

Digital exclusion among Individuals with severe mental illness: a scoping review protocol

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Study protocol

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Abstract

Background

Digital technologies increasingly mediate access to essential services and social participation. Individuals with severe mental illness (SMI) may experience digital exclusion arising from interactions between clinical, socioeconomic, service-level, and structural conditions. However, few studies have comprehensively characterized digital exclusion among individuals with SMI across the health and non-health domains. This review aims to map how digital exclusion among individuals with SMI has been defined, conceptualized, measured, experienced, and addressed, and to identify its reported manifestations, associated factors, and consequences.

Methods

This review will follow Arksey and O'Malley's framework and the Joanna Briggs Institute methodology for scoping reviews and will be conducted based on the PRISMA-ScR framework. A comprehensive search strategy will be employed to explore multiple databases, including PubMed, MEDLINE, Embase, PsycARTICLES, CINAHL Complete, Scopus, and Web of Science. This scoping review will include published and unpublished literature as well as gray literature. This review will consider quantitative, qualitative, and mixed methodologies, institutional reports, and eligible policy or guidance documents concerning individuals aged ≥ 18 years with SMI. Two reviewers will independently screen and extract the data. The findings will be presented using tables, figures, evidence maps, and narrative summaries.

Discussion

This review will clarify how digital exclusion is understood and manifested among individuals with SMI and identify evidence gaps across health and non-health domains. The findings may inform future studies, service design, and digital inclusion strategies among this population.

Review registration

Open Science Framework: <https://osf.io/bv5dt>

1. Background

Digital technologies have become essential for accessing information, health care, and essential public and social services [1, 2]. Health systems use digital channels for appointment management, clinical communication, health information, and remote care even if use them for social participation and employment and to deliver welfare, educational, and financial services [1–3]. These developments can increase convenience and extend services' reach; however, their benefits depend on reliable connectivity,

suitable devices, affordability, and the ability to engage with digital systems [2, 3]. Individuals who cannot participate effectively may encounter additional barriers to essential resources, which can reproduce or intensify existing socioeconomic and health inequalities [2, 3]. These restrictions and disadvantages in digital participation are commonly discussed under the broad concept of digital exclusion [4–6].

However, a consistently accepted definition of digital exclusion is lacking [4–6]. This concept has been conceptualized and operationalized differently across populations and settings. One general-population study operationalized digital exclusion as a lack of digital access, use, confidence, or skills [6]. Among older adults, resources, skills, and motivational exclusion have been identified as key attributes [7]. Among individuals with learning disabilities, the inability to use technology has been linked to cost, access, and the support environment [8]. Studies on undocumented migrants have emphasized barriers to digital services and privacy risk [9], whereas studies on mental health service users have emphasized knowledge gaps, personal circumstances, and mental health difficulties [5]. These accounts indicate that digital exclusion cannot be reduced to device ownership or internet connectivity and that its manifestations are population- and context-dependent [4–9].

Within this heterogeneous evidence base, individuals with severe mental illness (SMI) warrant specific attention. SMI is commonly delineated through a combination of diagnosis, illness duration, and functional impairment; however, definitions vary among studies and service systems [10]. It generally includes the schizophrenia spectrum, other psychotic disorders, and bipolar disorders, and may include major depressive disorder with psychotic features [10, 11]. Individuals with SMI may experience psychiatric symptoms, cognitive difficulties, unemployment, financial hardship, and limited social support [11–14]. These conditions can compromise access to devices and connectivity and the ability to consistently, independently, and safely use digital systems [11–14]. Therefore, adults with SMI may have a higher risk of digital exclusion [5, 11–14]. Digital exclusion among this population may affect health care and support as well as access to information, social connection, purchasing, government services, banking, and employment-related activities [12–14].

