EHMA 2025

Taking action to improve health for all

Prevalence and effectiveness of digital mental health interventions for adolescents worldwide

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Taking action to improve health for all

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- Public Health teaching assistant at King Khalid University – Saudi Arabia
- Research projects on public health through evidence-based work

ADOLESCENTS' MENTAL HEALTH

- Adolescence is a crucial stage of life
- Mental health needs of adolescents are becoming a priority
- Barriers such as stigma, confidentiality, affordability, and limited resources
- Emerging digital health technologies hold significant promise
- Effectiveness and applicability of digital mental health interventions for adolescents in varied cultural and socioeconomic contexts are largely unanswered

RESEARCH AIM

To identify the prevalence of existing digital health promotion interventions for adolescents' mental health and to investigate their effectiveness globally.

Systematic review focused on:

- Successful digital health promotion interventions for adolescents
- Adolescents' engagement and usability of these interventions
- Implementation challenges across different socio-cultural settings
- Approach to the unique mental health needs of adolescents

METHODS

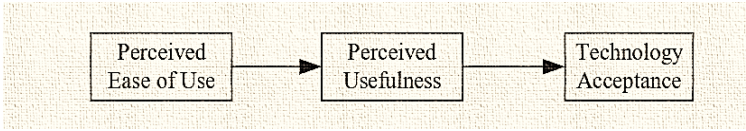
- PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)
- Protocol registered in PROSPERO (number CRD42024549330)

Search strategy

- PubMed, PubMed Central, ERIC, Scopus, and Ovid
- Key words: digital health technologies, adolescent populations, and mental health
- PICOT/S: inclusion and exclusion criteria; multi-stage screening

Analysis

- JBI critical appraisal tool
- Technology Acceptance Model (TAM)



Ma Q, Liu L. The Technology Acceptance Model: A Meta-Analysis of Empirical Findings. In M. Mahmood (Ed.), Advanced Topics in End User Computing 2005; 4: 112-128).

RESULTS

Initial search resulted in 4,503 unique records

105 publications remained for full-text screening

Finally, 15 studies were included:

- empirical research (in English)
- conducted among adolescents aged 10–19 years
- examined digital health interventions designed to promote mental health and prevent mental health problems
- applied in non-clinical settings, such as schools, communities, or online environments
- only 2 studies of low or very low quality

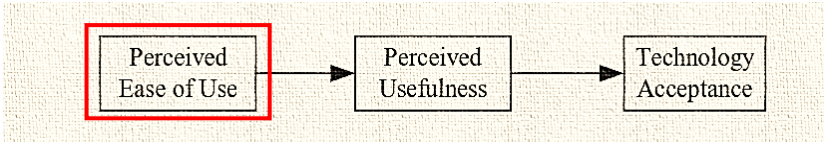
Classification categories	N	(%)
Year of publication		
2016	3	20.0%
2020	2	13.3%
2021	1	6.7%
2022	4	26.7%
2023	4	26.7%
2024	1	6.7%
Type of study		
Explanatory	13	86.6%
Evaluative	2	13.3%
Research approach		
Quantitative	12	80%
Mixed methods	3	20%
Study design		
Randomized controlled trial (RCT)	4	26.7%
Cluster randomized controlled trial (RCT)	10	66.7%
Pilot study (cross-sectional)	1	6.7%
Data collection		
Quantitative only (surveys/questionnaires)	12	80.0%
Mixed methods (surveys + interviews/focus groups)	3	20.0%
Type of intervention		
Mobile app-based interventions	4	26.7%
Online/web-based programs	9	60.0%
Game-based (digital + in-person) program	1	6.7%
Multicomponent school-based intervention (app usage)	1	6.7%

Perceived Ease of Use

- User-friendly Interfaces
- Short and relevant content
- Logical structure and incentives
- Stigma-free and private environments
- Institutional support

Challenges Identified:

- ✓ technical issues
- ✓ unclear purpose
- ✓ lack of engaging design



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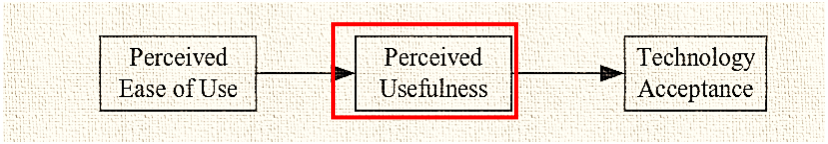
Perceived Usefulness

- Direct benefits: reduced incidence of depression, anxiety, and stress
- Indirect benefits:
  - ✓ Improved mental health literacy
  - ✓ Improved coping skills
  - ✓ Awareness of mental health
- Encouraging positive behavioral changes
- Possibility to align with user habits

Challenges Identified:

Mixed reactions from older adolescents



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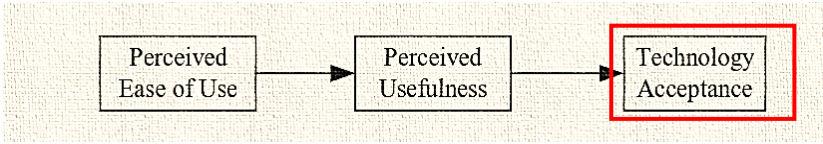
Technology Acceptance

- High engagement rates and strong program completion (80-95% completion of exercises)
- Long-term uptake (more than 50% applied coping skills post-intervention)
- School context and delivery timing mattered

Challenges Identified:

drop-off in interest over time



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CONCLUSIONS

- Effectiveness depends on intervention design, implementation quality, and contextual support.
- Adolescents prefer simplicity, brevity, and privacy; usability is crucial but not sufficient
- Behavioral intention is strong, but engagement drops without support.

Research gaps and future directions:

- ✓ Explore design flaws (technical, engagement-related)
- ✓ Explore long-term follow-ups to measure sustained impact
- ✓ Explore co-design with adolescents to ensure relevance

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THANK YOU

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