



Digital Health Interventions for Adult Cancer patients

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Introduction

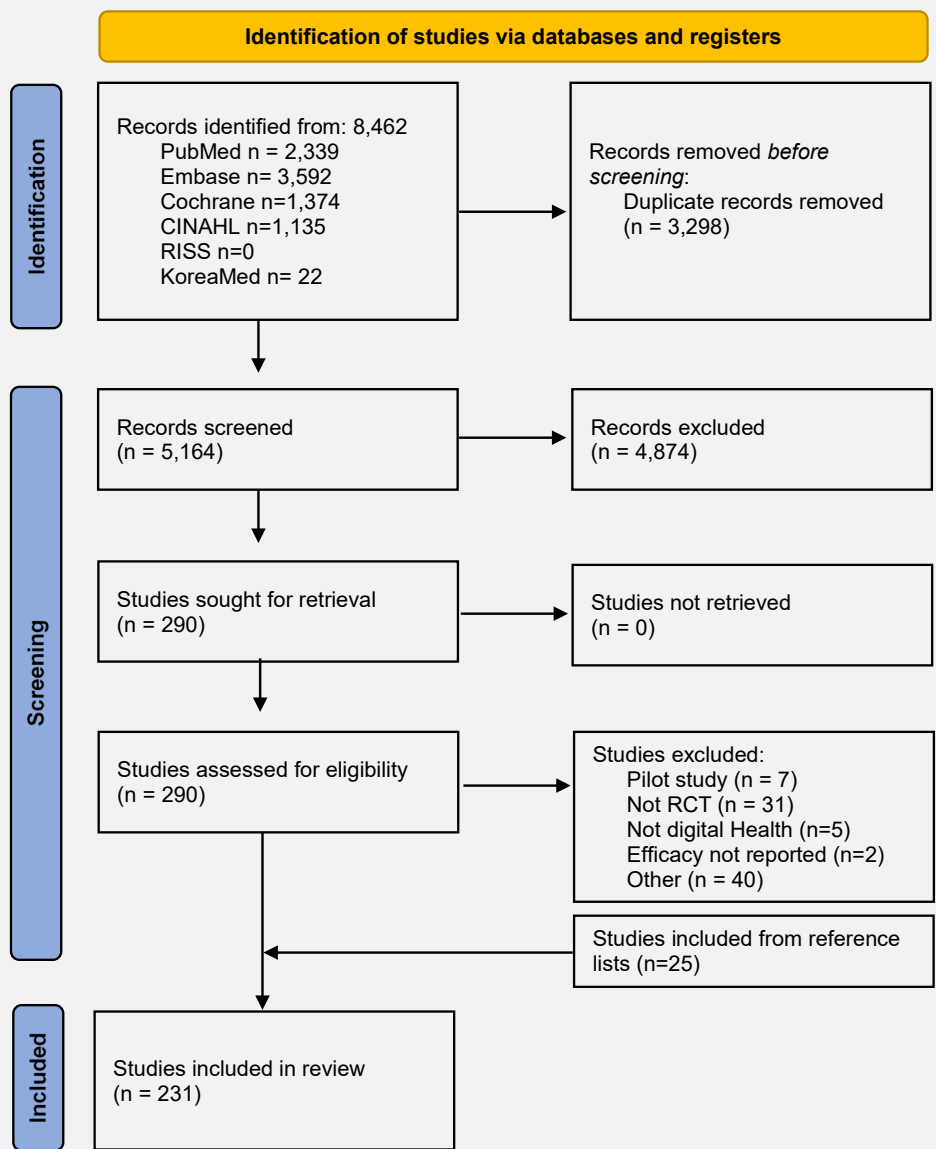
- Remarkable advances in information technologies
- Strong demands of digital healthcare in cancer patients
- Call for effective digital health interventions for cancer patients

Purpose

- The aim of the study was to provide an overview about digital health interventions developed and evaluated in adult cancer patients.
- The primary question was “What digital health interventions were developed and evaluated for adult cancer patients?”

