

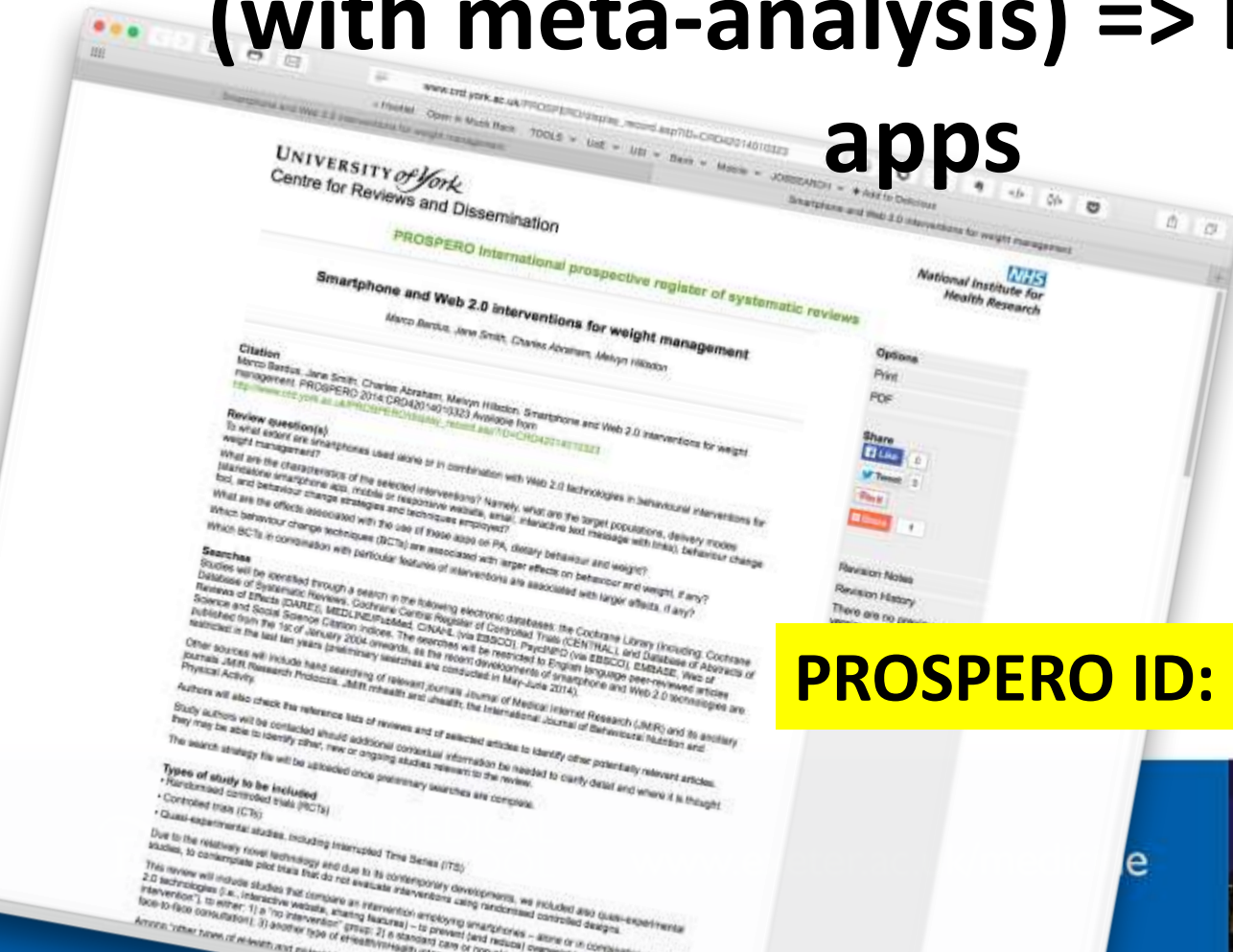


Smartphone Apps and Web 2.0 Technologies for Weight Management A Scoping and Systematic Review

Marco Bardus

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Scoping Review => Systematic review (with meta-analysis) => Review of apps



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Review Objectives

- 1) To **investigate the current use** of these technologies in eHealth research in the domain of weight management
- 2) To **identify interventions**, their content and behaviour change techniques (BCTs) employed
- 3) To **assess the effectiveness** of the interventions and optimal combinations of BCTs and delivery modes.



Research Questions

What is the current **state of the research** discussing the use of **smartphones** as standalone or in combination with Web 2.0 technologies for **weight management**?

