Text Message Interventions for Physical Activity among University Students: A Systematic Review and Meta-Analysis

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Physical Inactivity in University Students

Physical Activity (PA) guidance for adults[1]

- (**150** minutes Moderate-Intensity Physical Activity ***OR* 75** minutes Vigorous-Intensity Physical Activity) per week **AND** ≥ 2 days muscle-strengthening activity per week

- **40.2%** of undergraduate student and **38.3%** of graduate and professional students met PA guidance. (Fall 2021)[2]

Text Message Interventions

- An effective tool to address behavior change for public health issues, including physical activity[3-6]
- No meta-analysis has evaluated the effectiveness of text message interventions to promote PA in university students

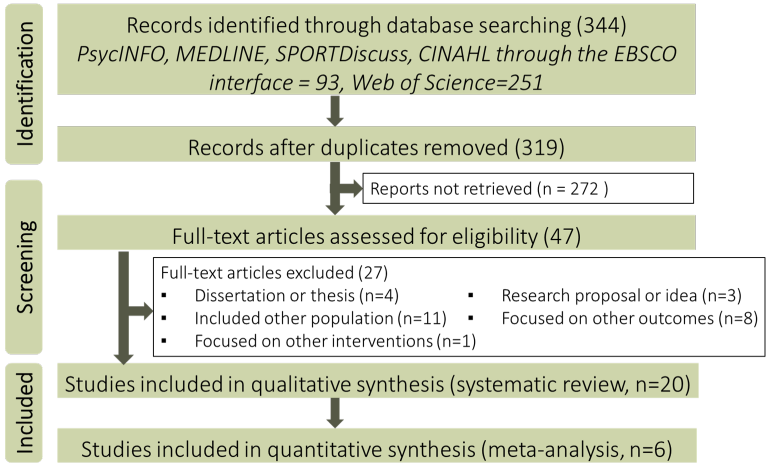
Objective

- To conduct a systematic review and meta-analysis of text message interventions targeting physical activity among university students from published literature

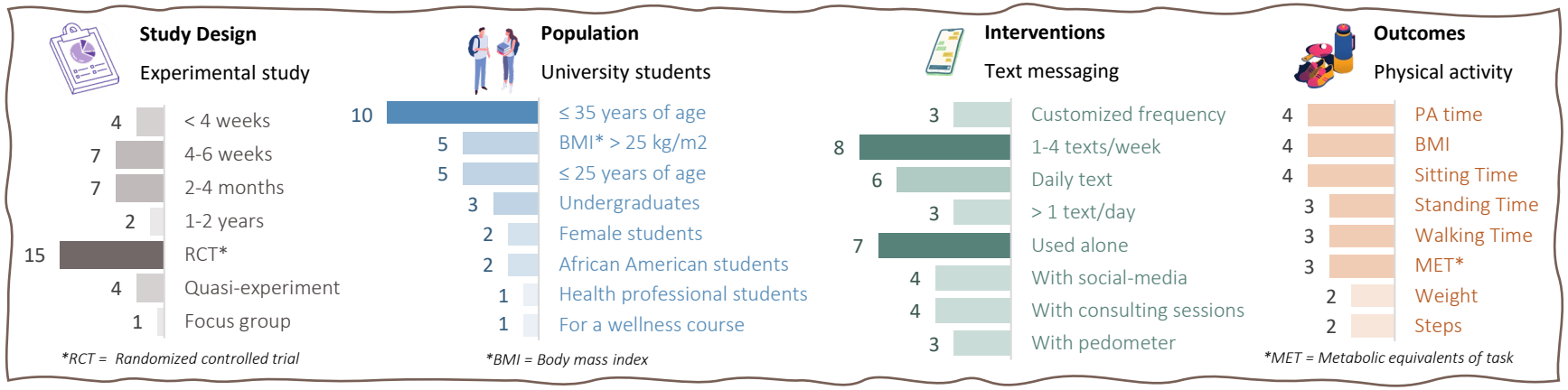
Search Strategy

- Electronic search was conducted in October 2022 in SPORTDiscuss, PsycINFO, MEDLINE, CINAHL through the EBSCO interface and Web of Science
- **Key words: 1) "Physical Activity", 2) "University Student", and 3) "Text message"**
- Two reviewers for abstracts and full-text screening & quality assessment

Fig. 1 PRISMA Flow Diagram



Results: Systematic Review (n=20)



Results: Meta-Analysis (n=6)

Fig. 2 Impact of text message interventions on weekly **MET** (Metabolic equivalents of task) (RCT, n=3)

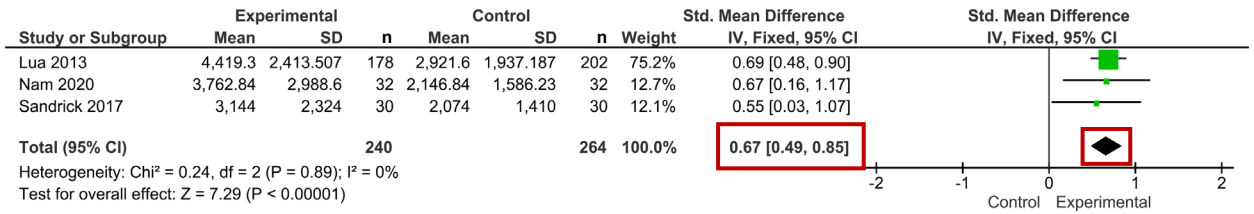
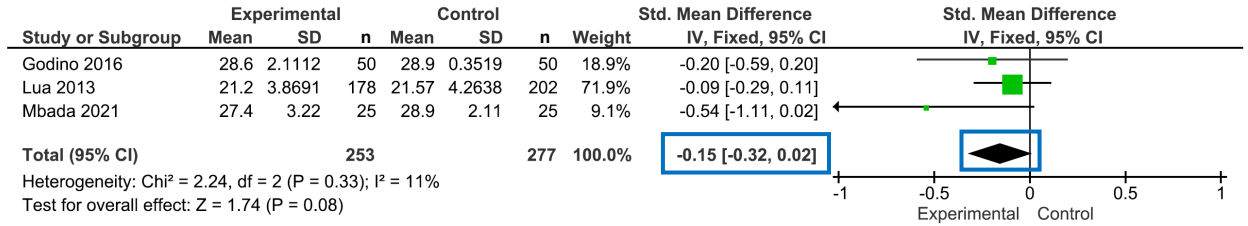


Fig. 3 Impact of text message interventions on **BMI** (RCT, n=3)



Discussion

- Commonalities contributed to positive findings: personalized or tailored messages, customized frequency, relevant, engaging, comprehensible contents, and being incorporated into other programs
- Positive effects of text message on university students' physical activity have been observed for **MET** but not for other outcomes.
- Limitations: The heterogeneity of study designs, qualities, outcome measurements, and intervention length among the included articles, the limited number of studies in meta-analysis, and publication bias was not able to be assessed.
- Text message intervention studies with well-controlled study design are needed, and future research should examine the characteristics of effective text messages among university students.

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Abstract & References

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