Methods

- Design: A scoping review according to the JBI methodology [1]
 - Population: Adult cancer patients
 - Concept: Digital health interventions
 - Context: Open
- Databases: PubMed, CINAHL, Embase, Cochrane Library, RISS, and KoreaMed were searched for RCT effectiveness studies published 1999 ~ July, 2021.
- Search terms: ‘adult’, ‘cancer’, ‘patients’, ‘digital health’, ‘randomized controlled trial’
- Data extraction: Data extraction tool
- Data analysis:
 - Types of digital health interventions: categorized according to the Deloitte [2] and Aapro’s list of digital health interventions [3].
 - Functions of digital health interventions: according to the National institute for health and care excellence framework for digital health technology [4]
 - Outcomes of digital health interventions: outcomes were summarized if there existed multiple studies evaluating the effectiveness of the intervention for same target problem



Results

- A total of 231 studies were reviewed
- Most digital health interventions have been applied at home (81%)
- Types of digital health interventions
 - Web-based (50.2%), Mobile app (13.4%), Telemedicine (7.4%), Telemonitoring (4.8%), Wearable (3.9%)
 - Multiple modalities (20.3%)
- Functions of digital health interventions
 - Self-manage was the most frequently identified function regardless of cancer stages, and was the most frequently applied during treatment phase
 - Inform was frequently applied function at diagnosis
 - Preventive behavior change was frequently applied function at survivorship phase
 - Multiple functions (29.9%)

Figure 1. Digital Health Intervention Functions by Stage (n=185)