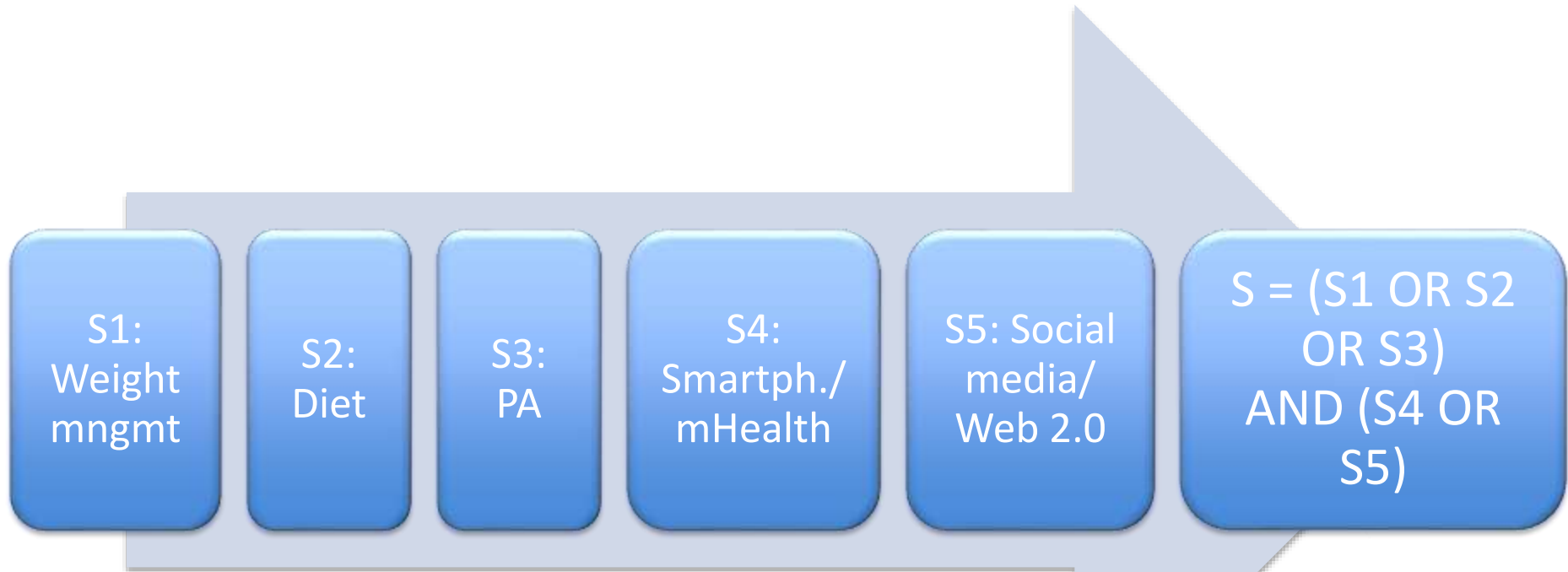
What **types of studies** have been conducted?

How **many interventions**?

What **technologies** are used, for **what purposes**?



Search Strategy: Keywords



S1-S2: (Hartmann-Boyce, Johns, Jebb, Aveyard, 2014; Oude Luttikhuis et al., 1996; Wieland et al., 2012); S3: (Foster, Richards, Thorogood, & Hillsdon, 2013); S4: (Bert, Giacometti, Gualano, & Siliquini, 2014; Huckvale, van Velthoven, Cash-Gibson, Felix, & Car, 2011; Marcano-Belisario, Greenfield, Huckvale, Gunn, & Car, 2012); S5: (Bardus, 2011; Chang, Chopra, Zhang, & Woolford, 2013; Chou, Prestin, Lyons, & Wen, 2013).



Search Strategy: Sources

Health Sciences

- Medline
- Embase
- CINAHL
- Cochrane Library
- Global Health
- SPORTDiscus

Social & Behav. Sciences

- Web of Science
- PsycINFO x2
- PsycARTICLES
- Comm. & Mass Media Complete
- ERIC
- Psych. And Behav. Sci. Collection

Computer sciences

- ACM Digital Library
- IEEE Explore

Grey Literature

- Open Grey
- WorldCAT



Search Strategy: Inclusion Criteria

Reference Type: Peer-review publications
(English, 2004-2014)

Scope: Discuss the role of mobile devices and/or Web 2.0 technologies with the specific focus on weight management or on the behaviours that contribute to weight management (i.e., diet or PA).

