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Review Article

Effectiveness of Community-Based Outreach Interventions for Individuals Living with Mental Ill-Health in Australia: A Systematic Review

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Objective. Mental ill-health is a common occurrence globally and represents a significant burden of disease. In Australia, the development and improvement of programs that connect individuals earlier in their mental ill-health journey is a national health priority. However, there are current informational gaps on community-based initiatives and their associated mental health outcomes. This review aimed to systematically identify, assess, and analyse studies reporting on community-based outreach interventions for individuals experiencing mental ill-health. *Method*. A systematic review of the literature was conducted across 6 electronic databases and Google Scholar on 01 November 2021 and 12 June 2022. The National Health and Medical Research Council Evidence Hierarchy was used to assess study quality, and the PAGER framework was used to synthesise and analyse the results of included studies. *Results*. Eighty-three studies met the inclusion criteria; 51% ($n = 42$ studies) incorporated digital technology, and 49% ($n = 41$ studies) involved nonclinical light-touch interventions. Individuals with severe mental ill-health were likely to benefit from targeted interventions, and individuals with mild to moderate symptoms of mental ill-health were likely to benefit from interventions involving high levels of engagement from participants. *Conclusion*. Results from this review provide an understanding of patterns related to the effectiveness of community-based outreach interventions. Knowledge from this review will inform the implementation of targeted strategies to enhance the proactive provision of mental health services in the community. Standardised outcome measures are needed to strengthen the evidence base for community-based outreach interventions, by enabling researchers and service providers to explore which type of intervention and with what intensity is best suited for participants with varying levels of mental ill-health.

1. Introduction

Mental ill-health is a common occurrence globally [1, 2] and represents a significant burden of disease [3, 4]. Whereas mental illness often requires a formal diagnosis, the term *mental ill-health* encompasses acute experiences of poor mental health, and the mental distress experienced prior to a formal diagnosis [5]. In Australia, more than half the adult population will experience mental ill-health in their lifetime, yet the current mental healthcare system is not designed to adequately support the diverse needs of individuals at risk of or living with mental illness [6, 7]. People who are more likely to report unmet mental healthcare needs include people living in a low-income household, people with high out-of-pocket healthcare expenditure, men, people living with a chronic condition, people with poor self-rated health and rural residents [8, 9].

The consequences of mental ill-health are experienced by individuals living with mental ill-health and their carers, families, friends, and employers, as well as communities, healthcare systems, and societies more broadly [10]. The nature of these consequences can include direct expenditure on mental health care and other support services, time and effort caring and supporting individuals, limited career opportunities, reduced living standards and social and emotional costs [10]. Hence, the development and

improvement of programs that connect individuals early in their mental ill-health journey (e.g., prior to a formal diagnosis of mental illness) or living with mental illness is a national health priority [6].

The central inclusion of community engagement, in shaping health services, has been highlighted as a critical strategy to ensure the responsiveness of services to the needs of service users, as well as trust in and ownership of services by its users [11]. Community-based mental healthcare approaches have been increasingly used to promote help-seeking behaviour and utilisation of mental health services [12]. The advantages of community-based approaches include that they often occur in the context of one's life day-to-day and, simultaneously, can respond to broader issues including the social determinants of health such as poverty, housing, education, and employment [13–15]. Such approaches are often person-centred and recovery-oriented, promote social connectivity and community participation, reduce isolation and stigma, connect people to care earlier in their mental ill-health journey, and, ultimately, alleviate the burden of mental illness on individuals and communities at large.

The Australian mental health system has shifted towards person-centred and community-based mental healthcare delivery in recent years. Prevention and early intervention, along with mental health consumer and carer involvement, are prioritised in health policy planning, with the goal of improving the quality of life for individuals living with mental ill-health [10]. Person-centred care espouses community-based initiatives by providing prevention and early intervention efforts for individuals experiencing mental ill-health. Consequently, these initiatives account for an important and growing part of the Australian mental health system. Two available reviews of community mental health programs for Australian youth [16] and Australian adults with a serious mental illness [17] found most therapeutic programs were effective in decreasing the severity and presence of mental health symptoms. However, literature on the effectiveness community-based prevention and early intervention in Australia has not yet been synthesised. In order to optimise and expand the delivery of community-based mental healthcare to Australians at risk of, or living with mental ill-health, current evidence for the effectiveness of community-based outreach interventions in this population requires investigation.

The aim of this systematic review was to examine the extent of evidence relating to community-based outreach interventions in Australia. For the purposes of this review, *community-based outreach* refers to a targeted community-based intervention, or service provision, designed to support individuals at risk of or living with mental ill-health.

2. Methods

A systematic search of the literature was conducted to identify relevant studies concerning community-based outreach interventions for individuals with mental ill-health in Australia. The protocol for the systematic review was registered with the International Prospective Register of Systematic Reviews (PROSPERO ID: CRD42021288616) and the reporting of results followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-SR) 2020 [18]. A university health librarian was consulted throughout the development of the search strategy and verified the search strategy prior to the final database searches being undertaken. The search was conducted on 01 November 2021 and updated on 12 June 2022 to capture studies published between January 2017 and June 2022. The following electronic databases were searched: Ovid (Embase classic + Embase), Web of Science (MEDLINE, Social Sciences Citation Index), EBSCO Host (CINAHL Plus), ProQuest (PsycINFO, Social Science Database, Sociology Collection), Informit (Aboriginal and Torres Strait Islander Health Bibliography), and Elsevier (Scopus). The first 100 results in Google Scholar were also included in the search. Searches were restricted to articles published within the last five years (01 January 2017 and 12 June 2022) to ensure a timely completion of the review. The search terms comprised the following central concepts: (i) suicide and mental illness prevention; (ii) intervention and promotion; (iii) evaluation; and (iv) Australia. Searches incorporated the use of Medical Subject Headings (MeSH), Boolean operators (i.e., AND, OR), and proximity searching (Supplementary Materials1: full-search strategy).

