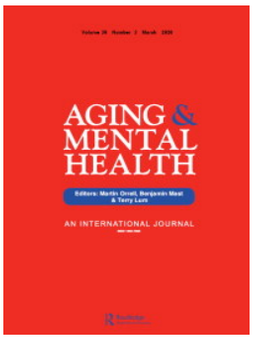

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Effects of group psychological interventions on mood in individuals with Mild Cognitive Impairment: a systematic review

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ABSTRACT

Objectives: People with Mild Cognitive Impairment (PwMCI) often experience depression and anxiety, which may increase the risk of dementia. While psychological therapy for PwMCI has been explored, the effectiveness of group-based interventions has not. This review systematically examined the methodological quality and effectiveness of group psychological interventions for PwMCI.

Method: Five databases were searched for studies examining group psychological interventions for PwMCI. Ten studies met the inclusion criteria and were assessed using the Psychotherapy Outcome Study Methodology Rating Form. Interventions were compared by model, length, additional support, and involvement of significant others. A narrative synthesis of the findings was produced.

Results: Intervention models included Cognitive Behavioural Therapy, mindfulness, self-empowerment-based interventions, a self-efficacy-based intervention, psychosocial (Recovery Model), and an integrative intervention. Outcomes on mood symptoms were reviewed; only six of the 10 studies reported statistically significant improvements. Empowerment-based and self-identity–focused interventions were more frequently associated with reported improvements than other intervention types. Methodological quality was generally low, with substantial heterogeneity in design, outcome measures, and intervention intensity.

Conclusion: Group psychological interventions show potential for improving mood in PwMCI, particularly empowerment-based approaches. However, methodological weaknesses limit confidence in these findings. Future research should prioritise methodological rigour to clarify the effectiveness of group psychological interventions for PwMCI.

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Mild Cognitive Impairment; group intervention; psychological intervention; mental health; older adults

Introduction

Mild Cognitive Impairment (MCI) is characterised by a measurable decline in cognitive function, such as memory, attention, or executive function, while overall functional abilities remain relatively unchanged. MCI is distinct from dementia, and people with MCI (PwMCI) represent a heterogeneous group with diverse aetiologies (Petersen et al., 2014). Global prevalence in adults over 50 years old is estimated at 15–20% (Bai et al., 2022). Epidemiological studies demonstrate 18–30% of PwMCI experience a reversal to normal condition after 1 year or more (Malek-Ahmadi, 2016; Wood, 2016). Whereas progression to dementia is more frequently observed in clinical samples (Tifratene et al., 2015). Overall, PwMCI remain at substantially elevated risk of dementia, estimated at approximately 3.3 times that of healthy matched controls (Petersen et al., 2018).

PwMCI are usually informed that symptoms could improve, decline or remain stable, and may be advised to manage modifiable risk factors for dementia (Livingston et al., 2020). This includes managing depression, which has been identified as a risk factor for dementia in PwMCI (Cooper et al., 2015; Mourao et al., 2016). There is also evidence to suggest that anxiety may be a risk factor for dementia in PwMCI; however, it has received less research attention in this context (Cooper et al., 2015; Li & Li, 2018). These findings are significant alongside the evidence that PwMCI are more likely to experience depression and anxiety than age-matched controls (Chen et al., 2018; Ismail et al., 2017).

Some PwMCI express relief after being diagnosed with MCI to have an explanation for their difficulties and to not receive a dementia diagnosis, but many experience uncertainty. Although advanced diagnostic tools, including neuroimaging and cerebrospinal fluid biomarkers, can help identify or exclude underlying neurodegenerative conditions such as Alzheimer's Disease, these are not routinely used in clinical practice. Previous reviews found living with this ambiguity profoundly impacts a person's sense of identity. They found that the nebulous nature of MCI affects how individuals react to their diagnosis, with perception of the diagnosis and coping styles playing a key role in adjustment (Blatchford & Cook, 2022; Carter et al.,

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2023; Gomersall et al., 2015). Although the relationship between MCI and mental health is complex and potentially bi-directional (Yin et al., 2024), these findings may explain poorer mental health outcomes in this population (Chen et al., 2018).

Evidence for psychological interventions for PwMCI is mixed. Cognitive Behavioural Therapy (CBT) has shown small effects on depression and anxiety but is not superior to usual care (Orgeta et al., 2022). A large, randomised control trial (RCT) combining CBT and cognitive rehabilitation reduced depressive symptoms (Tonga et al., 2021), but smaller studies report inconsistent results (Scheurich et al., 2008). Mindfulness-based interventions also show inconsistent effectiveness (Rose Sin Yi et al., 2023; Han, 2022). Many MCI intervention studies include participants with other conditions, such as subjective cognitive decline, making interpretation difficult (Orgeta et al., 2022; Rostamzadeh et al., 2022). Reviews are also limited by intervention heterogeneity and lack of differentiation between individual and group formats, which could clarify the benefits of each approach.

Previous reviews report benefits of various group-based interventions for PwMCI, including reminiscence therapy (Wu et al., 2023) and dance therapy (Huang et al., 2023), for both mental health and cognitive outcomes. However, most non-pharmacological programmes are designed to improve cognition, with mood and psychological well-being typically assessed as secondary outcomes rather than primary targets. Although short-term group therapy has shown greater benefits than individual therapy in dementia populations (Cheston & Ivanecka, 2017), these findings cannot be assumed to apply to MCI. Despite the established influence of mental health on prognosis and functioning in PwMCI, no systematic review has specifically examined the effects of group psychological interventions on mood outcomes in this population, highlighting the need for targeted evaluation (Cooper et al., 2015; Livingston et al., 2020; Tan et al., 2019).

Method

This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2015) and was registered with the Prospective Register of Systematic Reviews in May 2024 (Registration: CRD42024550165).

Search and screening procedures

Electronic searches were conducted in PsycINFO, MEDLINE, SCOPUS, EBSCO (CINAHL), and ProQuest for literature published from 1999 to the present, as MCI was first defined as a distinct entity in 1999 (Petersen et al., 1999). Search terms combined variations of MCI with group psychological intervention terms (e.g. 'group therapy', 'group CBT', 'group psychoeducation'). Reference lists of relevant studies were also manually searched.