Previous SMI studies have indicated that access to a digital device or the Internet does not necessarily translate into regular Internet use or skills required for everyday digital activities [13, 14]. In a previous study, most participants with SMI had digital devices and Internet access; however, 61.6% were classified as limited or non-users [13]. Another study found that 42.2% of participants lacked foundational skills, and 46.2% lacked the digital skills required for everyday life [14]. Additionally, low Internet use has been reported in community mental health rehabilitation settings [15]. A previous qualitative study identified financial constraints, unsuitable devices, limited knowledge and confidence, cognitive and psychiatric difficulties, privacy concerns, distrust of technology, and inadequate assistance as interconnected barriers [5, 16]. These findings suggest that digital exclusion can arise from interactions between clinical conditions, material resources, social support, and service design [5, 13, 16].

Previous reviews have addressed selected components of these findings. A meta-analysis examined mobile phone ownership and attitudes toward mobile health among individuals with psychosis, whereas a more recent global meta-analysis examined smartphone ownership and Internet use across a broad psychiatric population [17, 18]. A healthcare scoping review examined digital exclusion across diverse populations; however, it did not separately synthesize SMI-specific evidence or extend its primary scope to non-health domains [19]. Other reviews have examined digital inclusion initiatives in mental health services or engagement with specific digital mental health interventions [12, 20]. A recent commentary discussed the digital divide among individuals with SMI; nonetheless, no systematic evidence identification or mapping methods were employed [21]. Therefore, no previous review has synthesized how digital exclusion among individuals with SMI has been defined, measured, manifested, and experienced; which conditions shape it; or what consequences and inclusion strategies have been reported across multiple life domains [12, 18–21].

The conceptual diversity of digital exclusion and the methodological heterogeneity of available evidence support this scoping review [22, 23]. A scoping review can clarify how the concept has been applied, map evidence from diverse study designs and sources, and identify concentrations and gaps in knowledge without presupposing a single definition or analytical framework [22, 23]. Thus, this review aims to map the evidence concerning digital exclusion among individuals with SMI. Moreover, it will examine author-reported terminology, definitions, conceptual frameworks, and measures; reported manifestations and lived experiences; associated individual, clinical, socioeconomic, service-level, and structural conditions; health and socioeconomic consequences; and digital inclusion strategies across multiple life domains.

2. Methods

The proposed scoping review will follow Arksey and O'Malley's framework [24]: (1) identifying the research question; (2) identifying relevant studies; (3) selecting studies; (4) charting the data; and (5) collating, summarizing, and reporting the results.

Additionally, the review protocol is reported in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols 2015 statement (Supplementary file 1). The completed scoping review will follow the Joanna Briggs Institute (JBI) methodology for scoping reviews [22, 25] and be reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) [26]. The protocol was prospectively registered with the Open Science Framework (<https://osf.io/bv5dt>).

2.1 Stage 1. Identifying the research question

2.1.1 Research questions

The primary research question is as follows:

What evidence has been reported concerning digital exclusion among individuals with SMI?

The specific research questions are as follows:

1. How has digital exclusion been defined, conceptualized, and measured in previous literature concerning individuals with SMI?
2. Which manifestations, indicators, estimates, and patterns of digital exclusion have been reported among individuals with SMI?
3. How do individuals with SMI experience digital exclusion and digital participation?
4. Which individual, clinical, socioeconomic, service-level, and structural factors are associated with digital exclusion?
5. What health, social, and economic consequences and digital inclusion strategies have been reported in relation to digital exclusion?

Detailed eligibility criteria were established based on these research questions. The eligibility criteria followed the population–concept–context (PCC) framework, recommended by the JBI [22].

2.1.2 Eligibility criteria

2.1.2.1 Population

This review will include studies of adults aged ≥ 18 years with SMI. Studies on individuals with schizophrenia spectrum and other psychotic disorders, and those with schizoaffective disorder, bipolar disorder, or major depressive disorder with psychotic features will be included, even when the term SMI is not used.

Studies with mixed samples of adults and minors or individuals with SMI and other mental disorders will only be included when data on the individuals with SMI can be extracted separately. Studies limited to dementia, other neurocognitive disorders, intellectual disability, neurodevelopmental disorders, or substance use disorders, and mixed-sample studies for which findings for individuals with SMI cannot be separated will be excluded.