2.1. Eligibility Criteria. Peer-reviewed studies, published in English and conducted in Australia, were included for local context evidence as to why an intervention was implemented successfully and how the intervention and contextual characteristics impact its effectiveness. No restriction was applied to the study design. The eligibility criteria were framed using the following Population, Intervention, Context, and Outcome parameters:

2.1.1. Population. Studies with participants who were vulnerable to or at risk of mental ill-health or had mild, moderate, or severe symptoms of mental illness were included. Studies reporting on healthy populations were excluded. Interventions that involved family members (e.g., parents or carers) of an individual with mental illness as target participants to prevent or alleviate the mental ill-health of the individual being cared for were excluded.

2.1.2. Intervention. Studies reporting on community-based outreach programs were included, such as nation-wide programs and nonclinical interventions. Studies where participants were referred to the program were excluded (e.g., follow-up or transitional care for patients after discharge).

2.1.3. Context. Studies evaluating interventions conducted in community settings (including digital health) and in open institutions (e.g., university, school, prison or workplace) were included. Studies conducted in clinical settings (e.g., hospital, local health district or aged care facility) were excluded. Our definition of Community comes from the

National Mental Health Commission's Vision 2030 [19]: "A community could be the place a person lives or works; it could be where a person interacts in their daily life, for example, school or sports; and it could be the group of individuals with which a person shares a common culture, identity, values, beliefs, behaviours or experiences."

2.1.4. Outcome. Studies reporting qualitative and/or quantitative outcome(s) related to the effectiveness of an intervention on mental ill-health or mental illness were included. Studies reporting on outcomes from the perspective of carers were included. Other studies reporting only outcomes related to help-seeking behaviour, awareness-raising, general mental well-being, social skills, stigma and quality of life, as well as outcomes associated with the impact of interventions on conditions other than mental ill-health or mental illness (e.g., exam stress or music performance anxiety) were excluded.

2.2. Screening. The title and abstract of all results were imported into the Covidence platform [20], and duplicates were automatically removed. The title and abstract screening process was independently conducted by two reviewers (YH and AC). Studies that met the eligibility criteria or could not be explicitly excluded underwent full-text review. The full-text articles of the included publications were independently screened by two reviewers (YH and AC), and the reasons for exclusion were recorded. Discrepancies during the title and abstract screening and full-text review were first discussed and resolved by the two reviewers (YH and AC), and the remaining conflicts were adjudicated by a third reviewer (MM). The researchers were blinded to each other's decisions in both title and abstract screening and full-text review to increase the rigour of the process. A PRISMA flow diagram illustrating the search results is provided in Figure 1 and a PRISMA checklist [18], in Supplementary Materials 2.

2.3. Data Analysis. Data extraction was performed by two independent reviewers (AC and YH) for the first 67 studies (~80%) using a standardised form in Covidence. Discrepancies were resolved through discussion. The remaining 16 were performed by one independent reviewer (YH) and reviewed by the second (AC). The following data were extracted from each of the included studies: (i) study details (author(s), title, publication year, and state/territory in Australia); (ii) study characteristics (aim(s), study design, time interval, funding sources, and potential conflicts of interest); (iii) participants (description, inclusion criteria, exclusion criteria, method of recruitment, type of mental ill-health, and sample size); (iv) intervention (description, type of intervention, activities or components, comparator(s), outcome(s), outcome measures, and follow-up time interval); and (v) results (challenges or barriers identified, and opportunities identified).

Study quality was assessed by two independent reviewers (AC and YH) for the first 67 studies (~80%) using the National Health and Medical Research Council Evidence Hierarchy [21]. The remaining 16 studies were assessed by one independent reviewer (YH) and reviewed by the second (AC). Studies were assessed on the following dimensions: (i) strength of evidence (level of evidence, quality of evidence, risk of bias, and statistical precision relating to the outcome(s) assessing mental ill-health); (ii) size of effect relating to the outcome(s) assessing mental ill-health; and (iii) relevance of evidence in the context of this review's research question. Levels of evidence are as follows: level I evidence is a systematic review of level II studies; level II is randomised controlled trials (RCT); level III-1 is a pseudorandomised controlled trial; level III-2 is a comparative study with concurrent controls; level III-3 is a comparative study without concurrent controls; and level IV is a case series with either post-test or pre-test/post-test outcomes. Studies that were purely qualitative studies received a level of evidence of IV. "Relevance of evidence" related to the appropriateness of the outcome measures assessing mental ill-health and relevance of the study to this review's research question. For example, when determining the appropriateness of the outcome measures, reviewers considered whether the outcome measure had been validated for the study population. Any conflicts with respect to quality assessment were resolved through discussion until a consensus was reached.

A summary of study characteristics is presented in tabular form in Supplementary Material 3, and the quality assessment of studies is presented in tabular form in Supplementary Material 4. The PAGER (Patterns, Advances, Gaps, Evidence for practice, and Research recommendations) framework was used to analyse the findings [22]. An inductive thematic analysis methodology was used to tabulate themes in the form of the patterning chart [23]. After becoming familiar with the data through the data extraction process, two independent researchers (AC and YH) mapped themes to the PAGER framework and then met to explore themes. The finalised PAGER framework is presented in Supplementary Material 5 and was used to synthesise the evidence identified across interventions. A meta-analysis was not deemed appropriate due to the diversity of interventions and differences in study designs and outcome measures.

3. Results

Of the nearly 7,000 studies screened, 83 studies met the inclusion criteria for the purposes of the systematic review. Key characteristics of the included studies are presented in Table 1, and a complete list of study characteristics extracted from the included studies is presented in Supplementary Material 3.

