

Effect of community mental health care programs in Australia: a systematic review

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Abstract. Although numerous studies have examined the effects of community-based mental health care programs in Australia, no synthesis of this literature exists. This systematic review of peer-reviewed and grey literature described the types of community-based mental health care programs delivered and evaluated in Australia in the past 20 years, and evaluated their impact in improving outcomes for those with a serious mental illness (SMI). Articles were included if they evaluated the extent to which the programs delivered in Australia improved individual outcomes, including hospitalisations, psychiatric symptoms, substance misuse or psychosocial outcomes, for individuals with an SMI. Forty studies were included. Community-based mental health care programs were categorised into three types: case management ($n = 23$), therapeutic ($n = 11$) and lifestyle ($n = 6$). Therapeutic programs were most effective in reducing psychiatric symptoms. Case management approaches yielded significant improvements in psychosocial outcomes. Lifestyle programs were inconclusive in improving individual outcomes. This review provides support for the implementation of community-based mental health care programs that are informed by both therapeutic and case management principles. A multidisciplinary team that can facilitate the provision of therapeutic and psychosocial support may be most beneficial for those with an SMI within the Australian community.

Keywords: community mental health services, mental health, systematic review.

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Introduction

Serious mental illness (SMI) is defined as a mental, behavioural and/or emotional disorder that has episodic, recurrent or persistent features resulting in severe impairment (Baker *et al.* 2018). SMI increases the likelihood of experiencing a plethora of adverse consequences, including homelessness (Baker *et al.* 2018), social isolation (McCorkle *et al.* 2008) and premature mortality (Chwastiak and Tek 2009). However, individuals with an SMI are unlikely to receive sufficient treatment. In Australia, it is estimated that 54% of people diagnosed with an SMI do not receive the treatment they need (Whiteford *et al.* 2014). This concerning treatment gap has been largely attributed to system-level barriers, such as poor interdisciplinary communication, service fragmentation and the shortage of targeted and effective mental health programs (Saxena *et al.* 2007).

International research has shown that mental health care delivered in the community can address system-level barriers that perpetuate this treatment gap of SMI by providing comprehensive wraparound support via a multidisciplinary team of health professionals (e.g. nurses, physicians, case workers; Lee *et al.* 2015; Dieterich *et al.* 2017). For example, Castillo *et al.*

(2018) implemented a community-based mental health program in the US to better meet the needs of adults with an SMI. That program comprised multidisciplinary care including psychiatric care, exercise skills, daily living skills, substance abuse treatment and employment support. The findings revealed that the program met the needs of the sample because significant improvements were identified in participants' health and well-being outcomes, and their reliance on acute-based care was mitigated (Castillo *et al.* 2018).

Since community-based care was identified as an integral solution to reduce the treatment gap of SMI (e.g. Rosen *et al.* 2010), the community mental health sector has grown significantly. Indeed, the number of research studies examining the effectiveness of such programs, particularly in Australia, has increased substantially in the past 10 years. International findings tend to show a positive association between the implementation of community-based mental health care and improved outcomes, including reductions in psychiatric symptoms (e.g. Priebe *et al.* 2015), substance misuse (e.g. Lee *et al.* 2015) and improvements in psychosocial outcomes (e.g. Botha *et al.* 2014). Furthermore, these studies demonstrate that

participants who receive community-based mental health care continue to report significant reductions in hospital readmissions years after the delivery of the treatment (e.g. Lee *et al.* 2015).

Despite this promise of community-based mental health care programs, there is currently a lack of scholarly attention directed to synthesising the recent Australian evidence base. To the best of our knowledge, no systematic review of the Australian literature has examined the effects of community-based mental health care programs delivered within the community. Consequently, key stakeholders and policy makers are forced to rely on a relatively fragmented evidence base, which impedes their ability to select the most effective program for their local context (Griffiths *et al.* 2015). Australia is facing a fiscal environment where it is increasingly difficult to maintain the rising levels of growth in mental health care (Cook 2019). Synthesising the extent to which various types of community-based mental health programs delivered and evaluated in Australia are contributing to better outcomes for those diagnosed with an SMI warrants investigation. This will help demonstrate how this sector has evolved in recent years.