Titles and abstracts were screened for inclusion/exclusion criteria, followed by full-text review. A second reviewer screened 50% of studies, showing substantial agreement (Cohen's $\kappa = 0.72$, $p < .001$).

Inclusion and exclusion criteria

Studies were included if they: (1) involved PwMCI; (2) evaluated a group-based psychological intervention aimed at improving mood; (3) were conducted online or in person; (4) measured pre- and post-intervention mood symptoms; and (5) used quantitative or mixed-methods designs.

Exclusion criteria were: (1) individual-only interventions; (2) interventions not delivered in real time (e.g. recorded psychoeducation sessions); (3) non-English studies; or (4) lack of specified MCI diagnostic criteria, to ensure diagnostic validity. For a summary of the diagnostic criteria used in the included studies see Appendix A.

Data extraction

Extracted data included participant characteristics, methodology, intervention details and purpose, outcome measures, and results (Appendix B). A second reviewer cross-checked 50% of studies ($n = 5$), with no discrepancies identified.

Quality assessment

Study quality was assessed using The Psychotherapy Outcome Study Methodology Rating Form (POMRF; Öst, 2008; Appendix C), chosen for its relevance to psychological interventions and good reliability (Cronbach's $\alpha = 0.86$; mean interrater reliability = 0.75). The POMRF has 22 items, which assess a range of methodological elements. Studies are scored 0 (poor), 1 (fair), or 2 (good) for each question, with total scores ranging from 0 to 44. Two reviewers independently scored all studies, achieving excellent agreement (Intraclass Correlation Coefficient = 0.940) (Koo & Li, 2016). Reviewers discussed any discrepancies to reach a consensus. Total POMRF scores are reported in Table 1, with detailed ratings in Appendix D.

Table 1. Total POMRF score for each study.

Study	POMRF total score
Barton et al. (2020)	11
Belleville et al. (2018)	27
Chouinard et al. (2019)	24
Joosten-Weyn Banningh et al. (2008)	17
Joosten-Weyn Banningh et al. (2011)	21
Lee et al. (2023)	20
Lin et al. (2023)	26
Naismith et al. (2019)	20
Wells et al. (2013)	12
Yu et al. (2019)	18

Synthesis

A narrative synthesis was used to integrate the findings from the studies.

Results

Literature search results

Database searches retrieved 874 articles and citation searches retrieved a further nine. After duplicates were removed 466 were screened. Full-text screening excluded a further 61 studies, mostly for ineligible interventions or populations. Ten studies met all criteria and were included in the review (Figure 1).

Quality assessment

A variation in methodological quality was found, with total scores ranging from 11 to 27 out of 44 (mean = 19.6, SD = 5.08). Belleville et al. (2018) scored highest and Barton et al. (2020) lowest. While no formal POMRF classification exists (Öst, 2008), only three studies scored above half of the maximum (Belleville et al., 2018; Chouinard et al., 2019; Lin et al., 2023), indicating generally low study quality.

Study samples

The studies originated from a range of countries: Netherlands ($n=2$; same first author; Joosten-Weyn Banningh et al., 2008, 2011), Canada ($n=2$), Hong Kong ($n=2$), UK ($n=1$), South Korea ($n=1$), Australia ($n=1$), and USA ($n=1$). Sample sizes ranged from 14 (Wells et al., 2013) to 171 (Lin et al., 2023). Participants mean ages were between 69 to 74 years old, except Yu et al. (2019), at 81. There was variation in the gender representation of studies, from 39% female (Chouinard et al., 2019) to 87.7% female (Lin et al., 2023). Gender is reported as percentage female, reflecting the binary male/female categorisation used in all included studies. Education level was reported in all but two studies (Barton et al., 2020; Wells et al., 2013), while income or socioeconomic status appeared

