Moving Beyond "Screen Time": A Scoping Review Investigating the Relationship Between Smartphone Use and Anxiety in Youth

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Questions or thoughts? Get in touch!

Background

Concern about anxiety amongst children and youth is rising
- Anxiety-related disorders are the earliest occurring, most common, and fastest rising mental health diagnoses amongst Canadian children and youth (Wiens et al., 2020)

Concomitant drastic increase in technology use amongst youth
- More than 90% of North American youth report owning/having access to a smartphone; "digital divide" has narrowed considerably (e.g., Rideout et al., 2022)

Hypothesized link between technology use and anxiety
- Widely suggested that technology use is negatively affecting children and youths' mental health (e.g., Twenge, 2017)

Research has failed to establish generalized relationship
- Meta analyses suggest small-to-medium associations; highlight lack of evidence for directionality/causality or ability to rule out third variables (e.g., Orben, 2020)

Pervasive focus on "screen time" has limited findings
- Important descriptive information lacking about function of use, or "how" or "why" young people use their devices (Büchi, 2021; Griffioen et al., 2021)

Research Question

What is currently known from the literature about the content, context, and function of smartphone use by youth who experience anxiety?

Objectives

1. To identify, characterize, and summarize available literature
2. To identify gaps in the current research
3. To highlight important areas for future inquiry

Methods

Protocol: recommendations for scoping reviews from JBI (Peters et al., 2020) used to conceptualize the goals/methodology of review

Search strategy: 5 major databases (Medline, PsycINFO, ERIC, Scopus, and CINAHL); customized Google searches for grey literature; forwards and backwards snowballing

Search terms: *smartphone, mobile device, child, youth, adolescent, anxiety, stress, worry* (and related terms)

Inclusion criteria: peer-reviewed, English language, 2010 or later, including youth participants aged 0-25 that explore the relationship between content, context, and function of smartphone use and stress, worry, and/or anxiety

Data extraction: data charted using JBI template and iteratively modified to fit needs of this review following pilot testing

Analysis and results: tabular synthesis with descriptive analysis; in accordance with PRISMA-ScR guidelines (Tricco et al., 2018)

Screening Protocol

Records identified through database searching (5 databases searched) (n = 4774)

Additional records identified through other sources (forwards and backwards snowballing, customized Google searches, targeted websites) (n = 45)

Records after duplicates removed (n = 2483)

Records screened by title and abstract (n = 2483)

Records excluded due to irrelevance (n = 2262)

Full-text articles assessed for eligibility (n = TBD)

Full-text articles excluded, with reasons (n = TBD)

Common reasons for study exclusion thus far include:
- Inclusion of participants aged >25
- Lack of empirical data (e.g., review articles)
- Investigations limited to frequency and duration of smartphone use
- Anxiety not examined as variable of interest

Studies retained for more detailed evaluation (n = TBD)