Therefore, this review aimed to: (1) describe the types of Australian community-based mental health care programs that have been evaluated locally over the past 20 years; and (2) examine the effects of these programs in improving individual outcomes, including psychiatric symptoms, substance misuse, psychosocial outcomes and/or hospital readmission rates, for those with an SMI.

Methods

Design

A systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement guidelines (Appendix S1, available as Supplementary Material to this paper; Liberati *et al.* 2009).

Search strategy

A systematic search of the literature was performed on studies that had evaluated the impact of Australian community-based mental health programs. Papers were identified by searching electronic databases (PsycINFO, PsycARTICLES, Psychology and Behavioural Science Collection, and MEDLINE Complete). All available records were searched starting from January 1999 until July 2020 inclusive (the study commenced in 2019 and the search was updated in July 2020, hence a 21-year time frame) using the following combination of keywords in the title or abstract: 'program', 'mental illness', and 'community mental health'. The complete search syntax is presented in Appendix S2. A search of the grey literature was also conducted to uncover impact evaluations of programs conducted by Australian government departments and community service organisations, which are rarely published in conventional academic repositories.

Inclusion and exclusion criteria

Articles were included in the review if they met the following inclusion criteria: (1) the study evaluated the impact of a mental health program that was delivered within the community (e.g. delivered in homes, community centres etc.); (2) participants

were adults aged >18 years with a primary diagnosis of an SMI; (3) the study was conducted in Australia; (4) the study examined individual outcomes, such as hospital readmission rates, psychopathology (e.g. presence or severity of psychiatric symptoms), substance misuse and/or psychosocial outcomes, which encompasses independent living (i.e. broader needs being diminished, life skills, activities of daily living), social functioning and quality of life; and (5) the study was published in English between January 1999 and July 2020 inclusive. The authors felt that this period of time was necessary to demonstrate how the community mental health sector in Australia has evolved in recent years.

Given the present review was focused on community-based programs delivered to those willing to engage, studies were excluded if: the program was mandated, such that participation was involuntary; the primary diagnosis was not a mental illness (e.g. substance abuse or intellectual disability); and if smartphone or technological interventions (e.g. mobile phone applications) were used, because these were not considered to be delivered within the community.

Quality assessment

Two quality assessment tools were used in this systematic review to account for the mixed study designs, the National Institutes of Health (NIH) Quality Assessment Tool for Controlled Studies (14 items) and the NIH Quality Assessment of Before and After (Pre-Post) Studies with No Control Group (NIH 2020). To meet the assessment criteria (see Appendix S3), each item was scored as 'yes', 'no', 'cannot determine' (CND) or 'not reported' (NR).

Synthesis

Given the heterogeneity across studies (i.e. differences in the types of programs used, measures used and the outcomes assessed), a meta-analysis was not possible (Greco *et al.* 2013). Descriptions of study characteristics, including study design, participant details and program descriptions are presented in Appendix S4. Key findings are presented in Appendix S5.

Results

Study selection

The stages of study selection are summarised in the PRISMA flowchart in Fig. 1. The search of four electronic databases identified 4767 papers. After removing 940 duplicates, 3827 papers were screened at the title and abstract level (by MS) with a random 20% crosschecked (by RO) and an interrater agreement of 0.97. Of these, 3635 papers were excluded because they did not meet the inclusion criteria. The remaining 192 papers were read in full while applying the inclusion criteria and were assessed independently by two researchers (RO and MS). During this stage, 36 papers were deemed eligible for inclusion. A search of the grey literature identified a total of 62 papers for screening. Of these, only four were deemed eligible for inclusion. Therefore, the total number of papers included in this review was 40 (36 peer-reviewed and four from the grey literature).