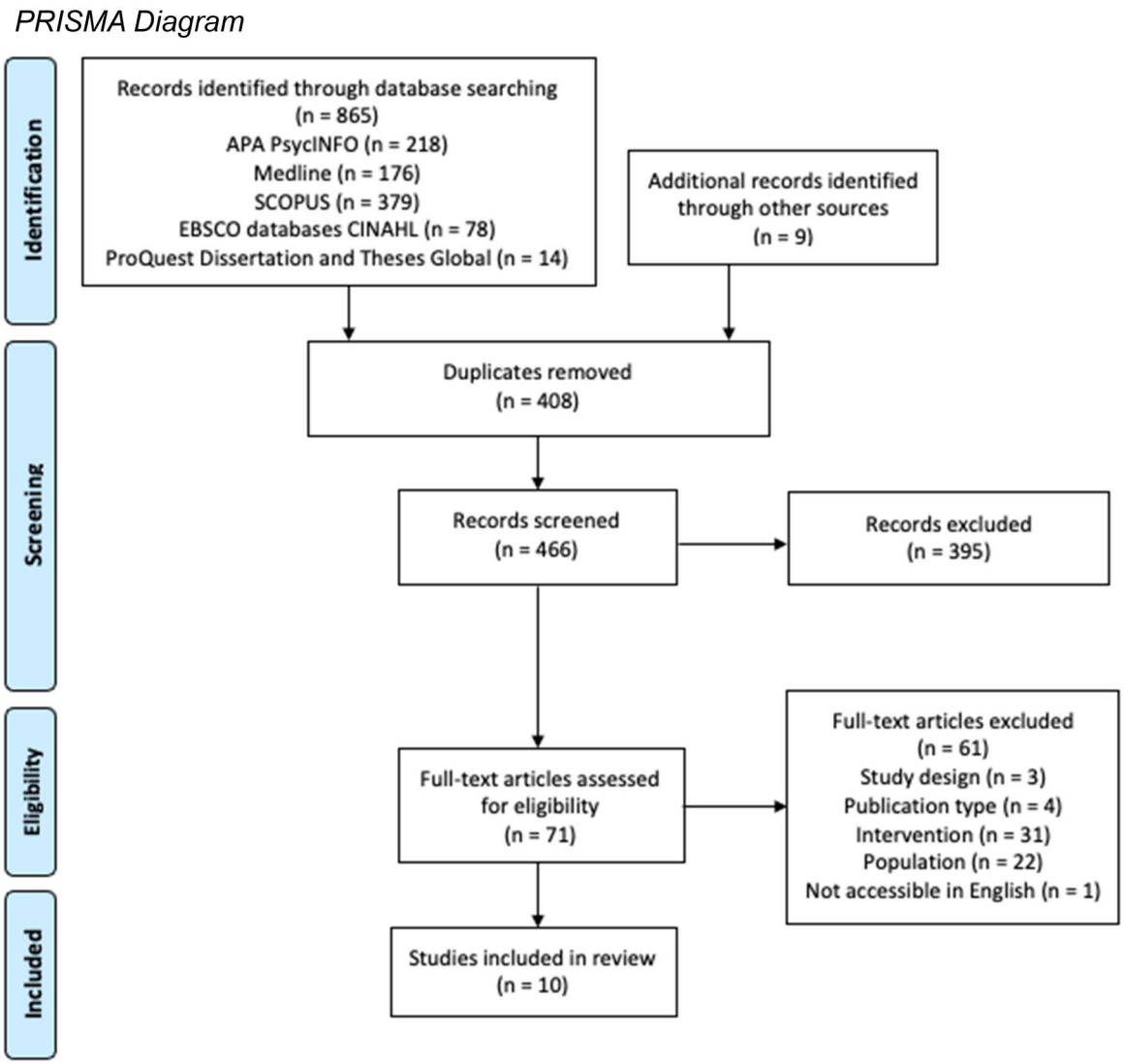

Figure 1. PRISMA diagram.

only in Lee et al. (2023), Lin et al. (2023), and Yu et al. (2019). No studies reported participant ethnicity.

The most common MCI diagnostic criteria were Petersen et al. (2014) ($n=6$), followed by Albert et al. (2011) ($n=1$), Winblad et al. (2004) ($n=1$), the Consortium on Alzheimer's Disease Working Group (Portet et al., 2006) ($n=1$), and the ICD-10 (World Health Organization, 1992) ($n=1$). POMRF evaluation rated six studies 'good' or 'fair' while four studies (Barton et al., 2020; Belleville et al., 2018; Chouinard et al., 2019; Yu et al., 2019) were 'poor' due to unreported diagnostic processes. Only two studies requested stable medications (Chouinard et al., 2019; Naismith et al., 2019), and none controlled for other treatments.

Four studies reported attrition and drop out or intent to treat analysis (Belleville et al., 2018; Joosten-Weyn Banningh et al., 2011; Wells et al., 2013; Yu et al., 2019). Whereas Lin et al. (2023) were the only to report attrition, drop out analysis and intent to treat analysis.

Study design

Of the 10 studies, six were RCTs (Belleville et al., 2018; Naismith et al., 2019; Wells et al., 2013; Yu et al., 2019), including one mixed-methods design (Lin et al., 2023), and one pilot study (Chouinard et al., 2019). Two studies employed a one-group pretest-posttest design (Barton et al., 2020; Joosten-Weyn Banningh et al., 2008), one used an equivalent control group pretest-posttest design study due to lack of blinding (Lee et al., 2023), and one was a non-RCT with no control group (Joosten-Weyn Banningh et al., 2011). Eight studies employed a control or comparison group, but only two had groups matched for therapy hours (i.e. <20% difference) (Belleville et al., 2018; Chouinard et al., 2019).

A range of self-report outcome measures were employed across studies. Only four of the studies (Belleville et al., 2018; Lee et al., 2023; Lin et al., 2023; Yu et al., 2019) state the psychometric properties of the outcome measures. Blind assessors were used in four of the studies (Belleville et al., 2018; Lin et al., 2023; Naismith et al., 2019; Wells et al., 2013).

Six studies collected data only at pre- and post-treatment. Two followed up to four weeks post-intervention (Lee et al., 2023; Lin et al., 2023), and four collected follow-up data within a year, but none of the studies collected data over a year post-intervention.

Intervention format

All group interventions were conducted face-to-face with 4 to 12 participants, spanning 5 to 10 sessions of one to two and a half hours. Total intervention hours ranged from 4 to 20: three studies provided 20 h (Chouinard et al., 2019; Joosten-Weyn Banningh et al., 2008, 2011), three provided 16 h (Barton et al., 2020; Belleville et al., 2018; Wells et al., 2013), and four included eight or less hours (Lee et al., 2023; Lin et al., 2023; Naismith et al., 2019; Yu et al., 2019).

Significant improvements were limited. In 20-h interventions, acceptance improved in two studies (Joosten-Weyn Banningh et al., 2008, 2011), and helplessness improved in female participants only (Joosten-Weyn Banningh et al., 2011). In 16-h interventions, only Barton et al. (2020) showed benefits, including well-being. Interventions of seven and a half to eight hours produced more consistent outcomes: Lee et al. (2023) improved self-efficacy, Lin et al. (2023) improved neuropsychiatric symptoms, and Yu et al. (2019; 6 h) improved depression. Naismith et al. (2019) which was four hours, showed no significant effects.

Four studies included additional support (telephone calls), with Lin et al. (2023) and Yu et al. (2019) reporting improvements, while Naismith et al. (2019) and Wells et al. (2013) did not. Four studies involved significant others, improving acceptance, helplessness in female participants, or depression, but not other outcomes (Joosten-Weyn Banningh et al., 2008, 2011; Yu et al., 2019).

Facilitator reporting was inconsistent; therapist competence was rarely detailed, with only three studies achieving a 'fair' supervision rating (Barton et al., 2020; Joosten-Weyn Banningh et al., 2008, 2011). Treatment adherence checks were also limited.

Intervention type

Lee et al. (2023) was the only study to describe their intervention as preventative; all others primarily aimed to improve mood and well-being. None explicitly targeted individuals with clinically significant mental health difficulties or required any diagnostic thresholds.

Three studies were CBT-based (Belleville et al., 2018; Joosten-Weyn Banningh et al., 2008, 2011). Only Joosten-Weyn Banningh et al. (2008, 2011) showed significant improvements in acceptance, and helplessness in female participants (Joosten-Weyn Banningh et al., 2011).

Two mindfulness-based interventions found no significant mood improvements (Chouinard et al., 2019; Wells et al., 2013).

Two self-empowerment interventions showed the most notable results. Lin et al. (2023) used the Progressively Lowered Stress Threshold Model (Hall & Buckwalter, 1987), and Yu et al. (2019) used the Roy

Adaptation Model (Roy, 2011) and Zimmer's Theory of Psychological Empowerment (Zimmerman, 1995). Both improved depression, with Lin et al. (2023) also improving apathy, anxiety and general neuropsychiatric symptoms.

