Theory-based mobile interventions for the self-management of type 2 diabetes: A literature review

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INTRODUCTION

- Theory-based interventions have been recommended to identify relevant theoretical constructs to be targeted, guide selection of subjects and enhance understanding of how an intervention works.
- Despite the significance of using theory in interventions, there is no evaluation of exactly how theory was used to develop or evaluate the mobile interventions for the type 2 diabetes.

PURPOSE

- This literature review aimed to analyze studies that used **theory-based mobile interventions** to promote self-management among adults with type 2 diabetes.

METHODS

- **Search databases:** PubMed, EMBASE, CINAHL, and Cochrane library
- **Search terms:** (T2DM OR Type 2 Diabetes Mellitus) AND (Self-management OR Self care) AND Theor* AND (Mobile health OR mHealth OR eHealth)
- **Study design:** randomized controlled trials (RCTs) or pilot randomized controlled trials (pilot RCTs)
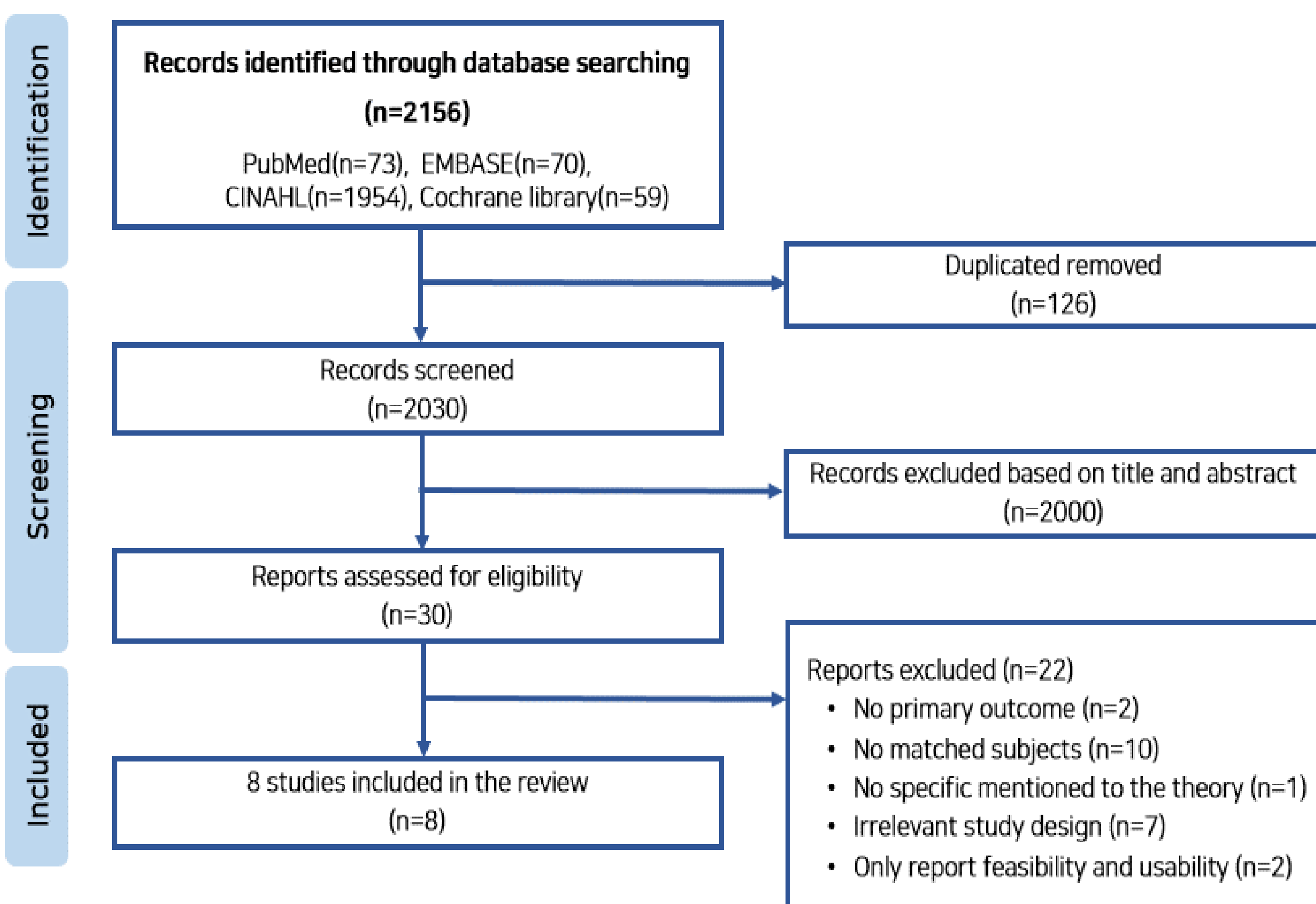- **Publication date:** until March 31, 2022
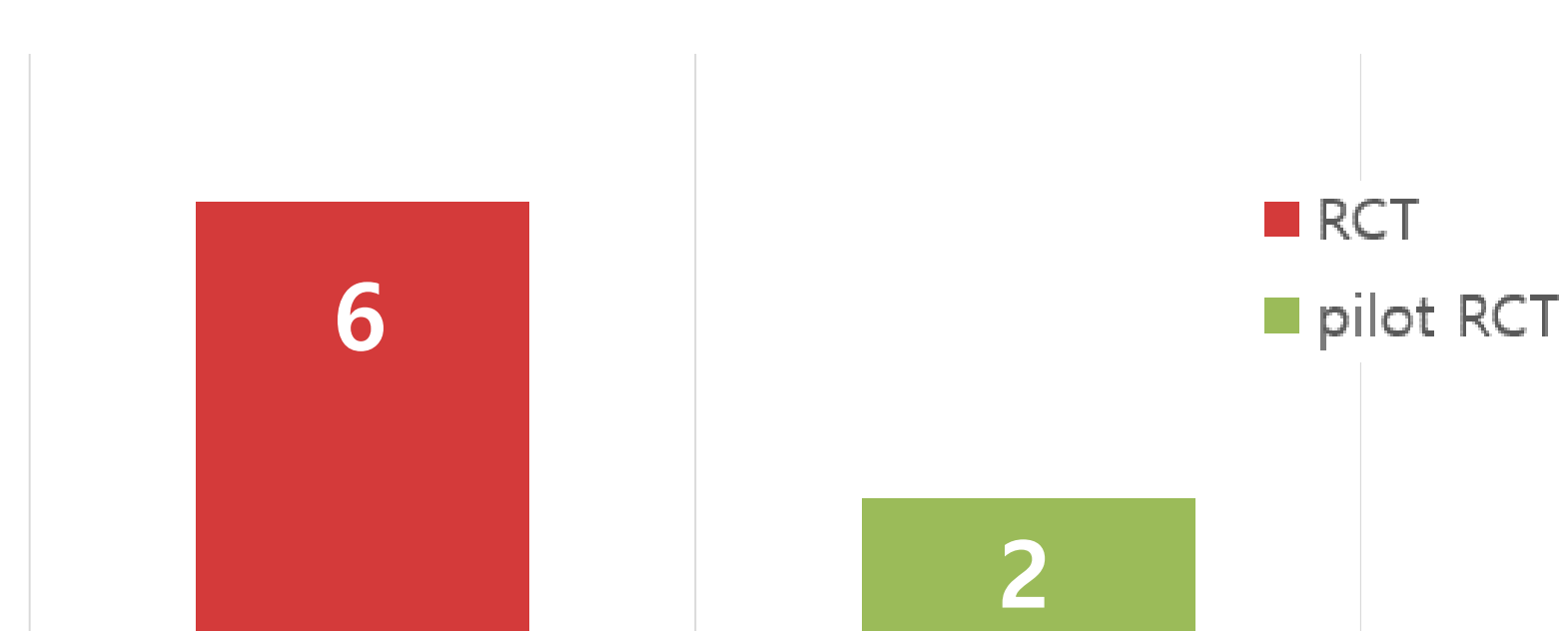

