effective are self-care assistive technologies in enabling independent living?
  - Which barriers and facilitators exist for the actual use of self-care assistive technologies?

# Method

- Systematic literature search in PsycINFO, MEDLINE, and Google Scholar
- Search terms synonymous with “assistive technologies”, “self-care”, and “older people”

Terms for self-care activities	Terms for assistive technologies	Terms for older people
Self care skills	Assistive technology	Aging
Self-care activities	Self-help device	Older people
Self-care	Self-care aids	Older adults
Bathing	Self-care device	Older person
Dressing	Assistive device	Elderly
Eating	Assistive aids	Aged
Toileting	Assistive equipment	Aging population

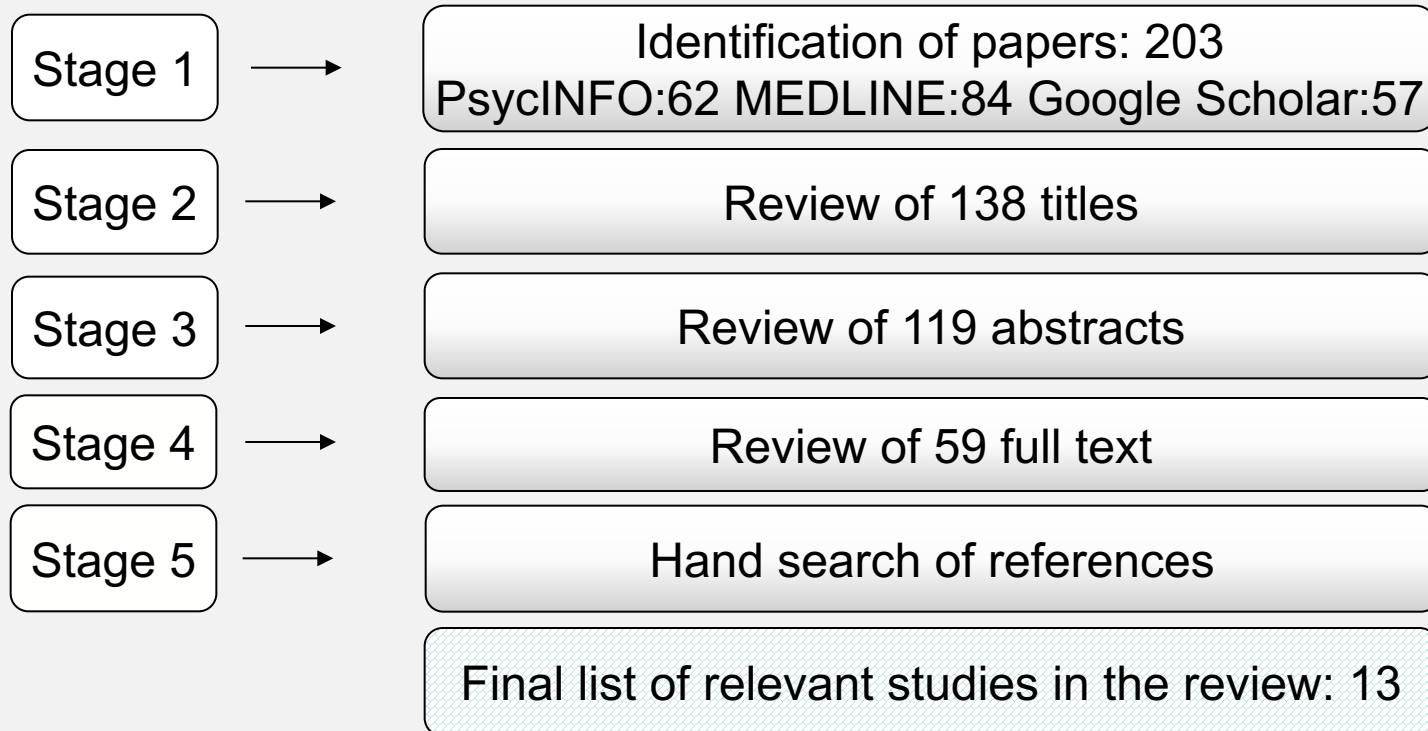
# Method

- Inclusion versus exclusion criteria

Inclusion criteria	Exclusion criteria
Quantitative empirical studies	Qualitative studies
Journal articles (in English)	Unpublished papers, thesis, book chapters, and papers not in English
Subjects suffering from a defined set of disabilities or limitations in ADL	Healthy older people without limitations of ADL
Different accommodations	Laboratory settings intervention
A sample of older people	
Indicators of effectiveness of ATs assessed	
Indicators of barriers & facilitator for ATs use assessed	
Referring to self-care activities included in the ICF	

# Method

- The selection process of the relevant studies





# Results

## ▪ Effectiveness of self-care assistive technologies (ATs)

- Reduction in amount of care hours regarding whole sets of ATs and regarding single ATs for bathing or toileting (+)
- Increased rate of satisfaction (+)
- Increased level of independence in performing self-care activities (+)
- Increase of formal care hours and no significant difference between total personal assistance hours and the actual use regarding single toileting ATs in one study (-)

# Results

- Barriers and facilitators of actual use of assistive technologies

	Barriers	Facilitators	
Personal factors	Cognitive impairments	Chronic illnesses	Personal factors
	Feeling of loneliness	Functional disease (in most studies)	
Technology factors	Complex device	Intention to use	Technology factors
	Difficulty to use	Simple device	
		Home-based training	Contextual factors
		Living in sheltered houses	

# Discussion

- Neglect of specific domains of self-care assistive technologies (ATs)
- Methodological limitations
- Lack of theoretical foundation
- Historical and cultural limitations

# Discussion - Implications for the future research

- Evaluation of ATs for specific activities (e.g., drinking, caring for body parts) and not ATs for sets of activities (e.g., eating + mobility)
- Evaluation of advanced self-care ATs which support performance in line with cultural norms
- Randomized control trials and longitudinal study designs
- Theoretical framing of AT use

# References

- Abrilahij, A., Boll, T. (in press). A systematic review of self-care assistive technologies for aging population. In T. Boll, D. Ferring, & J. Valsiner (Eds.), *Cultures of care in aging* (pp. xxx-yyy). Charlotte, NC: Information Age Publishing.
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**Thanks for your  
attention!**

**Any questions?**

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