Most studies ($n = 75$; 90%) were published after 2018. A majority of included studies ($n = 79$; 95%) measured quantitative outcomes; only four studies measured only qualitative outcomes. The most common study designs were

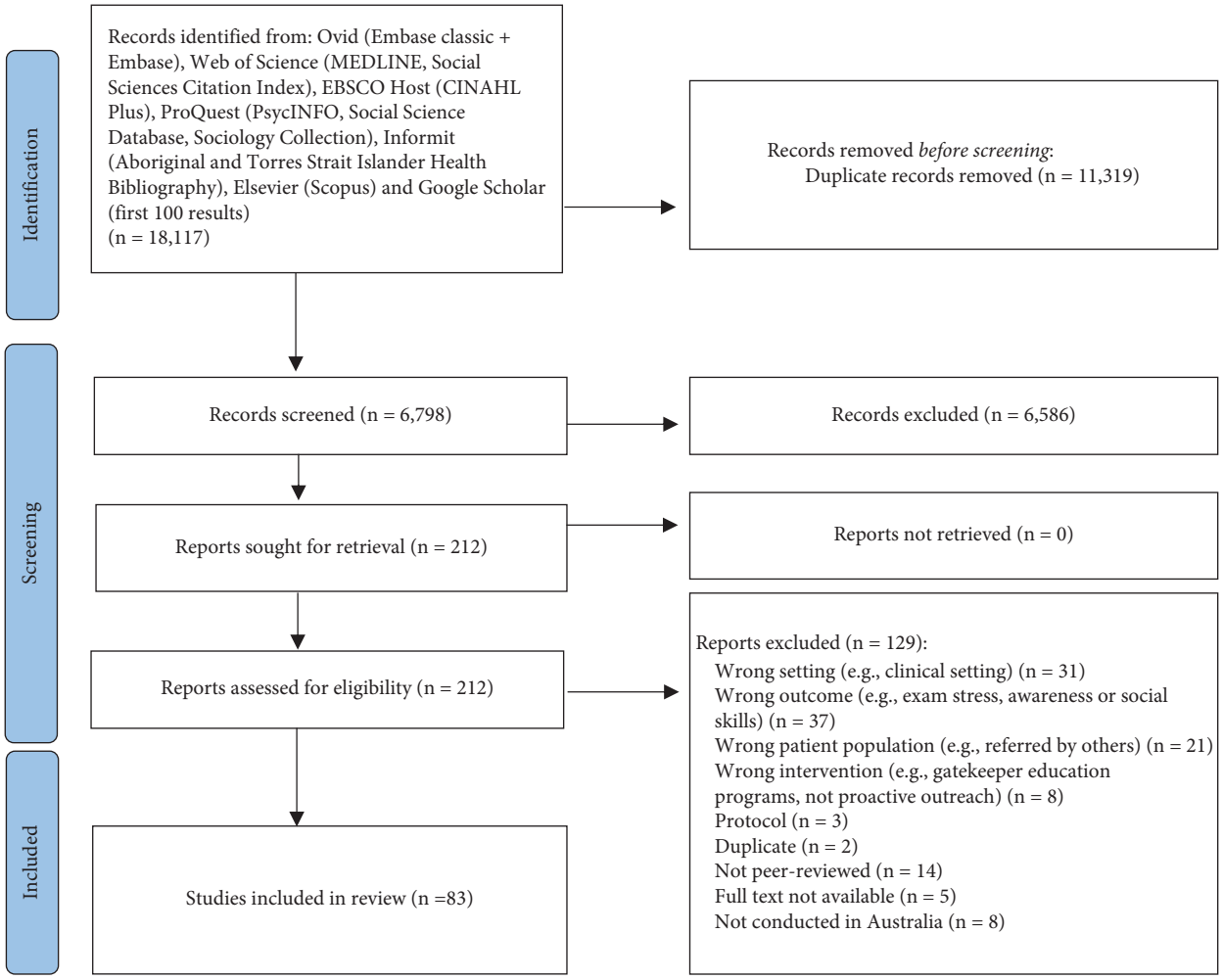

Figure 1: PRISMA 2020 flow diagram.

RCTs ($n = 45$; 54%) and cohort studies ($n = 21$; 25%). Study populations included older adults (aged >50 years) ($n = 6$; 7%), adults (aged >18 years) ($n = 51$; 61%), adolescents and children (aged <18 years) ($n = 23$; 28%), or both adults and children ($n = 3$; 4%).

Intervention types were categorised as either digital health ($n = 42$; 51%)–an intervention that incorporates digital technology (e.g., mobile phone application or website) in its delivery–or light-touch interventions ($n = 41$; 49%). Light-touch interventions are defined as nonclinical community interventions that utilise health promotion strategies in the prevention or early intervention, as opposed to clinical interventions or treatments for illness. This included implicit and explicit references to mental ill-health prevention, as well as more broad references to managing distress or enhancing well-being. In this review, light-touch interventions comprised mindfulness-based programs, resilience-strengthening programs, play therapy, art programs, sports-based programs, and other preventive therapies (e.g., lifestyle interventions). Among studies evaluating light-touch interventions ($n = 41$; 49%), less than half ($n = 16$; 39%) occurred in primary or secondary schools. Other settings included universities ($n = 4$; 10%), non-English-speaking community organisations ($n = 4$; 10%), prisons ($n = 3$; 7%), and employment contexts ($n = 4$; 10%). The types of mental ill-health identified and measured in the included interventions were one or more of the following: internalising and externalising behaviour, anxiety, depression, postpartum depression, psychological distress, suicidal behaviour, loneliness, and burnout. The most common targeted mental illness(es) among the interventions were a combination of depression and anxiety ($n = 34$) or just depression ($n = 16$).