Barton et al. (2020), using the Recovery Model (Roberts & Wolfson, 2006), improved well-being. Lee et al. (2023), using a self-efficacy programme based on Bandura (1991), improved self-efficacy but not depression. Naismith et al. (2019) combined CBT, mindfulness, and motivational interviewing in 'Sleep Well, Think Well' but found no improvement in depression.

Outcomes

Across studies, psychological outcomes showed limited and inconsistent improvements. Depression, anxiety, stress, well-being, and quality of life outcomes were rarely significant, with only a small number of studies reporting short-term benefits. A few studies demonstrated gains in acceptance, self-efficacy, apathy, and neuropsychiatric symptoms, although these effects were typically modest and not consistently replicated. Overall, the evidence suggests variable effectiveness across outcomes, with most effects observed in isolated studies rather than across the broader evidence base (see Table 2).

Table 2. Mental health and wellbeing outcomes.

Outcome	Outcome measure	Study (intervention group)	Results
Acceptance	Acceptance subscale of the Illness Cognition Questionnaire	Joosten-Weyn Banningh et al. (2008) (CBT group)	A significant improvement was found for acceptance ($d = 0.30$).
		Joosten-Weyn Banningh et al. (2011) (CBT group)	A significant improvement in acceptance was found between the intervention and waiting-list groups (F (1,63.8) = 4.7, $p = .034$). An estimated difference between the two conditions of 3.49 and a 95% confidence interval ranging from −6.21 to −0.73 (d.f. = 73.1, $p = .014$).
Anxiety	Geriatric Anxiety Inventory	Belleville et al. (2018) (CBT-based psychosocial group)	No significant Intervention×Time interactions were found ($F = 0.454$, $p = .84$).
		Chouinard et al. (2019) (Mindfulness based group)	No significant Intervention×Time interactions were found (F (1, 39) = 0.127, $p = .724$, $d = 0.11$).
	Anxiety subscale of the Kessler Psychological Distress Scale	Lin et al. (2023) (An empowerment-based educative psycho-behavioural group program)	A significant improvement was found pre to post intervention ($\beta = -0.53$; 95% CI [−0.92, −0.13]; $p = .009$), and pre to 4 week follow-up ($\beta = -0.40$; 95% CI [− 0.74, − 0.06]; $p = .023$), with small effect sizes detected ($d = 0.297–0.439$).
Apathy	Apathy Evaluation Scale	Lin et al. (2023) (An empowerment-based educative psycho-behavioural group program)	A significant improvement was found pre to post intervention ($\beta = 2.14$; 95% CI [0.37, 3.91]; $p = .018$), and pre to four-week follow-up ($\beta = 3.96$; 95% CI [1.91, 6.00]; $p < .001$), with small to medium effect sizes detected ($d = 0.450–0.717$).
Depression	Geriatric Depression Scale	Belleville et al. (2018) (CBT-based psychosocial group)	No significant Intervention×Time interactions were found ($F = 0.572$, $p = .75$).
		Joosten-Weyn Banningh et al. (2008) (CBT group)	No significant pre- to posttreatment changes were found ($d = -0.28$).
		Joosten-Weyn Banningh et al. (2011) (CBT group)	No significant effects were found for Depression (F (1,45.3) = 0.93, $p = .34$).
		Lin et al. (2023) (An empowerment-based educative psycho-behavioural group program)	A significant improvement in depressive symptoms was found in the GDS-15 at 4 wk follow up ($\beta = -1.41$; 95% CI [− 2.13, − 0.70]; $p < .001$), with small to medium effect sizes (0.286–0.690).
	Chinese version of the Centre for Epidemiologic Studies Depression Scale; C-ESD-10	Yu et al. (2019) (A dyadic strength-based empowerment group program)	Significant improvements were found for depressive symptoms at posttest ($\beta = 2.67$, SE = 1.12, $p = .017$) and in 3- month follow-up ($\beta = 3.57$, SE = 1.31, $p = .006$).
	Hamilton Depression Rating Scale	Naismith et al. (2019) ('Sleep Well, Think Well' group)	No significant differences were found ($F = 0.8$, $p = .390$, $d = 0.31$)
	Public Health Questionnaire (PHQ-9)	Lee et al. (2023) (A self-efficacy enhancement group program)	There was no significant group×time interaction in depression ($F = 0.947$, $p = .422$)
	Depression subscale of the Kessler Psychology Distress Scale	Lin et al. (2023) (An empowerment-based educative psycho-behavioural group program)	A significant improvement in depressive symptoms was found in the K10 subscale at 4 wk follow up $\beta = -0.86$; 95% CI [− 1.49, − 0.23]; $p = .008$), with a small effect size ($d = 0.242–0.421$).
General Mental Health	Mental Health subscale of the RAND-36	Joosten-Weyn Banningh et al. (2008) (CBT group)	No significant pre- to posttreatment changes were found ($d = 0.06$).
	The Mild Behavioral Impairment Checklist	Lin et al. (2023) (An empowerment-based educative psycho-behavioural group program)	A significant improvement was found pre to post intervention ($\beta = -1.49$; 95% CI [−2.95, −0.04], $p = .044$), and pre to four week follow up ($\beta = -1.90$; 95% CI [−3.48, −0.33], $p = .018$), with small effect sizes detected ($d = 0.243–0.256$).
Helplessness	Helplessness subscale of the Illness Cognition Questionnaire	Joosten-Weyn Banningh et al. (2008) (CBT group)	No significant pre- to posttreatment changes were found ($d = 0.08$).
		Joosten-Weyn Banningh et al. (2011) (CBT group)	No significant effects were found for helplessness in the intervention group; however, a small interaction effect was found in women only (F (1,80.9) = 4.95, $p = .029$).
Quality of Life	Quality of Life – Alzheimer's Disease	Wells et al. (2013) (A Mindfulness-based stress reduction group)	No significant changes were found ($p = 0.25$).
Self-Efficacy	Self-reporting instrument developed by Marcus et al., 1992	Lee et al. (2023) (A self-efficacy enhancement group program)	A significant improvement in self-efficacy was found across the time intervals ($F = 5.547$, $p = .002$).
Stress	Perceived Stress Scale	Chouinard et al. (2019) (Mindfulness-based group)	No significant Intervention×Time interactions were found (F (1, 39) = 1.399, $p = .244$, $d = 0.38$).
		Wells et al. (2013) (A mindfulness-based stress reduction group)	No significant changes were found ($p = .46$).