Quality of evidence

In all, 18 studies used a controlled trial design (12 randomised controlled trials and six quasi-experimental studies with no

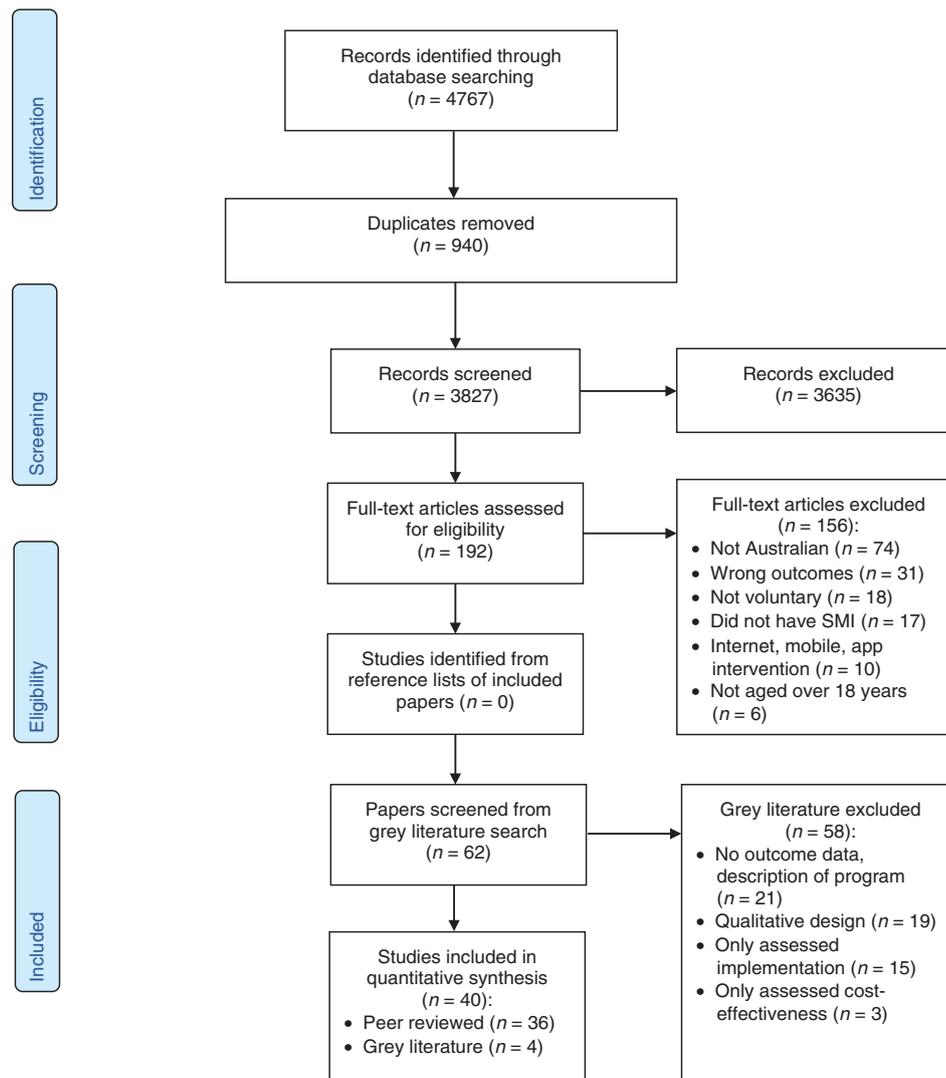


Fig. 1. Flow diagram illustrating the selection process for the systematic review of the literature. SMI, serious mental illness.

randomisation) and the remaining 22 studies used a pre-post design. The quality assessment, specific to the study design, is presented in Appendix S3.

In the 18 controlled studies, no participants were blinded to treatment group assignment, and outcome assessors were blinded in only six studies (33%; Baker *et al.* 2006; Forbes *et al.* 2012; Mills *et al.* 2012; Forsyth *et al.* 2017; Shawyer *et al.* 2017; Kelly *et al.* 2020). The lack of blinding across the controlled studies suggests a high risk of bias may have occurred as a result of participants' expectations, such as influencing self-report outcomes, as well as observer bias from outcome assessors. Nine of the 18 controlled studies (50%) found that differential drop-out rates between intervention and control groups was <15%, which increases the risk of biased estimates of treatment effects, particularly because those who completed the study were often found to differ significantly from those who dropped out. Only three of 18 studies (17%) reported that the sample size was sufficiently large enough to be confident in the