2.1.2.2 Concept

This review's central concept is digital exclusion. Regarding eligibility, sources will be considered relevant when they explicitly address digital exclusion or report a restriction, disadvantage, inequality, or exclusionary process that affects meaningful digital participation or its benefits. Sources that use related labels, including digital divide, digital inequality, or digital inclusion, will be eligible only when the reported evidence meets this criterion.

Studies on specific digital mental health interventions, telehealth services, mobile applications, and web-based programs will only be included when they report a restriction, disadvantage, inequality, or exclusionary process relevant to meaningful digital participation or its benefits. Studies that only assess

clinical effectiveness, satisfaction, usability, or acceptability, or provide no evidence relevant to digital exclusion will be excluded.

2.1.2.3 Context

No restrictions will be imposed by country, healthcare system, service setting, or residential setting. Eligible contexts will include hospitals, community mental health services, primary care, welfare, employment, finance, education, housing, public services, social relationships, and everyday digital participation.

2.2 Stage 2. Identifying relevant studies

2.2.1 Development of a search strategy using a 3-step approach

The search strategy will be developed based on the three-step approach recommended by the JBI [27]. First, an exploratory search of PubMed will be conducted to identify seed references that meet the eligibility criteria. Text words in the titles and abstracts of these seed references and the index terms assigned to them will be analyzed. The terms identified through this process, together with the Medical Subject Headings assigned to the seed references in PubMed, will inform the keywords, synonyms, and controlled vocabulary used in the full search strategy.

Second, the identified keywords and index terms will be used to develop a comprehensive search strategy. The search will combine two core concept groups: SMI and digital exclusion. Terms within each concept group will be combined with OR, and the two concept groups will be combined with AND. Given that terminology varies across the literature, related labels and operational terms will be retained when term harvesting or iterative testing demonstrates that they improve the retrieval of seed references. These terms include digital divide, digital inequality, digital inclusion, digital access, digital literacy, digital skills, digital competence, digital confidence, digital engagement, and Internet use. Notably, the use of these terms for information retrieval will not imply that they are conceptually equivalent. The search strategy will be tested to confirm whether it retrieves seed references and, subsequently, adapted to the syntax, field codes, truncation rules, and controlled vocabulary of each information source. The PubMed search strategy will be finalized after iterative testing, and the proposed strategy is provided in Supplementary file 2.

Once the search strategy is developed in PubMed, it will be translated for MEDLINE, Embase, PsycARTICLES, CINAHL Complete, Scopus, and Web of Science. All databases will be searched from their inception to the date of the final search. No publication date or language filters will be applied during the search. However, only sources published in English will be used during full-text screening.

Third, supplementary searches will include gray literature, citations, and manual searches. These searches will be conducted using platforms such as Google Scholar, and the first 100 results, ranked by

relevance, will be screened. The search terms, search dates, total number of results returned, and the number of results screened will be documented.

2.2.2 Types of sources

This scoping review will include quantitative, qualitative, and mixed-methods studies; intervention studies; and service or program evaluations. Additionally, it will include conceptual studies that explicitly define or present a framework for digital exclusion and theses and institutional reports that provide original or systematically collected data on individuals with SMI. Policy and guidance documents will be eligible if they explicitly present SMI-specific definitions, measures, or digital inclusion strategies. Systematic and scoping reviews will not be included in the final evidence synthesis to avoid duplicate extractions; however, their reference lists will be searched and included. Research protocols, conference abstracts, editorials, and commentaries will be excluded.

2.3 Stage 3. Selecting studies

All retrieved records will be imported into EndNote and Excel for deduplication and uploaded to Rayyan. Before formal screening, two reviewers will independently pilot the eligibility criteria for the titles and abstracts of a randomly selected sample of records. If any disagreements arise, the review team will discuss them and clarify the eligibility criteria and screening guidelines. Pilot screening will be repeated until a consensus is reached.

Subsequently, two reviewers will independently assess all selected titles and abstracts. The full texts of potentially eligible records will be retrieved and assessed independently using the eligibility criteria. Disagreements at each stage will be resolved through discussion, and a third reviewer will be consulted when a consensus cannot be reached. In the completed review, the search and selection process will be presented in a PRISMA-ScR flow diagram [26].