(*Continued*)

Table 2. Continued.

Outcome	Outcome measure	Study (intervention group)	Results
Wellbeing	Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)	Barton et al. (2020) (Psychosocial group)	There was a significant improvement in WEMWBS scores from pre to post intervention (t (15) = 4.89, $p < .01$, two-tailed).
	General Wellbeing Schedule	Belleville et al. (2018) (CBT-based psychosocial group)	No significant Intervention × Time interactions were found ($F = 0.366$, $p = .90$).
	Role-emotional subscale of the RAND-36	Joosten-Weyn Banningh et al. (2008) (CBT group)	No significant pre- to posttreatment changes were found ($d = -0.08$).
	The Dutch version of the RAND-36	Joosten-Weyn Banningh et al. (2011) (CBT group)	No significant effects were found for general wellbeing (F (1,44.6) = 0.08, $p = .78$).
	Short Form Health Survey (SF-12v2)	Lin et al. (2023) (An empowerment-based educative psycho-behavioural group program)	No significant difference was found at post intervention (β = − 1.53; 95% CI [− 4.31, − 1.25.]; $p = .281$), or at 4 wk follow up ($\beta = 0.27$; 95% CI [− 2.87, − 3.40.]; $p = .868$).

Discussion

Summary of results

This systematic review aimed to assess the effectiveness of group psychological interventions on mood symptoms in PwMCI. Although non-pharmacological interventions for MCI primarily target cognitive outcomes, this review synthesises evidence on their effects on mood to clarify the potential of group-based approaches to support emotional well-being. Six out of 10 studies included in the review reported statistically significant improvement in at least one mood outcome: acceptance (Joosten-Weyn Banningh et al., 2008, 2011), anxiety (Lin et al., 2023), apathy (Lin et al., 2023), depression (Lin et al., 2023; Yu et al., 2019), general mental health (Lin et al., 2023), self-efficacy (Lee et al., 2023), and well-being (Barton et al., 2020). However, improvements were often outcome-specific and inconsistent across measures or studies, highlighting the complexity of evaluating psychological interventions for PwMCI and the need for further research. These mixed findings mirror previous reviews (Orgeta et al., 2022; Rostamzadeh et al., 2022) and suggest that while some benefits exist, overall evidence remains inconclusive.

As with previous reviews, CBT-based interventions were not consistently effective. The highest-quality study (Belleville et al., 2018) found no significant improvement in mood symptoms, while Joosten-Weyn Banningh et al. (2008, 2011) reported increased acceptance only. As research suggests that acceptance may moderate negative events and psychological outcomes (Ribeyron et al., 2024), such changes may indicate improved adjustment rather than symptom reduction. Mindfulness-based interventions (Chouinard et al., 2019; Wells et al., 2013) showed no significant results, consistent with Han (2022). Acceptance, a core component of mindfulness, was not measured in these studies. Acceptance and Commitment Therapy is an acceptance- and mindfulness-based approach and given its evidence for efficacy in chronic illness and older adults, it warrants further exploration with PwMCI (Konstantinou et al., 2023; Sun et al., 2025).

Depression is a recognised risk factor for dementia in PwMCI (Cooper et al., 2015; Livingston et al., 2020; Mourao et al., 2016); however, this review found limited evidence that group psychological interventions consistently reduce depressive symptoms. Only two of eight studies reported significant improvements (Lin et al., 2023; Yu et al., 2019), despite most being RCTs, highlighting a gap between the theoretical importance of addressing depression and the limited effectiveness of current approaches.

Among the included studies, reductions in depressive symptoms were reported only in self-empowerment-based interventions (Lin et al., 2023; Yu et al., 2019). Both reported improved depression, and Lin et al. (2023) also found benefits for apathy, anxiety and general neuropsychiatric symptoms. They attributed these outcomes to empowerment elements that may help PwMCI overcome motivational barriers to engagement. Similarly, Yu et al. (2019) emphasised perceived self-control as key to goal attainment. The studies vary in their quality rating on the POMRF, with Lin et al. (2023) scoring as the second highest POMRF score, and Yu et al. (2019) scoring seventh (Table 1).

Lee et al. (2023) self-efficacy enhancement programme, based on Bandura's (1991) theory, did not significantly reduce depression but improved self-efficacy. Although distinct from empowerment, self-efficacy may support coping with diagnostic uncertainty and identity change in PwMCI (Blatchford & Cook, 2022; Gomersall et al., 2015). Given that low self-efficacy and apathy can hinder engagement (Johansson et al., 2015), targeting these factors may improve participation and adherence. Similarly, Barton et al. (2020) reported improved well-being following a Recovery Model group focused on self-concept and identity continuity, although conclusions are limited by the small, single-group pre-test–posttest design ($n = 16$).

This review also examined the influence of intervention format and delivery. No clear association emerged between duration and outcomes: longer programmes (16–20 h) did not produce stronger effects than shorter groups (6–8 h), which showed the broadest range of significant results (Lee et al., 2023; Lin et al., 2023; Yu et al., 2019). The shortest intervention (4 h; Naismith et al., 2019) showed no effect, suggesting duration alone is unlikely to determine effectiveness.

Involving significant others appeared beneficial in some cases. Joosten-Weyn Banningh et al. (2008, 2011) found improved acceptance, and Yu et al. (2019) reported a reduced depression. As outlined by Yu et al. (2019), changes in cognitive function are a challenging life experience, and the relationship between PwMCI and their significant others may shape the adaptation process. However, it is important to consider whether involving significant others with the capacity and capability to engage is possible for all PwMCI.