findings with at least 80% power (Hugo *et al.* 2002; Forbes *et al.* 2012; Meadows *et al.* 2019). Ten of the controlled studies (56%) reported low adherence to the intervention or did not report on this at all. Overall, randomisation methods were adequate because only two studies found significant differences between the treatment and control groups at baseline (Gilbert *et al.* 2012; Siskind *et al.* 2013), which suggests that the risk of selection bias is low. Outcome measures were generally valid, reliable and prespecified before analyses, and randomised participants were analysed in the group they were originally assigned to.

In the 22 pre-post studies, outcome measures were generally valid, reliable and prespecified before analyses. However, no studies involved blinding of outcome assessors, indicating that these studies had a high risk of observer bias. Half the pre-post studies reported overall rates of attrition of more than 20% at the endpoint of the study, increasing the risk of biased treatment effects. Fifteen of the 22 studies (68%) did not report that the sample size was sufficiently large enough to be confident in the

findings. Although participant selection criteria were prespecified and clearly described, not all eligible participants that met such criteria were enrolled in the studies, resulting in a high risk of selection bias in 13 of the 22 studies (59%). Specifically, the four pre-post studies from the grey literature consistently lacked blinding, had a high risk of selection bias, had high rates of attrition and had inconsistent statistical methods to examine changes in outcomes (Ziguras 2001; Department of Health and Ageing 2010; Australian Healthcare Associates 2012; Urbis 2015). Overall, the pre-post studies were of fair quality, because the risk of bias was medium.

Study design and sample

A summary of each study's design, participants and program content is presented in Appendix S4. The mean sample size was 177, ranging from 10 to 703, with the exception of the Department of Health and Ageing (DHA) study that examined data for 11 310 adults enrolled in the Support for Day to Day Living program (DHA 2010) and the report prepared by Urbis (2015) that examined retrospective data of 12 628 participants engaged in Partners in Recovery across Australia. Most studies ($n = 38$) included participants with varied SMI diagnoses, with two studies examining participants with the same diagnosis, namely schizophrenia in one study (Boardman *et al.* 2014) and post-traumatic stress disorder in the other (Mills *et al.* 2012). Male and females were equally represented (51% males) and the mean (\pm s.d.) age of participants was 38 ± 5 years. The studies were conducted across various states and territories in Australia, with 10 from Victoria, 10 from New South Wales, eight from Queensland, two each from Tasmania, the Northern Territory, Western Australia and South Australia and one from the Australian Capital Territory. Three studies were conducted across all of Australia.

Types of programs

Three different types of community-based programs were evaluated, namely case management ($n = 23$), therapeutic ($n = 11$) and lifestyle ($n = 6$) programs.

Case management programs

Case management care represents a long-term intensive approach to client care in the community and offers systematic and flexible support using a multidisciplinary team of experts (e.g. case worker, psychologist, GP). Twenty-three of the 40 studies evaluated a case management program, 20 of which were peer reviewed. Six studies evaluated Assertive Community Treatment (ACT). Two of these studies evaluated traditional ACT, where a multidisciplinary team provided intensive case management via extended contact hours and assertive outreach support with a case manager to patient ratio of 1:7 to meet clients' individualised needs (Hamernik and Pakenham 1999; Udechuku *et al.* 2005). Four studies evaluated modified versions of ACT, namely case management with extended contact hours into the evenings (Habibis *et al.* 2002), a community-based mobile treatment team providing assertive outreach and crisis support (Hugo *et al.* 2002), an integrated assertive outreach model of support comprised of a multidisciplinary care team (Lee *et al.* 2010) and intensive case management, which

provided multidisciplinary care, such as medication adherence support, community reintegration options and peer support (Issakidis *et al.* 1999).