2.4 Stage 4. Charting the data

To chart the data, the authors will develop a standardized data extraction form based on the review questions and PCC criteria [22, 25] (Supplementary file 3). The draft form will capture the (1) bibliographic and source characteristics, (2) participant characteristics, (3) concept-related information, and (4) findings relevant to each research question. The author-reported terminology, definitions, conceptual frameworks, and measures will be charted as presented in the sources. Items not applicable to a particular source type will be recorded as not applicable.

To ensure effective data charting, two reviewers will pilot the form on a subset of the included sources to assess the items' clarity and applicability. Recognizing a scoping review's iterative nature, the form may be refined through consensus when additional relevant items are identified. The completed review will report any changes to the form and rationale.

After developing the extraction form, two reviewers will independently chart the data from the included sources and compare their entries. Disagreements will be resolved through discussion and re-

examination of the source, with a third reviewer participating when necessary. The authors can be contacted if the reported information is insufficient or unclear. A formal risk-of-bias assessment will not be performed.

2.5 Stage 5. Collating, summarizing, and reporting the results

The findings will be synthesized based on the research questions and PCC framework [22, 25]. Descriptive numerical summaries, including frequencies and percentages, where appropriate, will describe the included sources' characteristics and distribution. Quantitative estimates will be reported as presented by the source authors and will not be statistically pooled.

The extracted findings will be descriptively mapped according to the research questions, including terminology, definitions, conceptual frameworks, measures, manifestations, lived experiences, associated factors, consequences, and digital inclusion strategies. The author-reported terminology and conceptual frameworks will be retained. The results will be reported using tables, figures, and narrative summaries, with attention paid to areas in which evidence is concentrated, inconsistent, or absent.

3. Discussion

The value of this review lies not only in cataloging evidence on digital exclusion among individuals with SMI but also in examining how consistently the concept has been defined and operationalized. Comparing author-reported terminology, definitions, conceptual frameworks, and measures may reveal whether the same term has been used to describe different phenomena, or whether different terms have been used to describe similar phenomena. This comparison may clarify how differences across studies reflect variations in populations and contexts, or in conceptualization and operationalization. Furthermore, it may identify aspects of digital exclusion that existing measures have not adequately captured [4–9].

Consideration of health and non-health domains, along with associated factors at multiple levels, may help avoid reducing digital exclusion due to individual deficits in access or skills. Joint mapping of manifestations, lived experiences, associated factors, consequences, and digital inclusion strategies may clarify how individual and clinical conditions have been reported in relation to material resources, social support, service design, and structural environments. The distribution of evidence may identify priority populations and life domains for future studies. It may also inform the development and evaluation of services and digital inclusion strategies that respond to the needs of individuals with SMI. However, the mapping of reported strategies and outcomes should not be interpreted as evidence of the effectiveness of or support for any specific strategy.

The inclusion of diverse study designs, source types, and life domains will allow a broad coverage of available evidence; however, heterogeneity in concepts and measurement methods may limit direct comparisons across sources [22, 25]. Restricting full-text eligibility to English-language sources and only

screening a relevance-ranked subset of gray literature may result in missing eligible evidence. Given that the review will not conduct a risk-of-bias assessment or statistical pooling, it will not support conclusions regarding causal relationships, pooled estimates, the certainty of evidence, or the relative effectiveness of digital inclusion strategies. Therefore, the findings should be interpreted as a map of the scope, characteristics, and gaps in the evidence rather than as definitive clinical or policy recommendations.

Abbreviations

JB

Joanna Briggs Institute

PCC

population–concept–context

PRISMA-ScR

Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews

SMI

severe mental illness

Declarations

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Not applicable

Consent for publication:

Not applicable

Competing interests:

The authors declare that they have no competing interests.

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Author Contribution

SYL developed the study concept, designed the protocol, conducted the methodological planning, and drafted the manuscript. MJ designed the protocol and revised the original draft. KSH contributed to supervision and revised the original draft. All authors reviewed and approved the final manuscript.

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Not applicable

Availability of data and materials:

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

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Supplementary Files

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