Clinical implications

This review highlights the need for psychologically informed interventions tailored to PwMCI. While effects on depression and anxiety were limited, improvements in acceptance, self-efficacy, and empowerment were reported more frequently across studies. These outcomes may serve as important intermediate or complementary targets, particularly given that an MCI diagnosis often brings uncertainty and challenges to self-identity, which may limit the effectiveness of traditional symptom-focused approaches such as CBT (Blatchford & Cook, 2022; Carter et al., 2023; Gomersall et al., 2015; Rawlett, 2014). Interventions that emphasise agency and identity within a group context, rather than focusing solely on symptom reduction, may offer additional benefits. Engaging significant others and providing ongoing follow-up support could further enhance sustained participation and adherence (Yu et al., 2019). Due to methodological limitations, including small sample sizes and short follow-up periods, these findings should be interpreted cautiously with respect to clinical application.

Limitations of included studies

The overall quality of studies was low, with an average POMRF score of 19.6/44 (SD = 5.08) (Öst, 2008). Only three out of 10 studies scored above half (Belleville et al., 2018; Chouinard et al., 2019; Lin et al., 2023). Common weaknesses included therapist competence checks, control of concomitant treatments, and the handling of attrition. Seven studies employed a control group, but only two had groups closely matched in therapy hours (i.e. <20% difference) (Belleville et al., 2018; Chouinard et al., 2019). Four studies included follow-up measures, none beyond one year, limiting assessment of long-term effects (Kazdin, 2003). Studies were conducted across seven countries; however, participant ethnicity was not reported, making it unclear whether findings are applicable to ethnically diverse populations (Brijnath et al., 2022).

Limitations and considerations for future research

The POMRF was chosen to assess study quality as it is designed for reviewing psychological intervention studies. However, a lack of standardised scoring limits its comparison with broader literature.

Study heterogeneity in design, intervention models, and outcomes makes firm conclusions difficult. Differences in intervention format, facilitator reporting, and methodological quality prevent direct comparisons and make it unclear whether improvements in mood were due to the intervention itself, involvement of significant others, or follow-up support. Additionally, the lack of medication control across most included studies (item 18 of the POMRF) limits attribution of mood changes to the interventions.

Interpretation of mood outcomes is limited by inconsistent use of clinical cut-offs. While validated measures were used, few studies reported how many participants met thresholds for clinically significant symptoms, making it unclear if interventions addressed clinical or subclinical issues. Only studies specifying MCI diagnostic criteria were included, ensuring validity but excluding other potentially informative studies.

Higher-quality longitudinal research is needed. Future studies should address therapist competence, control of concomitant treatments, attrition management, and include control groups matched for therapy hours. Reporting participant ethnicity is also important to improve generalisability and address underrepresentation of ethnic minorities (Brijnath et al., 2022).

Conclusion

This review examined the effects of group psychological interventions on mood symptoms in PwMCI. The interventions were based on various psychological models, including CBT, self-efficacy theory, self-empowerment, and the Recovery Model (Roberts & Wolfson, 2006). Six of the 10 studies reported significant improvements in at least one mood outcome. Although the overall methodological quality was low, the findings suggest these interventions may improve mood in PwMCI. Further high-quality research is needed to determine the most effective approaches and their long-term benefits.

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Data availability statement

Data sharing is not applicable to this article as no new data were created or analysed in this study.

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APPENDICES

Appendix A: Definitions of diagnostic criteria for mild cognitive impairment

MCI diagnostic framework	Key features
Albert et al. (2011)	• Cognitive concern reflecting a change in cognition reported by patient or informant or clinician (i.e. historical or observed evidence of decline over time). • Objective evidence of Impairment in one or more cognitive domains, typically including memory (i.e. formal or bedside testing to establish level of cognitive function in multiple domains). • Preservation of independence in functional abilities. • Not demented. • Examine aetiology of MCI consistent with AD pathophysiological process. • Rule out vascular, traumatic, medical causes of cognitive decline, where possible. • Provide evidence of longitudinal decline in cognition, when feasible. • Report history consistent with AD genetic factors, where relevant.
Consortium on Alzheimer's Disease Working Group (Portet et al., 2006)	• Cognitive complaint emanating from the patient and/or his/her family. • The patient and/or informant reports a decline in cognitive functioning relative to previous abilities during the past year. • Cognitive disorders evidenced by clinical evaluation: impairment in memory and/or another cognitive domain. • Cognitive impairment does not have major repercussions on daily life. However, the subject may report difficulties concerning complex day-to-day activities. • No dementia.
ICD-10 (World Health Organization, 1992)	• Decline in cognitive performance. This may include memory impairment, learning or concentration difficulties. • Objective tests usually indicate abnormality. • The symptoms are such that a diagnosis of dementia, organic amnesic syndrome or delirium cannot be made. • The disorder can be differentiated from postencephalitic syndrome and postconcussional syndrome by its different aetiology, more restricted range of generally milder symptoms, and usually shorter duration.
Petersen et al. (2014)	• Concern regarding a change in cognition reported by the patient, an informant (family/friend), or a clinician. Often involves memory, but not always • Objective evidence of cognitive impairment as measured on neuropsychological testing. Typically, 1–1.5 standard deviations below age- and education-matched norms • May affect memory and/or other domains (language, executive function, attention, visuospatial skills). • Essentially preserved activities of daily living (ADLs). Independent in basic and instrumental ADLs. May be less efficient or make more errors, but no clear functional dependence. • Cognitive changes are insufficient to meet criteria for dementia.

Winblad et al. (2004)	• Does not meet diagnostic criteria for dementia.
	• Evidence of cognitive decline. A change from a previous level of functioning, based on self-report and/or informant report and/or clinical judgment.
	• Objective cognitive impairment in one or more cognitive domains:
	  • Memory
	  • Executive function
	  • Attention
	  • Language
	  • Visuospatial skills
	• Preserved or only minimally impaired daily functioning. Basic ADLs intact and complex tasks may be slower or less efficient.