Five studies implemented a case management program based on coordinating referrals, including Partners in Recovery, where a support facilitator develops a care plan with clients and then links them with relevant services to enhance service connectedness across various supports (Urbis 2015; Gulliver *et al.* 2018; Hancock *et al.* 2018; Isaacs *et al.* 2019), and the Gemini project, which linked participants with relevant community specialist services, such as drug and alcohol services (Teesson 1999). The Floresco Integrated Service Model was a 'one-stop' model of case management support, including a mental health service hub in the community providing an array of services (e.g. drug and alcohol therapy, case management, housing and welfare payments; Beere *et al.* 2019). Individual Placement and Support, which assisted individuals in finding employment through a dedicated vocational worker, was assessed in three studies (Waghorn *et al.* 2014; Williams *et al.* 2015; Scanlan *et al.* 2019).

Five case management-based studies adopted an integrated housing and recovery model of community support: the Alternatives to Hospitalisation program provided crisis housing and wraparound supports (Siskind *et al.* 2013); the Doorway Program supported participants to choose, access and sustain accommodation alongside clinical case management (Dunt *et al.* 2017); and the Transition to Recovery program (Australian Healthcare Associates 2012) and the Prevention and Recovery Service (Lee *et al.* 2014; Ngo *et al.* 2020) provided supported accommodation with multidisciplinary psychosocial and clinical support to promote recovery. The three remaining studies evaluated the effectiveness of community case management programs after modifications were made, including the addition of a local primary worker (Campbell 2005), Refocus Pulsar training for case management staff (Meadows *et al.* 2019) and the addition of bilingual case workers to the multidisciplinary team (Ziguras 2001).

Therapeutic programs

Therapeutic-based programs are characterised by a mental health professional working with the client, at regular intervals, to discuss thoughts, feelings and how these can be changed to overcome problematic behaviour(s). Eleven of the 40 studies implemented a therapeutic program to assist individuals with an SMI. Seven of the 11 studies adopted cognitive behavioural therapy (CBT), which aims to help individuals identify and change maladaptive habits of thinking, feeling and behaving through the use of practical self-help strategies. Specifically, Chatwin *et al.* (2016) examined individual CBT, Craigie and Nathan (2009) evaluated group CBT and four studies examined the motivational interviewing aspect of CBT to enhance clients' motivation to change maladaptive thoughts (Baker *et al.* 2006; Mills *et al.* 2012; Nagel *et al.* 2009; Ashton *et al.* 2015). The Illness Management and Recovery group program assisted individuals to better manage their SMI through a combination of psychoeducation, motivational interviewing, social skills training and CBT strategies (Mueser *et al.* 2006).

The remaining four studies implemented different types of therapeutic models of care. Contreras *et al.* (2018) examined cognitive remediation therapy, which involved cognitive skills

training to provide individuals with the resources to improve their psychosocial outcomes (e.g. employment, social relationships). Forbes *et al.* (2012) examined cognitive processing therapy, which was a 12-session manualised treatment to address post-traumatic symptoms. Cognitive oriented psychotherapy, implemented by Jackson *et al.* (2001), aimed to prevent secondary morbidity through the development of coping mechanisms. Finally, Shawyer *et al.* (2017) examined acceptance and commitment therapy, which aims to alleviate the distress associated with psychiatric symptoms through acceptance and the use of mindfulness-based techniques.

Lifestyle programs

Lifestyle programs are focused on supporting the individual to adopt healthier life choices (e.g. improved nutrition, increased physical activity and medication adherence), typically through education, social skills and peer-based support. Six of the 40 studies implemented a lifestyle program. Two studies used peer and social techniques: Boardman *et al.* (2014) evaluated a peer support program where peer workers (i.e. those with a lived experience of mental illness) encouraged and promoted medication adherence among participants, whereas Gordon *et al.* (2018) assessed social cognition and interaction training, which taught participants social skills (i.e. recognising and identifying emotions in others) to address interpersonal concerns in their lives.