Most studies were level III evidence ($n = 47$; 57%), and the remaining studies were level II ($n = 31$; 37%) or level IV ($n = 5$; 6%), whereby higher-level studies in the hierarchy have study designs that are minimally impacted by bias. The full quality assessments are reported in Supplementary Material 4. A majority of studies ($n = 69$; 83%) were of low quality with a high risk of bias. This was mostly due to the small sample size, high attrition, low adherence to the intervention, and/or a lack of a control group. Approximately half of the studies ($n = 42$; 51%) had high statistical precision or statistically significant improvements with respect to relevant mental health outcomes. The other half ($n = 37$; 44%) of the studies either reported low statistical precision

Table 1: Key characteristics of studies reporting on community-based outreach interventions for individuals with mental ill-health in Australia.

First author (publication year)	Study design	Study population	Number of participants	Targeted mental illness
Digital health				
Baldwin (2020) [24]	RCT	Adults with type 2 diabetes	780	Depression
Batterham (2018) [25]	RCT	Adults	194	Depression, anxiety, suicidal ideation
Batterham (2017) [26]	RCT	Adults (aged 18–64 years)	1,149	Depression, anxiety
Batterham (2021) [27]	RCT	Adults with mild to moderate symptoms of psychological distress	1,986	Depression, anxiety
Batterham (2021) [28]	RCT	Adults	849	Depression, anxiety
Blignault (2022) [29]	Cohort	Arabic- and Bangla-speaking adults	397	Depression, anxiety
Bryant (2022) [30]	RCT	Adults	240	Psychological distress
Calear (2016) [31]	RCT	School-aged students	225	Anxiety
Christensen (2016) [32]	RCT	Internet users (aged 18–64 years) with insomnia and depression symptoms	1,149	Depression
Collins (2020) [33]	Cohort	Employed adults	81	Depression
Crawford (2019) [34]	RCT	Adults with type 1 or type 2 diabetes	72	Depression
Deady (2016) [35]	RCT	Young individuals	104	Depression
Deady (2018) [36]	RCT	Adult workers in male-dominated industries	84	Depression
Deady (2020) [37]	RCT	Adult workers in male-dominated industries	2,268	Depression
Drew (2021) [38]	RCT	Men with low mood	125	Depression
Farrer (2019) [39]	RCT	University students	200	Depression, anxiety
Fassnacht (2022) [40]	RCT	University students	126	Depression, anxiety
Giallo (2021) [41]	Mixed methods	Parents and caregivers	62	Maternal stress and anxiety
Kahl (2020) [42]	Cohort	Website users	1,982	Depression, anxiety
Leggett (2018) [43]	Cohort	Older adults (aged 65 years or older)	11	Depression
Li (2022a) [44]	Cross-sectional	General public	5,058	Psychological distress
Li (2022b) [45]	Cross-sectional	Adults	1,343	Obsessive-compulsive disorder
Marshall (2021) [46]	Single-case	Adults	29	Depression, anxiety
McKeon (2021) [47]	Cohort	Older adults (aged 60 years or older)	10	Psychological distress
Murawski (2019) [48]	RCT	Adults	160	Depression, anxiety
O'Dea (2019) [49]	Cohort	Secondary school students	59	Depression, anxiety
O'Dea (2020) [50]	RCT	Adolescents (aged 12–16 years)	193	Depression, anxiety, psychological distress
O'Dea (2021a) [51]	RCT	Secondary school students	1,841	Depression, anxiety, psychological distress
O'Dea (2021b) [52]	Qualitative	Counsellors and parents of secondary school students	41	Depression, anxiety
O'Moore (2018) [53]	RCT	Older adults (aged 50 years and older)	69	Depression
Parker (2022) [54]	Mixed methods	University staff	106	Depression, anxiety
Sanatkar (2019) [55]	Clustering analysis	App users	43,631	Depression, anxiety
Sharrock (2021) [56]	Cross-sectional	Adults	904	Depression, anxiety
Tighe (2020) [57]	Qualitative	Aboriginal and Torres Strait Islander Youth	13	Depression, anxiety
Torok (2022) [58]	RCT	Young adults (aged 18–25 years)	445	Suicidal ideation
Van Spijker (2018) [59]	RCT	Adults (aged 18–65 years)	418	Suicidal thinking
Viskovich (2020) [60]	RCT	University students	1,162	Depression, anxiety, stress
Visvalingam (2022) [61]	Mixed methods	University students	70	Depression, anxiety

Table 1: Continued.

First author (publication year)	Study design	Study population	Number of participants	Targeted mental illness
Yap (2018) [62]	RCT	Students (aged 12–15 years) and their parents	359 parent-adolescent dyads	Depression, anxiety
Young (2021) [63]	Cohort	Adults with current depressive symptoms	123	Depression
Light-touch				
Almeida (2021) [64]	RCT	Older adults (aged 65 years or older)	307	Depression
Bartels (2019) [65]	Cohort	Prisoners	9	Depression, anxiety
Bayer (2022) [66]	RCT	Parents of young school-aged children	545	Depression, anxiety
Blake (2016) [67]	RCT	High school students (aged 12–17 years)	144	Depression, anxiety
Blignault (2019) [68]	Cohort	Arabic-speaking adults	70	Depression, anxiety
Blignault (2021a) [69]	Cohort	Arabic-speaking adults	27	Depression, anxiety
Blignault (2021b) [70]	Cohort	Arabic- and Bangla-speaking adults	171	Psychological distress, depression, anxiety
Chen (2022) [71]	RCT	Primary school students	316	Depression, anxiety
Crane (2019) [72]	RCT	Officer cadets	226	Depression, anxiety
Crane (2020) [73]	RCT	Older adults (aged over 50 years)	93	Depression, anxiety
D'Cunha (2019) [74]	Exploratory	Older adults living with dementia	28	Depression
Deans (2021) [75]	Cohort	Men who participated in the sons of the west program in 2017	776	Psychological distress
Dove (2017) [76]	Cohort	Grade 5 children	57	Depression, anxiety
Dray (2017) [77]	RCT	Students in secondary schools	3,115	Internalising problems
Dudgeon (2022) [78]	Qualitative	Aboriginal individuals	49	Psychological distress
Eather (2019) [79]	RCT	University students	53	Anxiety
Eather (2020) [80]	RCT	University staff	47	Anxiety
Falon (2021) [81]	RCT	Second-class officer cadets from the royal military college	204	Depression, anxiety
Giallo (2018) [82]	Cohort	Fathers	57	Depression, anxiety
Gold (2017) [83]	RCT	Students	100	Depression
Grummitt (2022) [84]	RCT	High school year 8 students	1,636	Suicidal ideation
Howells (2020) [85]	Nonrandomised experimental	Children	40	Internalising disorder, anxiety
Johnson (2021) [86]	RCT	School-aged student	434	Depression, anxiety
Johnstone (2020) [87]	RCT	Primary school children	295	Depression, anxiety
Law (2021) [88]	Nonrandomised experimental	Pairs of experienced mothers and first-time mothers	47 pairs	Postnatal depression
McKenzie (2021) [89]	Mixed methods	Youth between 14-17 years	9	Depression
Metcalf (2022) [90]	RCT	Australian defence force personnel transitioning from the military	59	Posttraumatic stress disorder
Newton (2020) [91]	RCT	Year 8 students	947	Internalising and externalising problems
Ogloff (2022) [92]	RCT	Prisoners	124	Psychological distress
Rasmussen (2018) [93]	Cohort	Aboriginal prisoners	335	Suicide
Rees (2020) [94]	Cohort	Doctors based in a rural area	13	Burnout, psychological strain
Roberts (2018) [95]	RCT	Grade 6 students	2,288	Depression, anxiety
Ruocco (2018) [96]	Cohort	Primary school children	65	Anxiety, internalising behaviours
Singh (2019) [97]	RCT	Secondary school students	1,826	Depression