Identification | Screening | Eligibility | Included
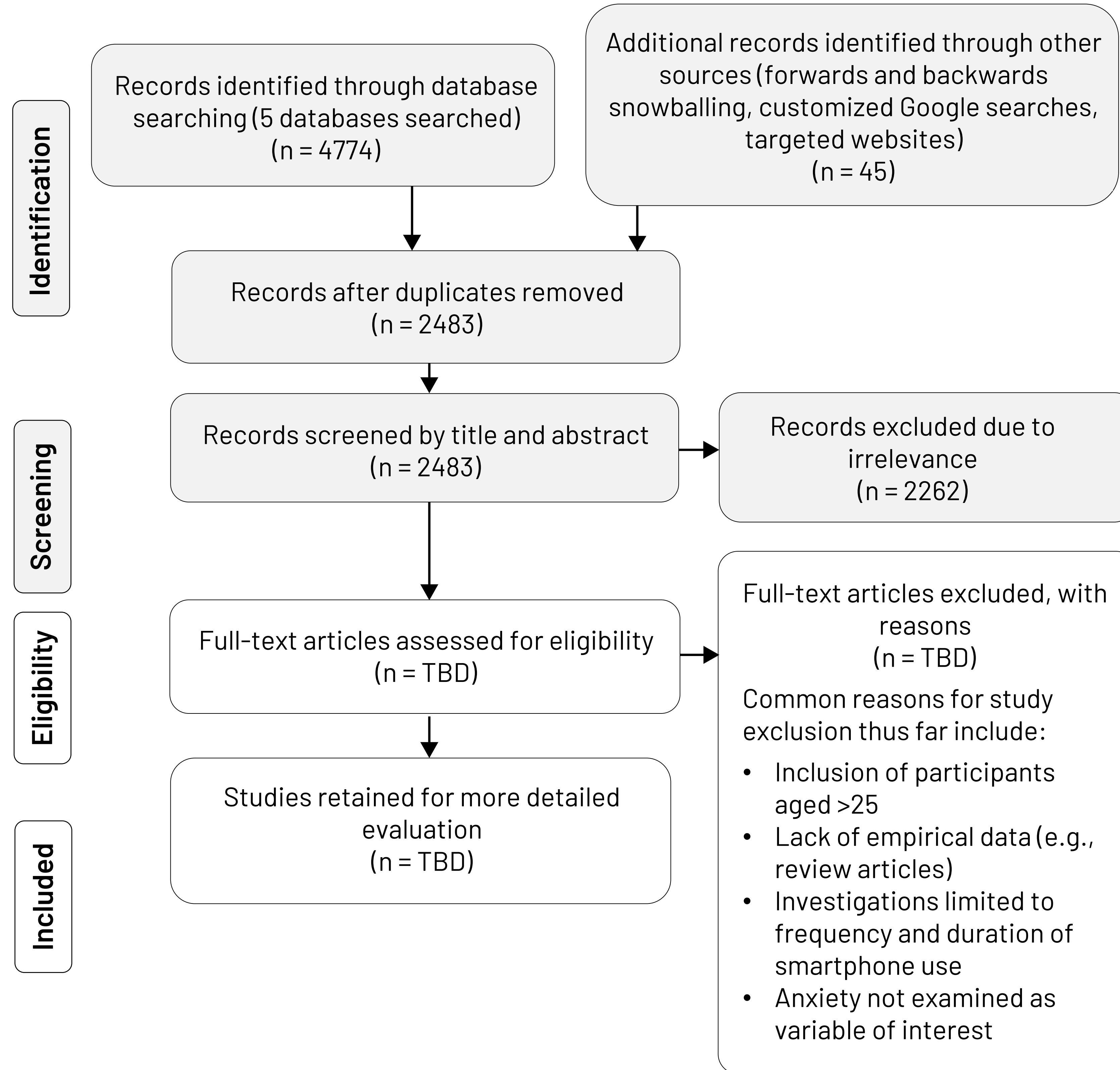
Figure 1. PRISMA Flow Diagram of my scoping review study selection protocol. Grey boxes represent steps completed, while white boxes represent steps in progress.

Current Stage and Emerging Findings

- Articles imported into Covidence database for screening
- Title/abstract screening complete; currently reviewing full text of articles to assess eligibility

- Avoidance commonly identified as a function of smartphone use
- Social needs and pressures as important context for use (e.g., "FOMO")

- Little research conducted with teen vs. emerging or young adult populations; absence of youth voices
- Lack of attention to potential adaptive motivations or uses
- Primarily disorder- and symptom-based approaches → little integration of well-established knowledge re: the underlying processes and mechanisms of anxiety

Next Steps

Complete full-text screening of articles
- Determine relevant studies to be included in final review

Chart the data
- Extraction of detailed data from relevant articles using JBI template; template to be iteratively modified to fit needs of this review following pilot testing

Collate, summarize, and report results
- Plan to conduct tabular synthesis with descriptive analysis; in accordance with PRISMA-ScR guidelines (Tricco et al., 2018)
- Analysis approach may be further refined as awareness and consideration of contents of all included sources increases

Implications of Findings

Strong theory is needed to generate meaningful findings, and descriptive information is an important precursor
- Major theoretical gaps in literature examining the relationships between smartphone use and mental health; descriptive information important to ensuring we are asking the right questions so that we can generate helpful answers (Büchi, 2021; Smaldino, 2019)
- Review findings will provide important foundation for next steps

Pressing need for clear and specific guidelines that can support children, youth, and families in navigating technology in adaptive ways
- Potential for findings to generate meaningful clinical information, by improving understanding of ways in which anxiety manifests in the context of technology use

Acknowledgements

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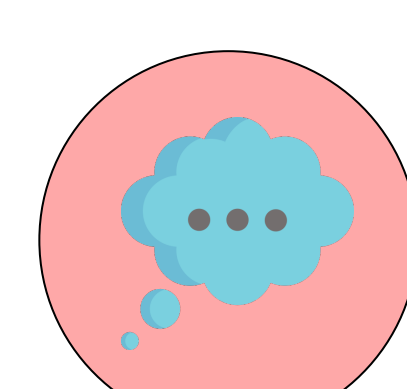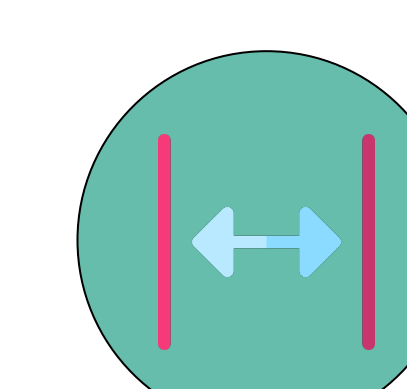
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