Three studies implemented general health-focused programs, including: (1) the Optimal Health Program, a self-management program delivered by case managers to help individuals improve their physical and psychosocial health outcomes through goal setting, identifying supports and developing plans to cope with triggers or stressors (Gilbert *et al.* 2012); (2) a lifestyle intervention, which involved regular consultations with dieticians and exercise physiologists to improve nutritional intake and physical activity (Forsyth *et al.* 2017); and (3) the Better Health Choices program, a manualised program delivered by peer workers to promote healthy lifestyle behaviours (e.g. increase healthy eating, reduce substance use etc.; Kelly *et al.* 2020). Finally, the DHA (2010) evaluated the impact of the Support for Day to Day Living in the Community (D2DL) program, which included structured social activities, cultural and recreational events, daily skills training, links to vocational training and housing and income support. Further information about the content of each program is provided in Appendix S4.

Impact of programs

As most studies did not report effect sizes, the impact of the programs has been detailed in a descriptive way.

Case management programs

Twenty-one of the 23 case management programs found significant improvements in outcomes, including psychosocial functioning ($n = 18/21$), substance misuse ($n = 1/2$; Teesson 1999) and hospital readmission rates ($n = 6/9$). Only three of the seven studies that examined the impact of case management support on psychiatric symptomology revealed significant improvements. An extended-hours community mental health team

and bilingual case management had no significant effect on any of the outcomes assessed (Ziguras 2001; Habibis *et al.* 2002).

Eighteen case-management programs found significant improvements in psychosocial functioning, such as social support, independent living and broader needs being diminished. Specifically, the Individual Placement and Support program, where participants had regular contact with a dedicated vocational worker, yielded significant improvements in employment outcomes (Waghorn *et al.* 2014; Williams *et al.* 2015; Scanlan *et al.* 2019). Further, the coordination of services in the Partners in Recovery program was effective in meeting participants' health and social needs, improving their overall psychosocial functioning (Urbis 2015; Gulliver *et al.* 2018; Hancock *et al.* 2018; Isaacs *et al.* 2019). One of two studies that examined the effect of case management on substance misuse reported significant reductions in participants' consumption of tobacco, alcohol and cannabis (Teesson 1999). Finally, six of nine studies found significant reductions in hospital readmission rates. For example, Siskind *et al.* (2013) found that participants who had access to wrap-around case management support experienced fewer inpatient admissions than those without this type of support.

Therapeutic programs

Nine of the 11 therapeutic programs yielded significant improvements in individual outcomes, including psychiatric symptoms ($n = 6/9$; Mueser *et al.* 2006; Craigie and Nathan 2009; Nagel *et al.* 2009; Forbes *et al.* 2012; Mills *et al.* 2012; Shawyer *et al.* 2017), substance misuse ($n = 4/5$; Baker *et al.* 2006; Nagel *et al.* 2009; Forbes *et al.* 2012; Ashton *et al.* 2015) and/or psychosocial outcomes ($n = 4/7$; Mueser *et al.* 2006; Craigie and Nathan 2009; Nagel *et al.* 2009; Contreras *et al.* 2018). Two of the 11 therapeutic programs (individual CBT and cognitive oriented psychotherapy) found no significant changes in individual outcomes (Jackson *et al.* 2001; Chatwin *et al.* 2016). No studies examined the effects of therapeutic programs on hospital readmission rates.

Six of the 11 studies that assessed the effects of therapeutic programs on psychiatric symptoms (e.g. hallucinations, delusions and depressive symptoms) found significant improvements (Mueser *et al.* 2006; Craigie and Nathan 2009; Nagel *et al.* 2009; Forbes *et al.* 2012; Mills *et al.* 2012; Shawyer *et al.* 2017). Specifically, participants who engaged in cognitive processing therapy had significant reductions in depressive, anxiety and post-traumatic stress symptoms (Forbes *et al.* 2012). Four of five studies that examined substance misuse reported significant reductions in participants' consumption of alcohol (Forbes *et al.* 2012), tobacco (Baker *et al.* 2006; Ashton *et al.* 2015) and other drug use (Nagel *et al.* 2009). Finally, four of seven studies found significant improvements in participants' psychosocial outcomes (Mueser *et al.* 2006; Craigie and Nathan 2009; Nagel *et al.* 2009; Contreras *et al.* 2018). Nagel *et al.* (2009) observed better overall psychosocial wellbeing among participants who received the CBT-based motivational interviewing therapy program than those who did not.