Table 1: Continued.

First author (publication year)	Study design	Study population	Number of participants	Targeted mental illness
Slewa-Younan (2020) [98]	Cohort	Arabic-speaking refugees	33	Psychological distress
Snodgrass (2020) [99]	Cohort	Aboriginal and Torres Strait Islander in rural and regional Australia	413	Psychological distress and suicidal ideation
Tracey (2018) [100]	Cohort	Upper primary school-aged children enrolled in a specialist school	9	Depression, anxiety
Vella (2019) [101]	Cohort	Governmental employees	65	Burnout
Wicks (2018) [102]	Cohort	Aboriginal children under the age of 12 years	9	Behavioural problems (e.g., hyperactivity, inattention, prosocial behaviour)
Wilson (2021) [103]	Qualitative	University students	6	Depression, anxiety, psychological distress
Wright (2019) [104]	RCT	Primary school children	89	Depression, anxiety, internalising problems

Note. RCT = randomised controlled trial.

or were qualitative studies ($n = 4$; 5%) and did not include statistical analysis. Most studies ($n = 55$; 66%) reported a small or medium effect size, while the remaining studies reported a large effect size ($n = 15$; 18%) or did not report an effect size ($n = 12$; 14%). Most studies used outcome measures that were "very appropriate" ($n = 49$; 59%) or "somewhat appropriate" ($n = 30$; 36%) with respect to person-centredness. Nearly all studies were either somewhat relevant ($n = 36$; 43%) or very relevant ($n = 46$; 55%) to the research question.

The strengths and weaknesses and target population are further summarised below, and opportunities for improvement are presented in the discussion section.

3.1. Digital Health Interventions

3.1.1. Strengths and Limitations. Digital health interventions ($n = 42$) were reported to have the potential for wide dissemination and universal implementation, with half ($n = 21$; 50%) reporting high acceptability and feasibility. Less than half of the digital health interventions ($n = 19$; 45%) were deemed effective with respect to their improvement of mental health outcomes. *myCompass*, a self-guided digital intervention, identified that different types of users evoked different usage patterns all with equivalent mental health benefits, which may indicate that any engagement with the intervention may observe improvement [55]. Some ($n = 4$; 9%) had the ability to target what the researcher referred to as "hard-to-reach" populations (e.g., older adults, First Nations individuals, and non-English speaking communities). For example, *iBobbly*, a suicide prevention app for First Nations young individuals, showed that increased app use led to improved outcomes, although the effects were not significant [57].

Most digital intervention studies ($n = 24$; 57%) utilised a high-quality study design–RCT. One-third of the identified digital interventions ($n = 13$; 31%) utilised evidence-based interventions such as cognitive-behavioural therapy (CBT) or acceptance commitment therapy (ACT). Digital health interventions were also able to address mental ill-health comorbidities, such as insomnia [26, 32], alcohol abuse [35, 38], and pain management [53]. *Partners in Parenting* (*PiP*) reported their digital intervention to be potentially low in cost [62] although economic evaluations are necessary to corroborate this claim. Digital health interventions were identified as a feasible, accessible, and effective format [29, 30, 41, 46, 47, 54, 56]; for example, during the COVID-19 pandemic when COVID-19-related restrictions were in place across Australia [44, 45]. One study assessing the uptake and effects of an online Obsessive-Compulsive Disorder CBT program reported a 522% increase in course registrations in 2020 compared to 2019 [45].

Reported limitations of digital interventions included high attrition and recruitment difficulties with respect to inadequate sample size and an unrepresentative sample (i.e., mostly female). Low motivation, time constraints, difficulties with internet connectivity, forgetfulness, worry about the privacy of data, using too much phone data, and lack of perceived need were reported as barriers to engaging with digital interventions [49, 52]. In addition to difficulties with attrition and recruitment, many studies had insufficient outcome measures. Some digital interventions ($n = 7$; 17%) reported limitations regarding the use of self-report measures [30, 39, 40, 42, 44, 48, 59]. Measuring adherence also posed a challenge [28], and it was difficult to adjust for the lack of consistency across participants in the intervention content they accessed [39]. Furthermore, long-term outcomes were either absent or studies reported mixed results. This was commonly due to a lack of follow-up, issues with retention and short intervention periods of 4–6 weeks.