Appendix B: Study characteristics table

Study (location)	Sample size	Participant demographics (age and % female[a])	MCI diagnostic criteria	Study design	Intervention	Intervention purpose (improvement of symptoms or preventative)	Conditions	Group size	Treatment length	Analysis time points
Barton et al. (2020) (United Kingdom)	16	Age range: 57–87 Average age: 74.2 56.2% female	ICD-10 (World Health Organization, 1992)	One-group pretest-posttest design	A psychosocial group intervention for PwMCI	Improvement of symptoms	No control condition	4 to 7	8 Sessions, 2 h	Baseline, pre- and post-intervention
Belleville et al. (2018) (Canada)	145	Mean age: 72.1 55.1% female	Petersen et al. (2014)	RCT	Psychosocial group intervention, based on CBT	Improvement of symptoms	Participants were randomised to cognitive training, a psychosocial intervention, or a no-contact control condition.	4 to 5	8 Sessions, 2 h	Pre, 1-week post, 3-month post, and 6-month post intervention
Chouinard et al. (2019) (Canada)	41	Mean age: 71.7 39% were female	Albert et al. (2011)	Pilot study: randomised control trial	Mindfulness-based group intervention	Improvement of symptoms	Participants were randomised to a mindfulness-based group intervention or a psychoeducation-based intervention	12	8 Sessions, 2.5 h	Pre and post intervention
Joosten-Weyn Banningh et al. (2008) (Netherlands)	22 dyads of PwMCI and their significant others	Average age of PwMCI: 68.7 52% of PwMCI were female	Petersen et al. (2014)	One-group pretest-posttest design	CBT group intervention for PwMCI and their significant others	Improvement of symptoms	No control condition	5 to 7 dyads	10 Sessions, 2 h	Pre and post intervention
Joosten-Weyn Banningh et al. (2011) (Netherlands)	93	Mean age of intervention group: 70.5, and control group: 69.4. 47% of the intervention group were female and 53% of the control group were female.	Petersen et al. (2014)	Non-randomised controlled trial	Group intervention based on CBT principles, psychoeducation and memory rehabilitation.	Improvement of symptoms	Non-randomised waitlist control	5 to 8	10 Sessions, 2 h	Baseline, pre-, and post-intervention
Lee et al. (2023) (Korea)	30	Mean age: 72.5 70% female	Petersen et al. (2014)	Equivalent control group pretest-posttest design study	Self-efficacy enhancement group programme	Preventative	Randomly assigned to intervention group or control group (Treatment As Usual; TAU)	4	8 Sessions, 1 h	Pre- and post-intervention, with follow up 2 wk and 4 wk after
Lin et al. (2023) (Hong Kong)	171	Mean age: 69.1 87.7% female	Petersen et al. (2014)	Mixed methods: RCT and descriptive qualitative study	Empowerment-based educative psycho-behavioural program	Improvement of symptoms	Randomly assigned to intervention group, or to a generic health education programme.	6 to 8	5 Sessions, 1.5 h. Followed by 5 follow-up telephone calls over 13 weeks.	Pre-, post-, and 4 wk following intervention
Naismith et al. (2019) (Australia)	35	Mean age: 69.4 63.16% female	Winblad et al. (2004)	RCT	'Sleep Well, Think Well' group programme	Improvement of symptoms	Randomly assigned to intervention group or control group	Up to 10	8 Sessions, 1 h with four fortnightly compliance telephone sessions.	Pre- and post-intervention
Wells et al. (2013) (USA)	14	Mean age: 73 67% female	Petersen et al. (2014)	RCT	Mindfulness Based Stress Reduction (MBSR) group	Improvement of symptoms	Randomised 2:1 to MBSR or usual care	9	8 Sessions, 2 h. Plus, one mindfulness retreat day.	Pre- and post-intervention
Yu et al. (2019) (Hong Kong)	103 MCI patient-carer dyads	Mean age for intervention is 81 and 79 for control 76.9% women for intervention and 84.3% women for control	Consortium on Alzheimer's Disease working Group (Portet et al., 2006)	RCT	Strength-based empowerment program	Improvement of symptoms	Randomly assigned to intervention group or control group (TAU)	12	6 Sessions, 1.5 h, followed by three monitoring telephone calls	Pre-, post-, and 3 months following intervention

[a]Gender is reported as percentage female, reflecting the binary male/female categorisation used in all included studies. No studies reported data on non-binary or other gender identities

Appendix C: The Psychotherapy Outcome Study Methodology Rating Form (POMRF) (Öst, 2008)

1. Clarity of sample description

0. Poor. Vague description of sample (e.g. only mentioned whether patients were diagnosed with the disorder).

1. Fair. Fair description of sample (e.g. mentioned inclusion/exclusion criteria, demographics, etc.).

2. Good. Good description of sample (e.g. mentioned inclusion/exclusion criteria, demographics, and the prevalence of comorbid disorders).

2. Severity/chronicity of the disorder

0. Poor. Severity/chronicity was not reported and/or subsyndromal patients were included in the sample.

1. Fair. All patients met the criteria for the disorder. Sample includes acute (o1 yr) and/or low severity.

2. Good. Sample consisted entirely of chronic (41 yr) patients of at least moderate severity.

3. Representativeness of the sample

0. Poor. Sample is very different from patients seeking treatment for the disorder (e.g. there are excessively strict exclusion criteria).

1. Fair. Sample is somewhat representative of patients seeking treatment for the disorder (e.g. patients were only excluded if they met criteria for other major disorders).

2. Good. Sample is very representative of patients seeking treatment for the disorder (e.g. authors made efforts to ensure representativeness of sample).

4. Reliability of the diagnosis in question

0. Poor. The diagnostic process was not reported, or not assessed with structured interviews by a trained interviewer.

1. Fair. The diagnosis was assessed with structured interview by a trained interviewer.

2. Good. The diagnosis was assessed with structured interview by a trained interviewer and adequate inter-rater reliability was demonstrated (e.g. kappa coefficient).

5. Specificity of outcome measures

0. Poor. Very broad outcome measures, not specific to the disorder (e.g. SCL-90R total score).

1. Fair. Moderately specific outcome measures.

2. Good. Specific outcome measures, such as a measure for each symptom cluster.

6. Reliability and validity of outcome measures

0. Poor. Measures have unknown psychometric properties, or properties that fail to meet current standards of acceptability.

1. Fair. Some, but not all measures have known or adequate psychometric properties.

2. Good. All measures have good psychometric properties. The outcome measures are the best available for the authors' purpose.

7. Use of blind evaluators

0. Poor. Blind assessor was not used (e.g. assessor was the therapist, assessor was not blind to treatment condition, or the authors do not specify).

1. Fair. Blind assessor was used, but no checks were used to assess the blind.

2. Good. Blind assessor was used in correct fashion. Checks were used to assess whether the assessor was aware of treatment condition.

8. Assessor training

0. Poor. Assessor training and accuracy are not specified, or are unacceptable.

1. Fair. Minimum criterion for assessor training is specified (e.g. assessor has had specific training in the use of the outcome measure), but accuracy is not monitored or reported.