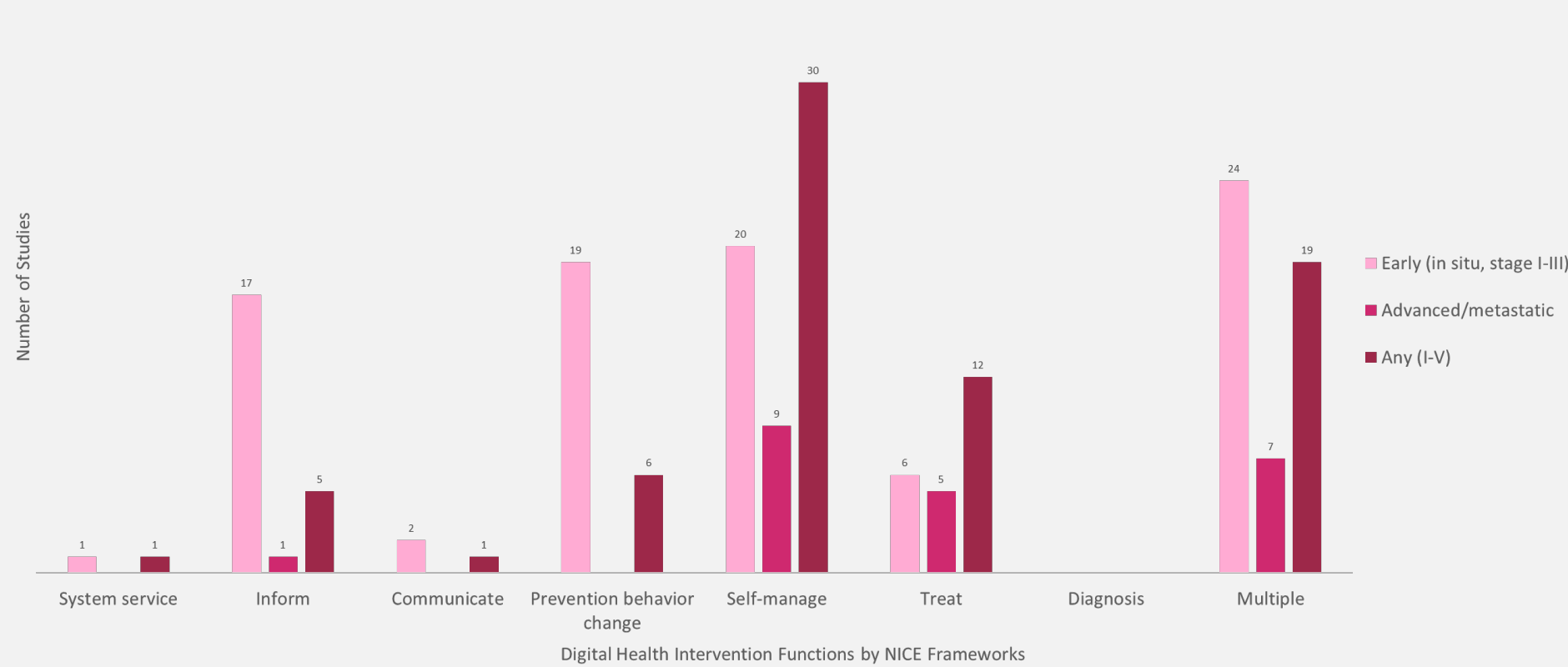
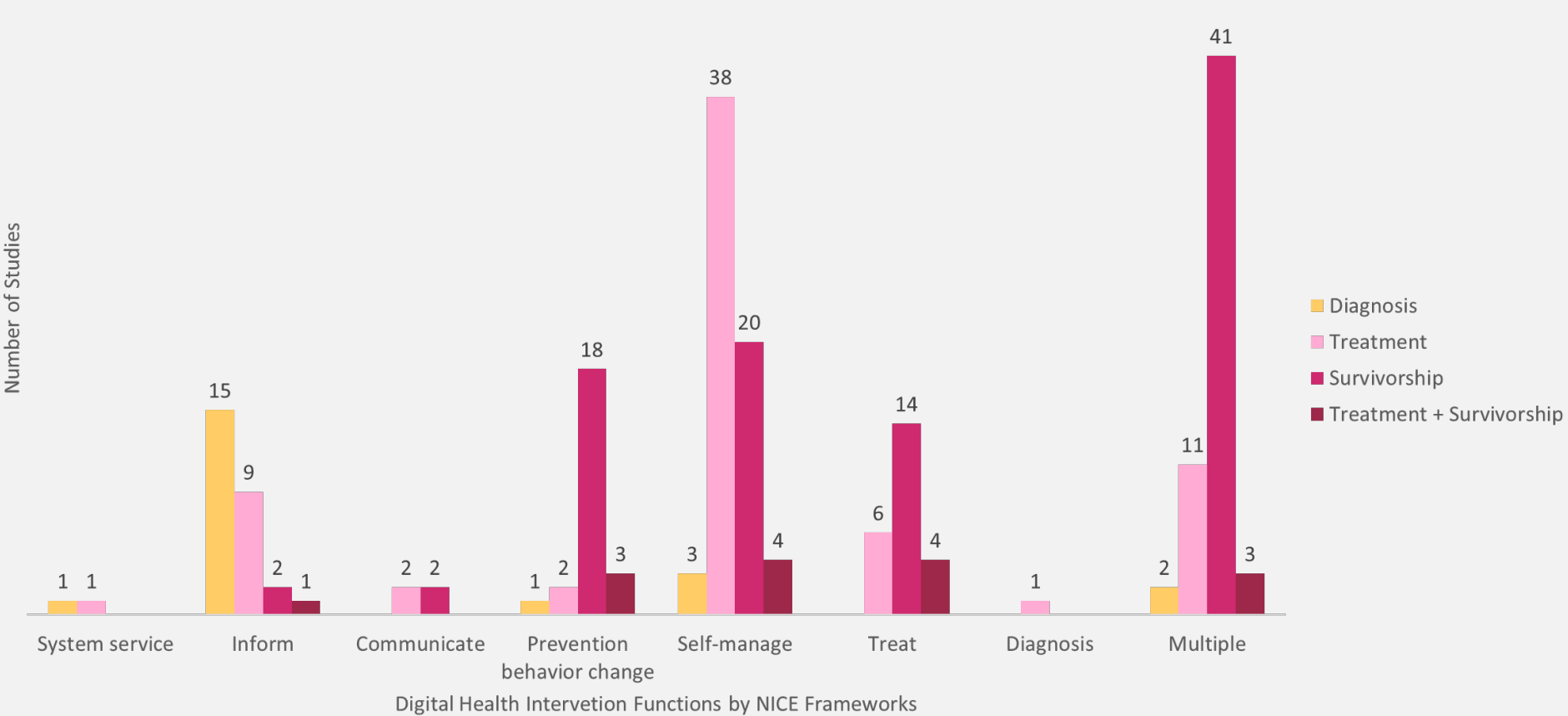


Figure 2. Digital Health Intervention Functions by Phase (n=204)



Results (continued)

Table 1. Digital health interventions with consistent positive outcomes

Target	Type	Function
Symptom	Web-based	Self-manage, Multiple functions
Cognitive function	Web-based	Treat
Fear of cancer recurrence	Web-based	Treat

Discussion

Further studies are recommended to understand effect of the digital health care interventions for specific cancer types, stages, and phase of cancer journey

Conclusions

Digital health interventions for adult cancer patients were thoroughly reviewed. Currently available types and functions of digital health interventions for cancer patients and areas for further development were identified. Systematic reviews of the identified digital interventions suggesting its effectiveness are strongly recommended to integrate digital health interventions into clinical practice.

Acknowledgement

This study was supported by the Brain Korea 21 FOUR project funded by the National Research Foundation of Korea, Yonsei University College of Nursing (2021-22-0159).

References

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