3.1.2. Target Population. Digital health interventions appear to best suit those with mild to moderate symptoms (i.e., lower baseline symptom levels) of mental ill-health [59] and those who may not seek treatment or who prefer not to take medication [32]. For example, one study assessing the effectiveness of five evidence-based mental health apps for anxiety and depression found more favourable outcomes were achieved by younger participants, those concurrently undertaking psychotherapy and/or psychotropic medication, those with anxiety and mixed anxiety and depression (rather than stand-alone depression), and those with a shorter history of mental illness [46]. In the case of *HeadGear*, an app that takes the form of a 30-day challenge to reduce depression in the workplace, was found to have the capacity to screen for early symptoms of depression, even in clinically well populations [37].

Importantly, however, those participants with severe baseline levels of mental ill-health were more likely to drop out of digital intervention studies [24, 59, 61] and less likely to benefit from the intervention [26]. This included *Living with Deadly Thoughts*, an online self-help intervention for suicidal thinking [59]; *myCompass,* a web-based program for individuals living with type II diabetes and mental illness [24]; and *SHUTi* (*Sleep Healthy Using the Internet*), an internet-based insomnia treatment to prevent depression [26]. Further studies on *myCompass* and *SHUTi* in the general Australian adult population found those with severe levels of mental illness were less likely to complete their follow-up assessments [32, 55]. The authors of *Living with Deadly Thoughts* consider that severe symptoms may be the reason for this interference with the completion of the program [59] although it was difficult to ascertain whether those who exited the program prior to completion were early mental health goal achievers or those not having needs met [35].

In contrast, other studies reported participants with severe baseline symptoms experiencing higher module completion and greater mental health benefits. This included *Smooth Sailing*, a secondary school-based intervention, which found module completion was higher among participants with more severe symptoms at baseline [49]. Still, a majority of Smooth Sailing participants were minimal users of the online service [49]. *myCompass2*, an app for Australian adults in the community [28], *iBobbly* [57], and *ReachOut*, an unstructured website for young individuals

[42], were found to be effective for participants with more severe levels of mental distress. Another study highlighted the potential benefits of a web-based transdiagnostic informed intervention in a university setting, *You Only Live Once (YOLO)*, for participants across the distress continuum [60]. The *YOLO* trial reported that participants with severe distress levels had similar rates of intervention completion compared with the university population sample [60]. Viskovich and Pakenham [60] conveyed that allowing for a wider audience meant that those experiencing mental ill-health could be identified and provided with targeted services. This finding was countered by another web-based transdiagnostic intervention among Australian adults, *Fit-MindKit*, that found it difficult to capture change across a broad range of the mental health domains and suggested a less ambiguous transdiagnostic intervention approach, potentially focusing only on one type of mental illness [25].

3.2. Light-Touch Interventions

3.2.1. Strengths and Limitations. Light-touch interventions ($n = 41$) have been widely used in institutional settings, such as Australian primary and secondary schools due to their brief, intensive format, and ability to fit within a school's timeframe. There was a similar experience with interventions via organisational health promotion programs which attributed high compliance to the flexibility and accessibility of the program [80, 94, 101]. Other institutional settings where light-touch interventions were feasibly administered to large groups were universities [79, 103], military institutions [72, 81, 90], and prisons [65, 92, 93].

Our analysis of included study outcomes demonstrates that some light-touch interventions were effective in improving psychosocial health [75]; reducing the incidence of suicide and self-harm [84, 93]; reducing symptoms related to depression [89, 92], generalised anxiety [76]; and post-traumatic stress disorder [90]. A tailored 8-week meditation-based program in the public-sector work environment proved to be an effective, efficient, and low-cost inclusion within an organisation's health promotion repertoire to help improve the staff's mental health [101].

In some school-based light-touch interventions, engagement with teachers and parents bolstered the impact of the intervention on children in their school environment [82, 97, 100]. For example, engagement with parents in the secondary school-based intervention, *Resilient Families*, was associated with longitudinal reductions in depressive symptoms [97]. These findings highlight the importance of increasing emphasis on family and community protective factors in adolescent social-emotional development and depression prevention programs [66, 82, 97]. Additional advantages reported for light-touch interventions were being evidence-based (e.g., CBT [67, 96]) and able to be adapted for the target population [64, 68, 70, 78, 98, 102]. For example, a men's health promotion program *Sons of the West* attributed their high participation rates to the broad-ranging, gender-sensitised format [75].

Like digital health interventions, common limitations included retention and insufficient outcome measures. Many studies ($n = 20$; 49%) reported high attrition and/or small sample size, resulting in self-selection bias and a lack of representativeness. One study assessing the effectiveness of a postnatal depression prevention program for new mothers reported recruitment difficulties due to a lack of support among potential participants to participate in the program [88].

Further, the most suitable outcome measures were often difficult to ascertain. Some studies reported needing additional parent-reported and teacher-reported outcomes [71] and others reported difficulties with self-report measures [69, 71, 74, 100]. Reliance on self-report measures and the short length of interventions illuminated a need for better outcome measures and longer-term follow-up. Future studies would benefit from using an RCT design with standardised outcome measures and control groups. This was particularly salient among institution-based (e.g., school and prison) interventions that employed a pseudo-RCT or cluster RCT and reported issues with confounding [76, 84, 91, 93].

3.2.2. Target Population. Some light-touch interventions targeted particular populations, such as a First Nations prisoners art intervention [93], school-based ACT in Outdoors [100], Aussie Optimism Program [95], community-based Working Out Dads [82], and a yoga program in prison [65]. In these programs, participants were more likely to report lower baseline levels of distress, and those with lower baseline levels of distress were also more likely to remain in the trial.