2. Good. Minimum criterion of assessor training is specified. Inter-rater reliability was checked, and/or assessment procedures were calibrated during the study to prevent evaluator drift.

9. Assignment to treatment

0. Poor. Biased assignment, e.g. patients selected their own therapy or were assigned in another non-random fashion, or there is only one group.

1. Fair. Random or stratified assignment. There may be some systematic bias but not enough to pose a serious threat to internal validity. There may be therapist by treatment confounds. N may be too small to protect against bias.

2. Good. Random or stratified assignment, and patients are randomly assigned to therapists within condition. When theoretically different treatments are used, each treatment is provided by a large enough number of different therapists. N is large enough to protect against bias.

10. Design

0. Poor. Active treatment vs. WLC, or briefly described TAU.

1. Fair. Active treatment vs. TAU with good description, or placebo condition.

2. Good. Active treatment vs. another previously empirically documented active treatment.

11. Power analysis

0. Poor. No power analysis was made prior to the initiation of the study.

1. Fair. A power analysis based on an estimated effect size was used.

2. Good. A data-informed power analysis was made and the sample size was decided accordingly.

12. Assessment points

0. Poor. Only pre- and post-treatment, or pre- and follow-up.

1. Fair. Pre-, post-, and follow-up o1 year.

2. Good. Pre-, post-, and follow-up X1 year.

13. Manualised, replicable, specific treatment programs

0. Poor. Description of treatment procedure is unclear, and treatment is not based on a publicly available, detailed treatment manual. Patients may be receiving multiple forms of treatment at once in an uncontrolled manner.

1. Fair. Treatment is not designed for the disorder, or description of the treatment is generally clear and based on a publicly available, detailed treatment manual, but there are some ambiguities about the procedure. Patients may have received additional forms of treatment, but this is balanced between groups or otherwise controlled.

2. Good. Treatment is designed for the disorder. A detailed treatment manual is available, and/or treatment is explained in sufficient detail for replication. No ambiguities about the treatment procedure. Patients receive only the treatment in question.

14. Number of therapists

0. Poor. Only one therapist, that is, complete confounding between therapy and therapist.

1. Fair. At least two therapists, but the effect of therapist on outcome is not analyzed.

2. Good. Three, or more therapists, and the effect of therapist on outcome is analyzed.

15. Therapist training/experience

0. Poor. Very limited clinical experience of the treatment and/or disorder (e.g. students).

1. Fair. Some clinical experience of the treatment and/or disorder.

2. Good. Long clinical experience of the treatment and the disorder (e.g. practicing therapists).

16. Checks for treatment adherence

0. Poor. No checks were made to assure that the intervention was consistent with protocol.

1. Fair. Some checks were made (e.g. assessed a proportion of therapy tapes).

2. Good. Frequent checks were made (e.g. weekly supervision of each session using a detailed rating form).

17. Checks for therapist competence

0. Poor. No checks were made to assure that the intervention was delivered competently.

1. Fair. Some checks were made (e.g. assessed a proportion of therapy tapes).

2. Good. Frequent checks were made (e.g. weekly supervision of each session using a detailed rating form).

18. Control of concomitant treatments (e.g. medications)

0. Poor. No attempt to control for concomitant treatments, or no information about concomitant treatments provided. Patients may have been receiving other forms of treatment in addition to the study treatment.

1. Fair. Asked patients to keep medications stable and/or to discontinue other psychological therapies during the treatment.

2. Good. Ensured that patients did not receive any other treatments (medical or psychological) during the study.

19. Handling of attrition

0. Poor. Proportions of attrition are not described, or described but no dropout analysis is performed.

1. Fair. Proportions of attrition are described, and dropout analysis or intent-to-treat analysis is performed.

2. Good. No attrition, or proportions of attrition are described, dropout analysis is performed, and results are presented as intent-to-treat analysis.

20. Statistical analyses and presentation of results

0. Poor. Inadequate statistical methods are used and/or data are not fully presented.

1. Fair. Adequate statistical methods are used but data are not fully presented.

2. Good. Adequate statistical methods are used and data are presented with M and SD.

21. Clinical significance

0. Poor. No presentation of clinical significance was done.

1. Fair. An arbitrary criterion for clinical significance was used and the conditions were compared regarding percent clinically improved.

2. Good. Jacobson's criteria for clinical significance were used and presented for a selection (or all) of the outcome measures, and conditions were compared regarding percent clinically improved.

22. Equality of therapy hours (for non-WLC designs only)

1. Fair. Conditions differ somewhat (10–19% difference in therapy hours).

2. Good. Conditions do not differ (o10% difference in therapy hours).

Appendix D: The psychotherapy outcome study methodology rating form ratings

	POMRF question and score																						
Study	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	Total score
Barton et al. (2020	1	1	2	0	1	0	0	0	0	0	0	0	1	1	2	0	1	0	0	1	0	0	11
Belleville et al. (2018	2	1	2	0	2	1	1	1	2	2	1	1	2	1	2	0	0	0	1	2	1	2	27
Chouinard et al. (2019)	2	1	2	0	2	0	0	1	1	2	0	0	2	2	2	1	0	1	0	2	1	2	24
Joosten-Weyn Banningh et al. (2008)	2	1	2	2	2	0	0	1	0	0	0	0	1	1	2	0	1	0	0	2	1	0	17
Joosten-Weyn Banningh et al. (2011)	2	1	2	2	2	0	0	1	0	0	2	0	2	1	2	0	1	0	1	1	1	0	21
Lee et al. (2023)	1	1	2	1	1	2	0	0	2	0	2	1	2	0	1	1	0	0	0	2	1	0	20
Lin et al. (2023)	2	1	2	1	2	2	1	0	2	1	1	1	2	0	2	1	0	0	2	2	1	0	26
Naismith et al. (2019)	1	1	2	2	1	0	1	1	2	1	0	0	1	0	2	1	0	1	0	2	1	0	20
Wells et al. (2013)	0	1	2	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	1	2	1	0	12
Yu et al. (2019)	1	1	2	0	1	2	0	0	2	0	2	1	1	0	1	0	0	0	1	2	1	0	18

POMRF three-point rating scale: 0 = poor, 1 = fair, 2 = good.