Review of the content and quality of mobile apps for speech language therapy

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We found a lack of interactive and engaging elements in the apps, a critical factor in sustaining self-managed speech-language therapy.

More evidence-based apps with a focus on human factors, user experience, and a patient-led design approach are required to enhance effectiveness and long-term use.

Introduction

Worldwide, more than 75% of people with acquired brain injury (ABI) experience a communication disorders.

Communication disorders are impairments in the ability to communicate effectively that may involve speech impairment, language impairments, communication difficulties associated with cognitive disorders, and impaired social communication skills.

Such disorders may have enduring impacts on employment, social participation, and quality of life.

Technology-enabled interventions such as mobile apps have the potential to increase the reach of speech-language therapy to treat communication disorders.

However, ensuring that apps are evidence-based and of high quality is critical for facilitating safe and effective treatment for adults with communication disorders.

Our aim was to systematically review the content and quality of the mobile apps available to adults with communication disorders for speech-language therapy.

Methods

- Google Play Store, Apple App Store and web searches occurred to indentify mobile apps for speech-language therapy.
- The search terms were keywords associated with 'speech- language therapy', and 'speech rehabilitation'.
- Apps were included in the review if:
(i) they were designed for the treatment of adult communication disorders after ABI;
(ii) they were in English; and
(iii) they were readily available to consumer via online app stores either free or for purchase.
- Each app was scored by certified speech pathologists across several domains **using the validated Mobile App Rating Scale (MARS)**, including how engaging they were, their functionality, aesthetics, the information included and their perceived quality and impact.

Results

A total of 70 apps were identified that targeted language (43), speech (17), cognitive-communication (8), voice (6), and numeracy (5).
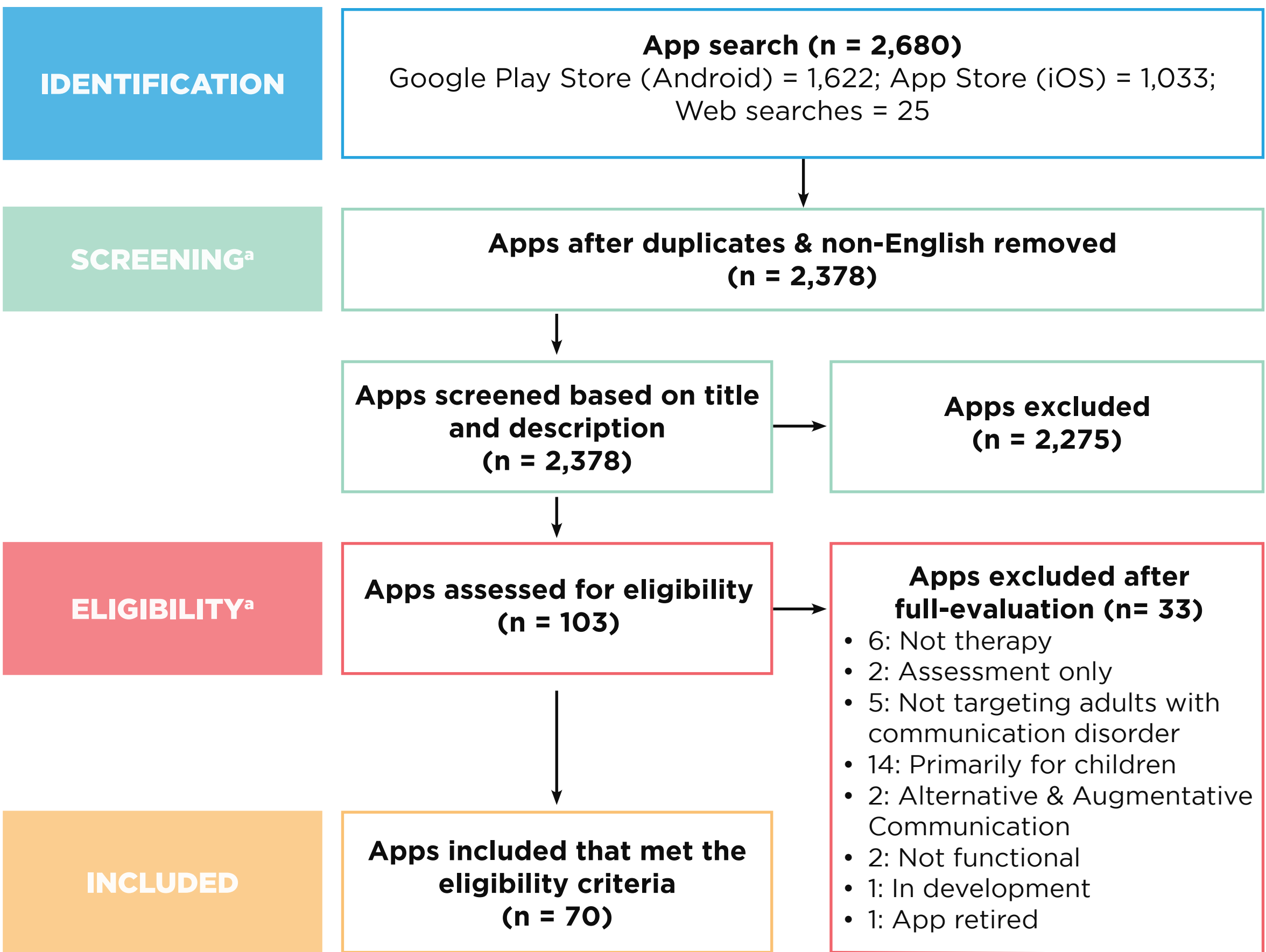
- The apps scored an average of 3.7 out of 5 on the MARS scale.
- Most apps (86%) were rated as acceptable (3 out of 5).
- Most apps prioritised functionality (mean 4.3). over the other domains (mean 3.3 – 3.8).
- The engagement domain was unexpectedly low (mean 3.3 out of 5).
- There was limited evidence-based research for the clinical benefits of the apps.

This review showed that available apps appeared to favour functionality over aesthetics, information and engagement.

This was surprising given the long-term engagement in speech-language therapy commonly required to gain real health benefits.

Conclusion

The findings of this study have a number of recommendations and practical implications for the future development of apps designed to assist people with communication disorders:

- Incorporating game design elements in the app to enhance engagement in therapy.
- A multidisciplinary approach to implement a human-centred or co-design process for developing mobile apps involving consumers and all stakeholders to ensure apps tailored to targeted consumer needs and preferences.
- Including subject matter expert ratings for mobile health apps to provide a more reliable measure of the app's quality.
- Professional bodies such as speech-language pathology professional bodies establish a database where app developers could register their apps.

IDENTIFICATION

App search (n = 2,680)
Google Play Store (Android) = 1,622; App Store (iOS) = 1,033; Web searches = 25

SCREENING[a]

Apps after duplicates & non-English removed (n = 2,378)

Apps screened based on title and description (n = 2,378)

Apps excluded (n = 2,275)

ELIGIBILITY[a]

Apps assessed for eligibility (n = 103)

Apps excluded after full-evaluation (n= 33)
- 6: Not therapy
- 2: Assessment only
- 5: Not targeting adults with communication disorder
- 14: Primarily for children
- 2: Alternative & Augmentative Communication
- 2: Not functional
- 1: In development
- 1: App retired

INCLUDED

Apps included that met the eligibility criteria (n = 70)

a. Studies screened and accessed for eligibility based firstly on title and App description, and then by downloading the App in full use.

Take a picture or scan the QR code to download the full paper

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