Lifestyle programs

Only two of the six studies that implemented a lifestyle program yielded effective improvements in either psychiatric

symptoms ($n = 1/1$; Boardman *et al.* 2014) and psychosocial functioning ($n = 2/4$; DHA 2010; Gilbert *et al.* 2012). One study evaluated the extent to which the lifestyle program reduced hospital readmission rates (e.g. Gilbert *et al.* 2012); no significant reductions were found.

Boardman *et al.* (2014) showed that negative symptoms associated with schizophrenia were reduced (e.g. low mood, lack of emotional expression and lack of pleasure or interest in daily activities) among participants who received a peer-support lifestyle program. Two of the four lifestyle studies that evaluated psychosocial outcomes found significant improvements in participants' health and social functioning (DHA 2010; Gilbert *et al.* 2012). Specifically, approximately 40% of individuals engaged with the D2DL program exhibited improvements in their overall psychosocial functioning and had their broader needs met across the 2-year evaluation period (DHA 2010). Further information about the impact of each program is provided in Appendix S5.

Discussion

The aims of this review were to describe the various types of community-based mental health care programs that have been delivered and evaluated in Australia over the past 20 years and to examine the effects of these programs in improving outcomes for those with an SMI. In all, 40 studies were included in the review. Three different types of community-based programs were evaluated: case management ($n = 23$), therapeutic ($n = 11$) and lifestyle ($n = 6$).

Therapeutic programs, which tended to use core principles of CBT, were found to be the most effective in reducing psychiatric symptoms (e.g. psychosis, depression and anxiety). This finding is consistent with the substantial body of evidence highlighting therapeutic approaches, such as CBT, as a 'gold standard' technique to addressing such symptoms (David *et al.* 2018). It also reiterates that the rapport and trust developed between a therapist and client during regular face-to-face contacts (e.g. weekly 1-hour sessions) can adequately facilitate the exploration of psychiatric disturbances among this population in a community mental health setting (Goldsmith *et al.* 2015).

Case management programs were shown to significantly improve psychosocial outcomes, such as broader health and wellbeing indicators, independent living, employment and social support. This is consistent with prior international research demonstrating that the structure of the case management approach (i.e. dedicated case worker, multidisciplinary team and referrals to different services) allows individuals' wider psychosocial outcomes to be addressed (Dieterich *et al.* 2017). However, case management was not as effective in addressing psychiatric symptoms; this may be because therapeutic support is not inherently a part of the case management model of care. Although case management approaches can permit referrals to therapeutic support via psychologists, this level of care is not a formalised component of case management and therefore not always facilitated (Waghorn *et al.* 2014; Williams *et al.* 2015). Thus, it appears clients may not be able to explore or address their symptoms in as great depth via the case management approach.

Finally, the results are somewhat inconclusive regarding the impact of lifestyle programs for people with an SMI. Although the findings revealed some positive associations between participation in lifestyle programs and improvements in psychosocial outcomes and psychiatric symptoms, the limited number of studies evaluating this model of care makes it difficult to provide a definitive conclusion about its effect. Therefore, further evaluation of such lifestyle programs is necessary in order to firmly recommend their application in the community mental health sector in Australia. Until then, the adoption of a case management- or therapeutic-based program within the community is recommended.

The findings of this review suggest that the delivery of the case management or therapeutic approach can be tailored depending on the needs of the client. Therapeutic approaches would be recommended for individuals who want to manage and/or reduce psychiatric symptoms exclusively. In contrast, the case management approach appears to be better suited to those who have less severe symptomatology and want to improve psychosocial outcomes, such as broader health and wellbeing needs. However, given that people with an SMI experience both psychiatric symptoms and disturbances to their psychosocial health (Beere *et al.* 2019), a model of care in the Australian community that permits a therapeutic approach to be heavily embedded within the case management model of care, rather than as a supplementary or separate component, may be most beneficial. This more holistic model of care accords with the need for individuals with an SMI to have wraparound support from a multidisciplinary team that provides individualised and tailored support to meet their specific needs and goals.

