



Evaluation Methods for Physical Activity-Promoting Technologies:

An **Interdisciplinary** Scoping Review

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Aim

To describe and contrast the objectives and methods used in the evaluation of physical activity interventions delivered using mobile technologies

Introduction

- Many thousands of mobile apps, wearables and other technologies are available to promote physical activity (PA).
- These technologies often change, evolve and update rapidly.
- Therefore, methodologies traditionally used to evaluate effectiveness of PA interventions (e.g. the RCT) may not be appropriate.
- To develop more 'fit-for-purpose' methodologies, lessons can be drawn and combined from different disciplines e.g. health sciences and human computer interaction (HCI).

Method

- A scoping review was conducted following the 5 stages outlined by Arksey & O'Malley, 2007 and Levac et al, 2010.

1. Identification of relevant studies
2. Selection of studies for inclusion
3. Extraction and charting of the data
4. Citation, classification and summarizing results
5. Consultation / validation interviews

- Databases: PubMed, WoS, PsycInfo, ACM, IEEE, Springer, Science Direct, mHealth.org.
- Searches were conducted August-September 2015.

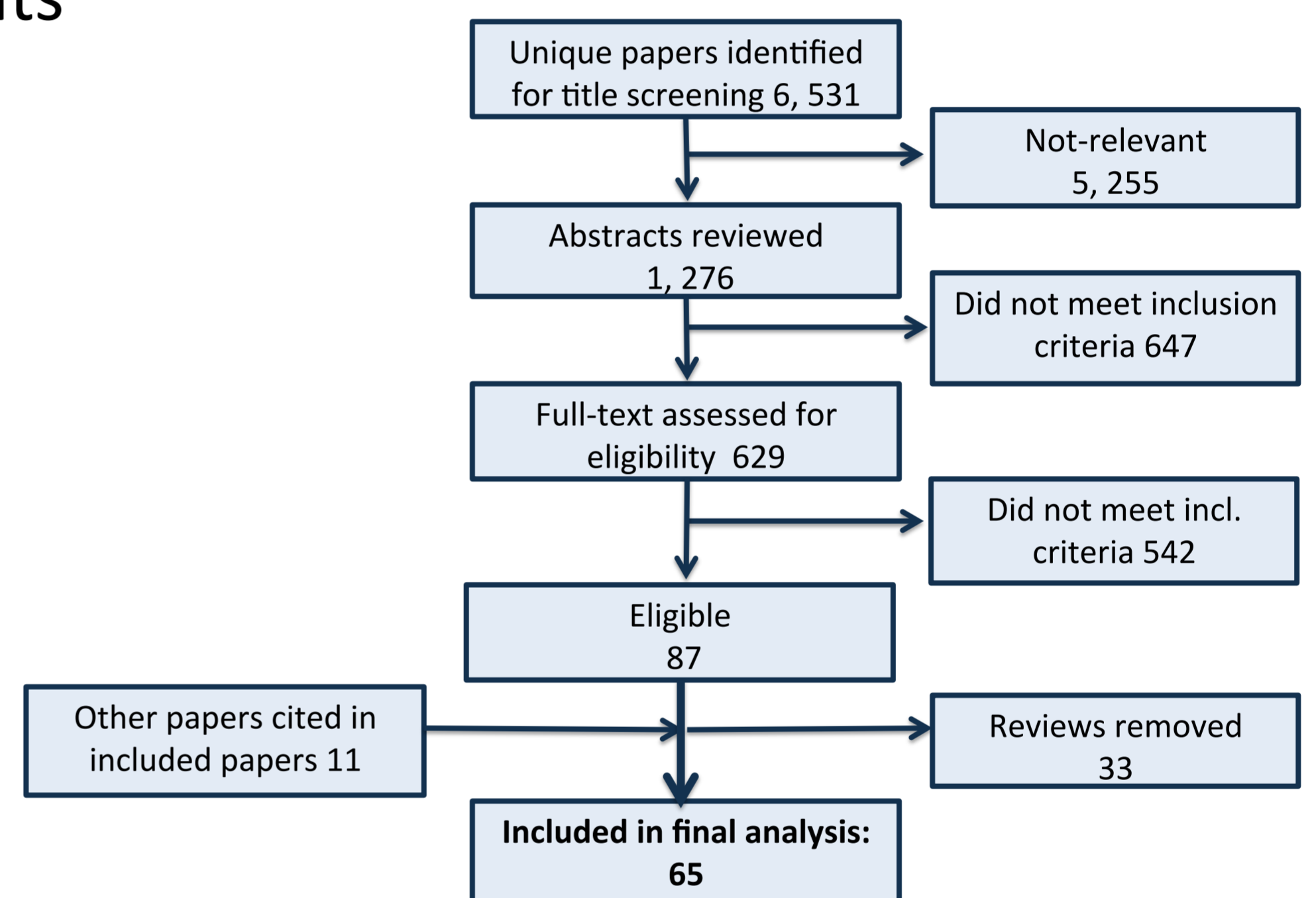
Inclusion criteria (selected):