Type of study: Empirical studies

Technologies: Mobile devices (incl. smartphones, PDAs) and Web 2.0 technologies



Study selection

Identification

Records identified through electronic database searching
n = **5490**

Screening

Records after duplicates removed
n = **4003**

Records screened
n = **4003**

Records excluded
n = **3561**

Eligibility

Full-text articles
(n = **510**)

Full-text articles excluded, with reasons
n = **186**
Reference type: n = 63
Scope: n = 51
Type of study: n = 35
Technology: n = 37

Included

Studies included in qualitative synthesis
n = **324**

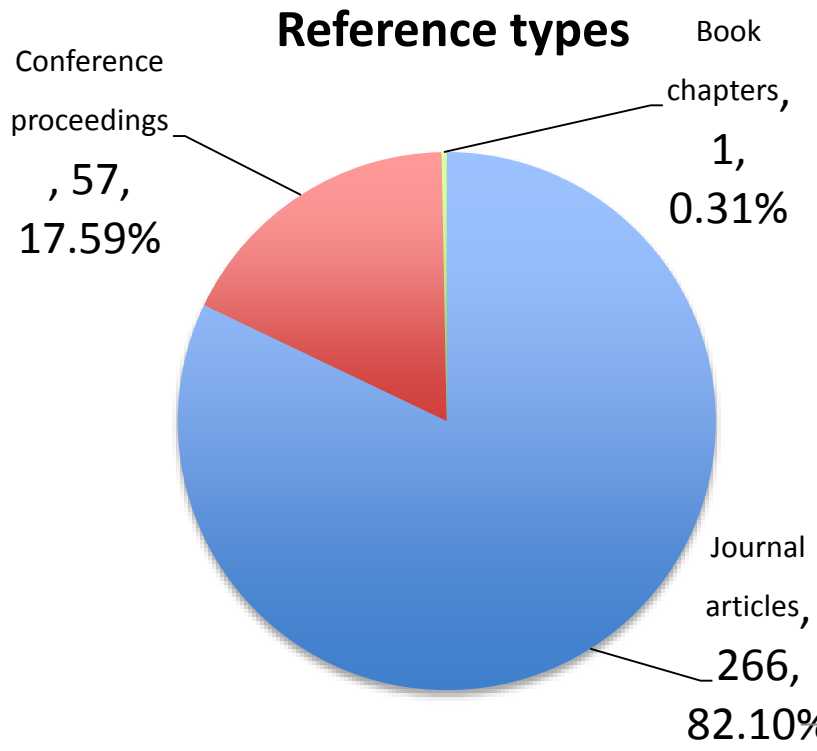
Studies included in
n = **??**

Two reviewers
Cohen's kappa: .585
Gwet's AC1 = .905
Agreement = 92.3%

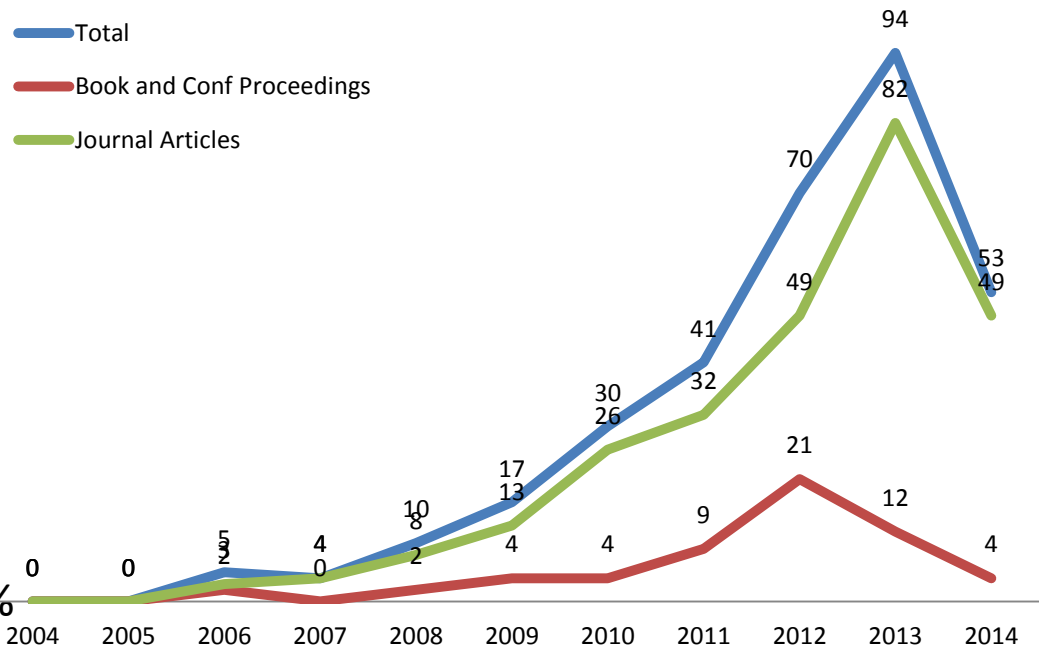
Two reviewers
Cohen's kappa: .720
Gwet's AC1 = .774
Agreement = 87.5%