Internationally, the gold standard community-based intervention for individuals with severe mental illness is ACT. Over the years, this model of care has consistently been found across the US, UK and Europe to not only reduce clients' symptomatology, but also adequately meet their needs and improve psychosocial functioning (Marshall and Lockwood 1998; Bond *et al.* 2001; Schöttle *et al.* 2018). Indeed, ACT successfully combines both the therapeutic and case management support that this population requires through its provision of assertive outreach and intensive support from a multidisciplinary team (Marshall and Lockwood 1998). In contrast, the present review identified six of 40 studies that have evaluated ACT in Australia (two of which were traditional ACT) in the past 20 years, yielding mixed results. Earlier local evaluations have established the evidence base of ACT in the Australian population, and it has become widely accepted as a gold standard model of community support (Teesson and Hambridge 1992; Hambridge and Rosen 1994). However, restricting the present search to the past 20 years means that this earlier evidence for ongoing programs, such as ACT, was not captured in this review. Instead, the findings demonstrate how the mental health sector in Australia has evolved over this time period, with numerous studies evaluating various modifications to traditional ACT and case management, and an emphasis on coordination and integration of support. The findings of the present study demonstrate the need for tailored, intensive and integrated support programs that adopt key assertive outreach principles.

Although the synthesis of this literature has led to a more thorough Australian evidence base regarding community-based

mental health programs, additional limitations are noted. It must be acknowledged that this review does not identify all community-based mental health care programs that have been delivered in Australia. Rather, it examines programs that have been subject to reasonably rigorous evaluations in the past 20 years that have been published in empirical peer-reviewed or grey literature repositories. Therefore, programs that are implemented in Australia based on face validity or those that align with national strategic directions or state and territory guidelines and policies but lack systematic evidence, are not captured in this review. An example of this type of program is the collaborative recovery model, which provides holistic support based on the recovery-oriented approach within Australia. Further, some well-established programs implemented in Australia are based on extensive international evidence among similar populations and therefore do not require ongoing local evaluation. This applies to dialectical behaviour therapy, which has substantial international evidence for its effectiveness in supporting adults with borderline personality disorder (O'Connell and Dowling 2014), and continues to be implemented in Australia without recent local evaluation. Future evaluations of currently implemented interventions are required to continue advancing the evidence base of community models of mental health care in Australia.

In addition, only a minority of the studies reviewed herein (9/40) examined the extent to which the community-based program mitigated rates of hospital readmission, and six of these studies yielded improved hospital readmission rates (Hamernik and Pakenham 1999; Hugo *et al.* 2002; Lee *et al.* 2010; Australian Healthcare Associates 2012; Siskind *et al.* 2013; Dunt *et al.* 2017). The lack of focus on hospital readmissions in evaluations over the past 20 years is concerning because the Australian mental health system was reformed to include a greater amount of community-based care in order to reduce the burden on acute forms of care such as the hospital system (Hickie *et al.* 2005; Griffiths *et al.* 2015). Thus, it is not clear whether the wider dissemination and delivery of community-based mental health programs has achieved this goal because it is not being appropriately evaluated. More work is needed in this area to extend these findings and assess the extent to which community-based mental health programs (i.e. therapeutic, case management and lifestyle) can reduce pressure on acute supports such as the hospital system, as intended by the mental health reform (Griffiths *et al.* 2015).

The present review has described and examined the impact of Australian community mental health programs for adults that have been evaluated and published in the past 20 years. This evidence base provides a useful framework within which health professionals and policy makers can be guided. Indeed, these findings highlight the importance of providing wraparound multidisciplinary support to adults with an SMI to improve both psychiatric symptoms and psychosocial outcomes. Based on these findings, people with an SMI within the Australian community will benefit most if they are provided with a multidisciplinary team of experts who can facilitate the provision of therapeutic support as well as other individualised services (i.e. housing, social connections, drug and alcohol, employment). In conclusion, we hope that the findings of this review are useful and informative in the development (and

redevelopment) of mental health programs within the Australian community and that they help stimulate further research that extends our understanding of the effects of community based mental health programs within the Australian community.

Conflicts of interest

The authors declare no conflicts of interest.

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