- (1) PA measured
- (2) PA sensed by a mobile device
- (3) User received direct PA feedback
- (4) Empirical data collected

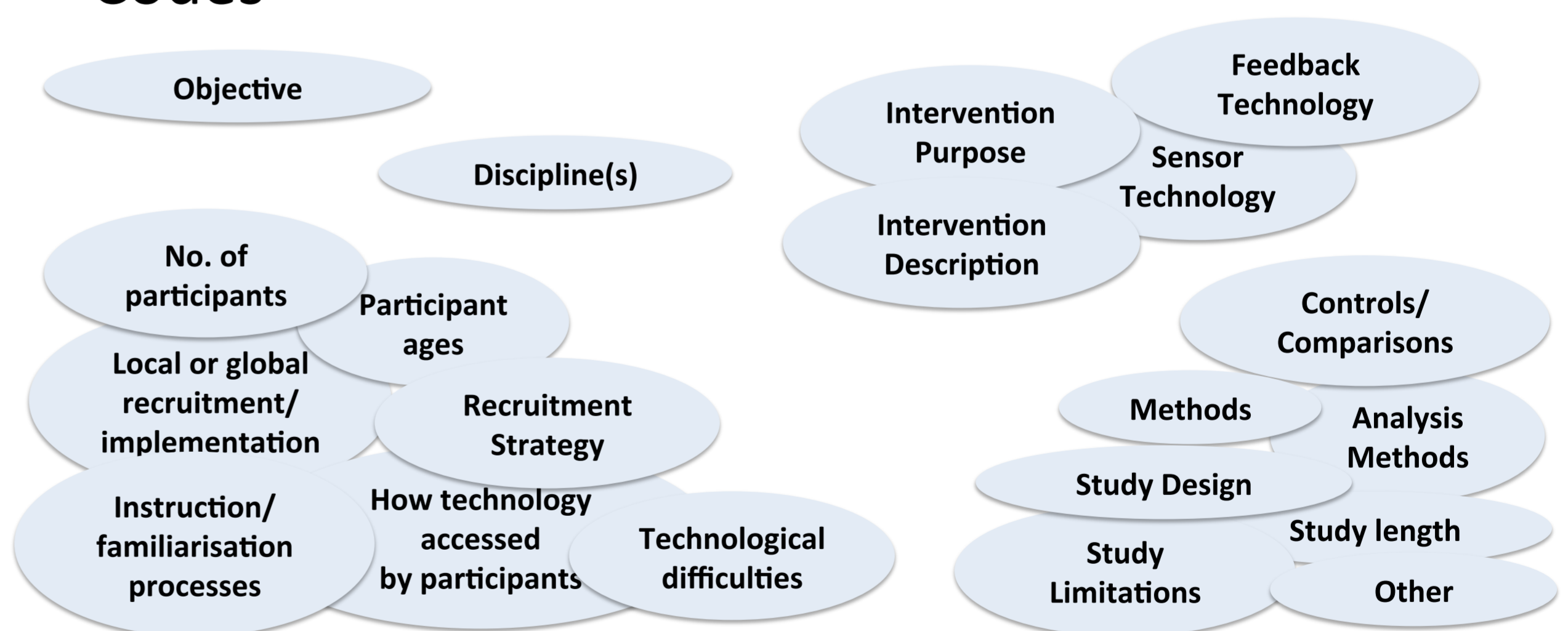
Exclusion criteria (selected):

- (1) Sensor was pedometer without connectivity
- (2) Sensor not mobile
- (3) Study evaluated sensor, not intervention

Results



Codes



Discussion

- Scoping review methodology useful to map out alternatives to RCTs and inform understandings of when, and when not, to use particular evaluative designs
- Challenges encountered in conducting review due to differences in disciplinary publication styles, databases and practices
- Different methodological and implementation considerations for lab versus field trials

Next Steps

- Further coding, categorisation and thematic analysis
- **Interviews** with researchers
 - Validation of findings
 - Opinions on future directions
- Use findings to **create hybrid methodology** drawing on evidence-based methods across disciplines

References:

- Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International journal of social research methodology*, 8(1), 19-32.
- Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the methodology. *Implement Sci*, 5(1), 1-9

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