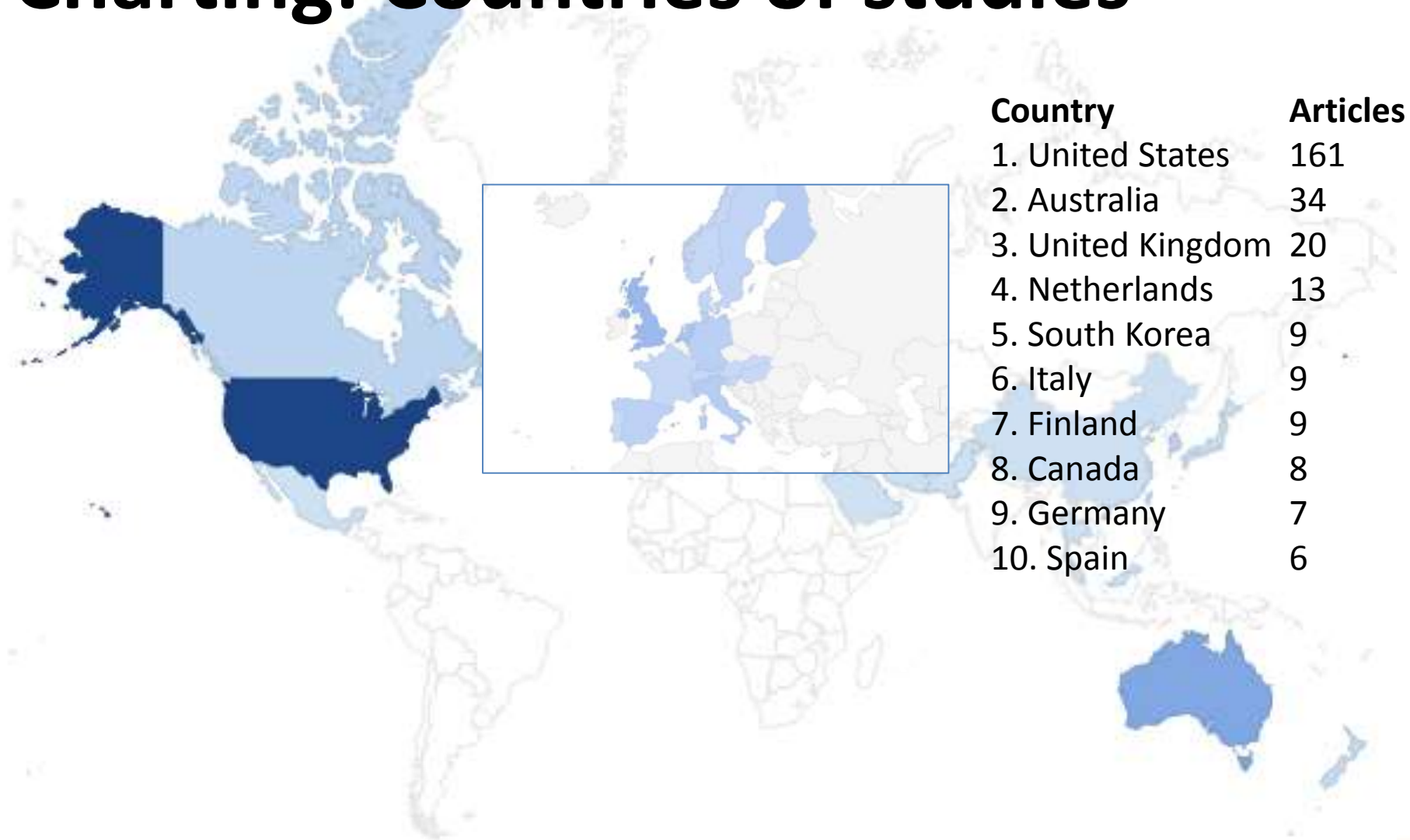
Charting: Reference Types and Years



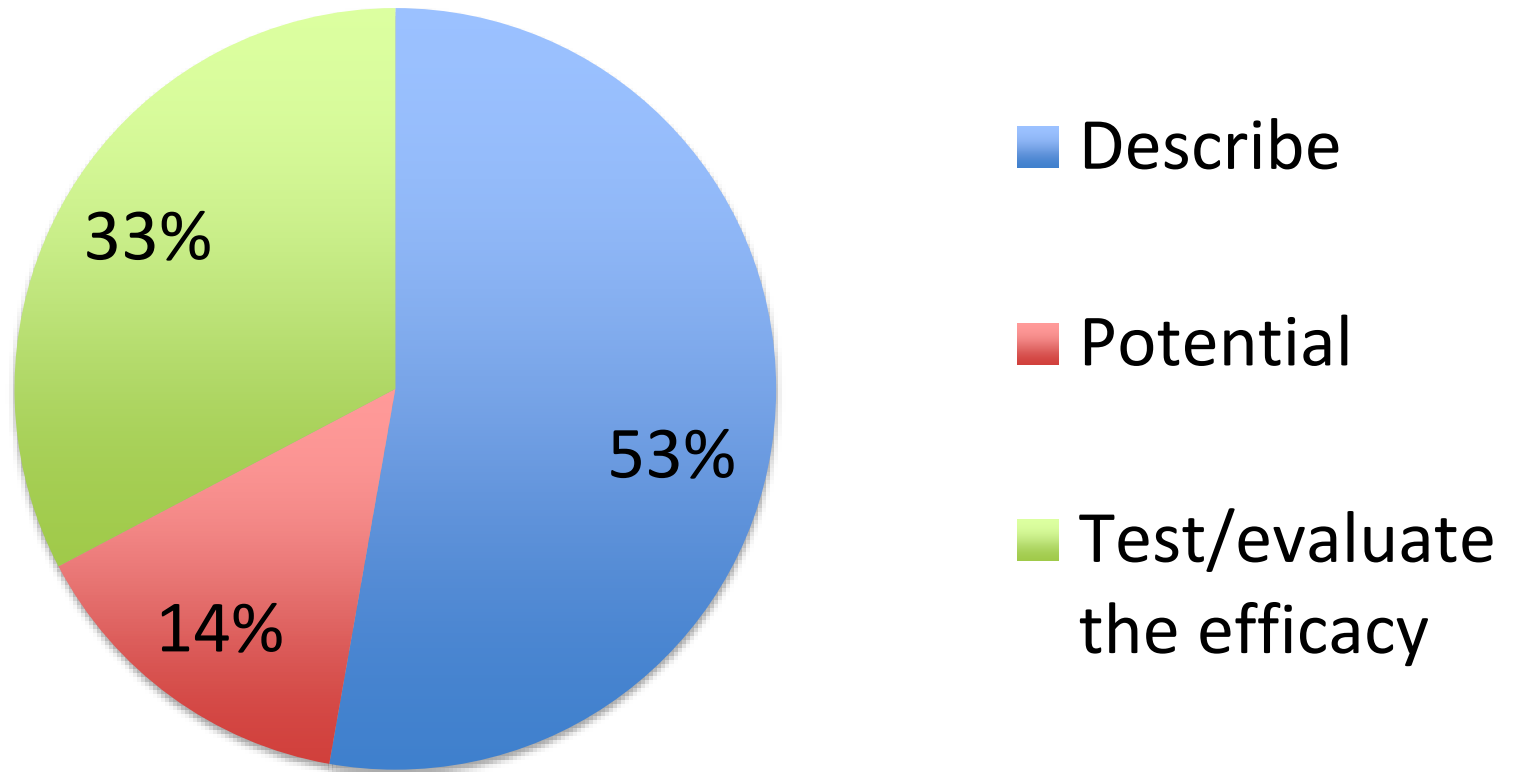
Number of articles by reference type



Charting: Countries of studies



Charting: Type of Studies and Purpose (n = 324)



Preliminary considerations

Despite a large number of “descriptive” and “potential” studies, there is some evidence suggesting that smartphone and Web 2.0 technologies **are employed** in weight management interventions.

There is a considerable number of studies that **evaluate** (or will evaluate) the efficacy of these technologies.



Next Steps

- **Complete data extraction**
 - **Population:** age, gender, setting
 - **Interventions:** Format/Contact type
 - **Interventions:** Content: change techniques/strategies; engagement strategies
 - **Comparisons**
 - **Outcomes** (weight, BMI, etc.)
- **Qualitative narrative synthesis**
- **Meta-analysis:** conducted if the included studies are sufficiently homogeneous in terms of their interventions and outcomes reported and if the information retrieved is complete enough to extract useable outcome data.



Thank you!

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