Interventions targeting behaviours such as sleep [67] and emotional regulation [64, 71, 72, 87] or populations such as refugees [68–70] and medical doctors [94] generally reported higher baseline levels of distress among participants. The stigma of mental illness was reported as a barrier to participation in some interventions [93, 94]. Thus, an intervention targeting a comorbidity that commonly accompanies mental illness may be less stigmatising. For example, a disproportionate level of participation in an intervention targeting sleeping disorders by those with higher baseline levels of distress may be attributed to the stigma experienced when seeking help specifically for depression and anxiety [67]. A general sleep program, therefore, could be viewed as more acceptable [67]. For other target populations, high levels of distress reported by participants may be because of an ordinarily high baseline distress score at entry, particularly among those experiencing chronic stressors, for example, long-term unemployment among older adults adjusting to retirement [73], resettlement among refugees [69, 70], and Australian Defence Force personnel transitioning from the military [90]. This is supported further by studies reporting on strength and resilience training for cadets [72] and employee health promotion programs [73], which found long-term health improvements associated with the intervention because it occurred in parallel with a period of significant stress. Additionally, regression

towards the mean could see a decrease in distress among those with a high baseline distress score [69, 70, 100].

4. Discussion

This review identified 83 studies reporting on community-based outreach programs in Australia for individuals with mental ill-health and mental illness. Digital health interventions were reported to have the potential for wide dissemination and universal implementation, with high acceptability and feasibility. Most digital intervention studies utilised a high-quality study design, which were evidence-based and able to address mental ill-health comorbidities. Light-touch interventions have been widely used in schools and other institutional settings due to the flexible and accessible mode of delivery. Some digital interventions ($n = 19/42$; 45%) and some light-touch interventions ($n = 21/41$; 51%) were effective with respect to mental health outcomes, but common limitations across all studies included high attrition, recruitment difficulties, and insufficient outcome measures and follow-up. Both digital and light-touch intervention types were deemed important across the spectrum of mental ill-health and feasible to implement universally. However, due to the limitations in current evidence, it remains unclear whether interventions are universally effective. Participants with higher baseline levels of distress, or more severe symptoms of mental ill-health, were likely to gain greater benefits from targeted interventions and remain engaged in interventions with external engagement from health professionals or community organisation representatives. Individuals with mild to moderate symptoms of mental ill-health are likely to benefit from interventions involving high levels of engagement from participants.

This review highlights that early intervention is often thought of chronologically—approximately 40% of studies (n=33)—identified in this review were implemented in the primary or secondary school or university setting providing early support to young people. A 2019 review identified that although school infrastructures allow for large-scale implementation of interventions, there can be numerous barriers to delivery including policies, school culture and climate and leadership structure [105]. Therefore, developing sustainable interventions in schools that are truly responsive to the needs of students may require years of building academic-community partnerships [105]. While the global prevalence of mental ill-health among young people has increased in recent years [106, 107], the burden of mental illness has disproportionately affected socio-economically disadvantaged, chronically ill and marginalised groups [108]. Predictors of mental ill-health are far more nuanced than age—for instance, sex-specific vulnerabilities [108]—and distress can be experienced throughout the lifespan particularly at times of significant transition. Thus, rather than approaching prevention and early intervention temporally with respect to age (i.e., children in schools or students attending university), the results from this review indicate that targeted programs are also required to reach those who need it most, at a time when they need it most.

Prevention and early intervention programs are potentially ineffective if interventions are not reaching those who need them, when they need them. By incorporating personalised components, such as culturally adapted content or content tailored to an individual's symptom level, and responding to the rapid changes to individuals' needs, a targeted approach accounts for the spectrum of mental illness and the progression of mental ill-health. Targeted interventions are less likely to miss those who "need it most"—such as those at risk of, or living with, severe symptoms of mental ill-health. This finding aligns with another systematic review in the adjacent field of grief and loss, which showed interventions may be effective in preventing complicated grief if they are addressed to a subset of individuals at higher risk [109]. The effectiveness of interventions could be improved by employing a targeted approach and subgrouping participants based on their personal needs and risk of mental ill-health.

This review found that those who drop out of interventions requiring high levels of engagement may have severe symptoms that interfere with completion. On the other hand, those who participate may be more motivated to engage and seek help in the first place. Hence, structured mental health interventions that require high levels of compliance from participants may impact engagement and, ultimately, effectiveness. This conjecture is supported by recent studies that found individuals with lower levels of mental health and suicide literacy are less likely to seek support services compared to individuals with higher levels of literacy [110, 111]. It is, therefore, recommended that future programs target interventions to meet participants' needs, as well as establish a more robust recruitment and retention strategy to identify participants who are less likely to engage in services and more likely to benefit from the intervention (Table 2). A 2022 review of community mental health programs for Australian youth highlighted the importance of providing targeted programs in "their own environment," as it is flexible, easily accessible, actively engaging, and effective [16]. Strategies to improve recruitment and retention are particularly necessary in circumstances where the participants have characteristics that might undermine their participation and indicate they might particularly benefit from the program [65]. In fact, engagement was reported as a way to improve both short-term and longitudinal outcomes [73, 104].

Future research should also consider the characteristics of individuals most likely to benefit [43]. Mixed results with respect to group differences between control and intervention groups indicate a need for further investigation into the conditions under which an intervention may be beneficial [59]. Hence, testing modules (or combinations of modules) that are most efficacious may inform tailoring strategies. These experiments are needed to evaluate components and mechanisms that influence mental health outcomes [28, 50, 51] and the impact of tailoring interventions with respect to content, duration, delivery methods, and target populations on program efficacy [25, 39, 48]. Adjusting for multiple statistical testing allows for any small effects on mental health symptoms such as depression and anxiety to be firmly established and for

Table 2: Recommendations on how to improve recruitment and engagement, by intervention type.

