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ADMINISTRATIVE INFORMATION

Support - Indian Council of Medical Research (ICMR).

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2024100035

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 9 October 2024 and was last updated on 9 October 2024.

INTRODUCTION

Review question / Objective The aim of this study is to conduct a comprehensive and systematic review of mobile-based mental health apps available in virtual stores that are accessible to Indian end users in order to evaluate their scope, usability, purposes served and adherence to scientific principles.

Rationale The prevalence of mobile-based mental health applications has witnessed a significant surge, with an increasing number of individuals incorporating these tools into their mental health care routines. Despite their growing popularity, there remains a considerable gap in our understanding regarding the efficacy and scientific validity of these applications. In this study, our primary objective is to conduct a comprehensive and systematic review of mobile-based mental health apps, aiming to critically assess their scope, usability, purposes served and adherence to scientific principles. Although there are reviews of studies on mental health apps, (Sudarshan &

Mehrotra, 2021; Mehrotra &Tripathi, 2018; Kumar & Mehrotra, 2017), there is scarcity of systematic reviews that directly examine the mental health apps, (in terms of their features, scope and functions) that are available to Indian end users on virtual stores. This exercise becomes critical in view of mushrooming of apps available to public with varying purposes.

Condition being studied This is a systematic review of smartphone apps in virtual stores and this systematic review of apps follows guidelines of systematic app reviews provided by Marshall, Dunstan, & Bartik, (2020). It involves an adaptation of PICOS model for app store review. In this context, the review focuses on various mental health conditions (depression, anxiety disorders, OCD, addiction, schizophrenia , PTSD etc.) for which smartphone apps are available.

METHODS

Search strategy The review involves search of mental health apps In the app store (Android and

iOS) using the Protocol for App Store Systematic Reviews (PASSR) developed by Marshall, Dunstan, & Bartik, (2020) which is adapted from the AMSTAR 2 Checklist by Shae et al (2017) and PRISMA Checklist by Moher et al (2009).

Step 1 Developing search terms based on literature review and mental health experts views

Step 2 Carrying out a comprehensive search on android and apple stores

Step 3 Applying criteria (inclusion/exclusion) to identify eligible apps and removing duplicates to arrive at a list of apps to be reviewed in depth.

Participant or population The population in this context of app review refers to the pool of the mobile mental health apps available on the virtual stores (android and iOS). as defined in the PASSR protocol mentioned above.

Intervention In the context of review of mental health apps, this refers to the nature of various components that are offered within such apps which may range for psychoeducation, self-help strategies and exercises to chat based support etc. The range of interventions offered via apps will be documented.

Comparator NIL.

Study designs to be included Using the Protocol for App Store Systematic Reviews (PASSR) developed by Marshall, Dunstan, & Bartik, (2020) which is adapted from the AMSTAR 2 Checklist by Shae et al (2017) and PRISMA Checklist by Moher et al (2009). It is the apps which are being reviewed and not the studies on the apps.

Eligibility criteria

Inclusion criteria :

a. Relevance to mental health

b. Language – English

(For documentation purposes – will take note of all the apps which are available in Indian languages)

C. Free apps and apps involving in-app purchase (For the latter, what is freely available will be reviewed)

Exclusion criteria:

a. Apps not meant for information, guidance, support or intervention related to mental health

b Apps that are fully paid

c. Apps not available to Indian public in virtual stores.

Information sources Google play store and Apple app store (i Tunes).

Main outcome(s) The study will include documenting the stated outcomes of the mental

health apps under review . These may range from improved awareness, early identification, self-help skills, peer/professional support etc.) for mental health conditions.

Additional outcome(s) The systematic review will help in developing a user-friendly repository of apps for end-users /consumers of mental health apps in India.

Data management The data gathered in the process of systematic review will be stored in a secure system with limited access to the research staff working on this study. All the steps utilized will be systematically documented.

Quality assessment / Risk of bias analysis Risk of bias will be documented in terms of mentioning if any apps being reviewed have been examined by any member of the research team for effectiveness/efficacy.

Strategy of data synthesis Qualitative analysis of the apps and quantitative analysis of Mobile Application Rating Scores (MARS) scores of apps. Both these methods will be utilized in addition to descriptions in terms of frequencies and percents of relevant parameters.

Subgroup analysis NA.

Sensitivity analysis NA.

Language restriction Only apps in English language will be reviewed. Apps available in Indian languages will be documented.

Country(ies) involved India.

Keywords Mental health apps, mHealth, review of apps, smartphone apps.

Dissemination plans Though presentations, publications and development of a website for end-users.

Contributions of each author

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