Fig.1 Flow chart of study selection process

RESULTS

Fig.2 The number of study design

RESULTS (Cont.)

❖ Type of theory (n=8)

Social Cognitive Theory	2 (25.0%)
Theory of Planned Behavior	1 (12.5%)
Health Belief Model	1 (12.5%)
Information Motivation Behavioral Skills Model	1 (12.5%)
Fogg Behavior Model	1 (12.5%)
Transtheoretical Model and Theory of Planned Behavior	1 (12.5%)
Transtheoretical Model and Social Cognitive Theory	1 (12.5%)

❖ Type of interventions (n=8)

Application	3 (12.5%)
SMS	2 (25.0%)
Application + Web-based	2 (25.0%)
Telephone	1 (12.5%)

❖ Contents of the interventions

Physical activity	8 (100.0%)
Diet	7 (87.5%)
Blood sugar control	3 (37.5%)
Social support	3 (37.5%)
Reminders	3 (37.5%)
Medication	2 (25.0%)
Motivational messages	2 (25.0%)

* Multiple responses

❖ Outcome variables

	Indicator	p-value < .05	p-value ≥ .05
Biological	HbA1c (n=8)	4	4
	Weight (n=5)	3	2
	Lipid profile (n=3)	1	2
	BP (n=3)	1	2
Behavioral	Self-management (n=4)	2	2
	Medication taking (n=2)	-	2
	Insulin dose (n=1)	1	-
	Knowledge (n=1)	1	-
Psychosocial	Quality of life (n=3)	1	2
	Self-efficacy (n=2)	2	-
	Satisfaction of treatment (n=1)	-	1

Fig.3 Overview of this study

- Of the 8 studies, only 3 studies measured the constructs of the theory; **SCT (Self-efficacy), HBM (Self-efficacy), TTM+TPB (Diabetes self-management)**

CONCLUSIONS

- 8 studies were described as theory-based, but evidence that such programs properly used theoretical constructs is insufficient.
- Therefore, it is necessary to evaluate a systematic approach to the use of theory as well as whether the outcome variable that can confirm the effect of the theory is well measured.

Keywords

- Diabetes Mellitus, Type 2; Telemedicine; Self care; Self-management;