Digital health interventions	Light-touch interventions
(1) Improve the user experience through greater personalisation and flexibility	(1) Offer flexible modes of delivery, such as group and individual settings
(2) Utilise codesign methods in the development and delivery of the intervention	(2) Allow participants to self-select as a way to circumvent potential stigma, increase engagement and commitment to the program and encourage participants to join with friends, thus leading to better group cohesion
(3) Explore ways to reduce intervention-related workload while ensuring positive outcomes; for example, highlighting the brief time commitment required to work through the online modules may increase module completion	(3) Explore how small group and one-on-one opportunities for experiential learning could be adapted to reinforce and consolidate the content into weekly workbook exercises through peer group discussion or direct contact between instructors and participants

investigation of mediation or moderation effects based on demographic characteristics, mental health status, relationship characteristics, and program adherence [50]. For example, cultural background was found to influence the effectiveness of some mental health interventions [78, 92]. Future research might consider how to select participants for trials of targeted preventive interventions [83] and whether different participants respond to different forms of interventions based on factors such as symptom severity [104]. Strategies that match participants' needs with tailored interventions and address mechanisms and outcomes of interventions may improve efficacy through more focused targeting of programs, particularly among those experiencing significant difficulties [83, 104]. The exploration of mediators and mechanisms of intervention effects, or the type of intervention and with what intensity is best suited for participants with varying levels of mental ill-health promotes a person-centred approach to service delivery [83, 91].

4.1. Standardised Outcome Measures. The evidence base of community-based outreach interventions would strengthen through standardised outcome measures. Most outcome measures identified in this review were self-reported and lacked clinical assessment, meaning some participants may have met the criteria for mild depression and potentially blurring the distinction between prevention and treatment [26]. The selection of a measure that is suitable for use in both clinical and nonclinical populations is necessary, in order to avoid limitations of floor or ceiling effects [104]. Because interventions have the potential to address comorbidities, outcome measures must be better chosen to capture clinical symptom thresholds [91] and other relevant health components, such as sleep [67, 76], internalising disorders [95, 104], and resilience [76]. This includes interventions supporting the mental well-being of those with recognised chronic physical and mental conditions (e.g., patients with diabetes, hypertension, tuberculosis, and HIV/AIDS), who are at higher risk of mental ill-health [112].

The evidence base relating to community-based outreach interventions can also improve with the inclusion of mental health disorders other than depression and anxiety [43], as well as longer-term outcome measures [35, 62]. Further outcome measures that could be considered are symptom items that are tailored to the unique nature of the setting. For example, in self-reflection therapy for military cadets, outcome measures could assess concerns about careers or the effects of training on performance outcomes [72]. Furthermore, studies evaluating First Nations art programs in the prison setting could consider the impact of engagement on postrelease outcomes such as suicidal behaviours, general health, mental health, and violent recidivism as well as positive outcomes such as reconnection to culture, community supports, and employment [93].

4.2. Strengths and Limitations. This review was strengthened by the inclusion of a broad range of studies, innovative categorisation of interventions and analysis using a high-quality framework. To our knowledge, this is the first study that has analysed and synthesised studies related to community-based outreach interventions targeting those experiencing mental ill-health in Australia. Nonetheless, there are also limitations. There is a risk that a relevant article has been missed during the literature search due to the lack of consistent terminology for community-based outreach although we used a systematic approach and identified a clear definition prior to conducting the search. We limited our search strategy to studies published within the last six years (2017–2022) due to the time constraints of the review. Still, we can be confident the findings of this review are timely and relevant. We also excluded studies targeting a healthy population or included an outcome measure related to but not specifically mental ill-health (e.g., stress and general well-being). This was to ensure that the studies included in the review were contributing to the evidence base related to mental ill-health prevention and early intervention. We were also unable to conduct a meta-analysis due to the various participants, interventions, types of mental ill-health, and outcome measures in various settings. Further, the quality of some studies was low, which may compromise the generalisability of the results. The focus of our review was on Australian literature; therefore, future research may be necessary to explore other geographical regions.

5. Conclusion

Results from this review provide an understanding of the available evidence related to community-based outreach interventions for supporting individuals in the Australian community. A systematic search of the literature identified 83 studies—42 digital health interventions and 41 light-touch interventions. Most studies reported a high-risk of bias and high attrition, recruitment difficulties, and insufficient outcome measures, so it remains unclear whether community-based outreach interventions are universally effective. Yet, discrepancies in engagement identified patterns in the effectiveness of interventions based on symptom severity. Digital health interventions were reported to have the potential for dissemination and universal implementation, with high acceptability and feasibility, particularly for those with mild to moderate symptoms of mental ill-health and those who may not seek treatment or who prefer not to take medication. Light-touch interventions—defined as nonclinical community interventions that utilise health promotion strategies in the prevention or early intervention of mental ill-health—have been widely used in schools and other institutional settings due to the flexible and accessible mode of delivery. Some light-touch interventions were effective in improving psychosocial health, reducing the incidence of suicide and self-harm, and reducing symptoms related to depression and post-traumatic stress disorder. Individuals with severe mental ill-health were likely to benefit from targeted interventions, and individuals with mild to moderate symptoms of mental ill-health were likely to benefit from interventions involving high levels of engagement from participants. The findings of this review

demonstrate that targeted strategies may enhance the proactive provision of early intervention and prevention initiatives in the community. Researchers and service providers would benefit from standardised outcome measures for community-based outreach intervention, in order to explore the effect of tailoring interventions to participants' needs and achieve a more person-centred approach to care.

Data Availability

Data sharing is not applicable to this work as it is a systematic review, so no datasets were generated or analysed.

Conflicts of Interest

The authors declare that they have no conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Supplementary Materials

Supplementary file 1 comprises the full systematic search strategy across all of the included databases. Supplementary file 2 contains the completed PRISMA checklist. Supplementary file 3 presents a table of the characteristics of included studies. Supplementary file 4 presents a table of the quality assessment of included studies, using the National Health and Medical Research Council Evidence Hierarchy. Supplementary file 5 provides a summary of the results, according to the dimensions of the PAGER framework. (*Supplementary Materials*)

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