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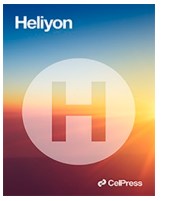

Review article

The engagement of psychology with complementary medicine: A critical integrative review

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ABSTRACT

Amidst the global rise in complementary medicine (CM) use for mental health, a substantial number of clients consulting a psychologist also utilise at least one form of CM. Yet, how psychologists *should* engage with CM in their clinical practice (e.g., how to respond to a client disclosing CM use or enquiries regarding CM products or services for mental health) remains contested and unclear. In response, a systematic integrative review was conducted to examine empirical literature reporting on one or more aspects of the relationship between psychology (incorporating clinical practice, professional associations and academia) and CM, and how that relationship may relate to or inform psychologists' engagement with CM in their clinical practice. Twenty-seven peer-reviewed articles met the specific inclusion criteria and quality appraisal was employed. Analysis shows a substantial number of psychologists are engaging with, or are interested in engaging with, CM in their clinical practice. Analysis identified a dissonance between psychologists' engagement with CM in clinical practice and the limited engagement of the broader discipline of psychology with CM. Further research is required to understand these differing types of engagement with a view to helping inform relevant policy and practice guidelines, and ultimately assist psychologists in navigating CM in their clinical practice.

Globally, psychologists are likely to encounter clients who are using at least one form of complementary medicine (CM), including over the counter vitamin and mineral supplements, herbal medicines, traditional medicines, yoga, aromatherapy, meditation and massage [1–5]. For the purpose of this review, CM (also referred to as complementary and alternative medicine [CAM]) includes a broad range of health care products, services and practices, that are "not part of a country's own traditions or conventional medicine and are not fully integrated into the dominant health care system" [[6], 2019, p. 1]. Products, services and practices included within definitions of CM vary, as they are dependent on how CM is culturally, socially and politically positioned [7–9]. In addition, some CM practices such as meditation and mindfulness are now more widely accepted by psychologists and integrated into their practice, yet they have not traditionally been considered a component of psychology [10–12].

CM use for mental health is substantial. Reported utilisation of CM amongst those with mental health problems (e.g., participants self-reporting a mental health diagnosis in last 12 months) ranges from 0.7 to 89 % [2,9,13–15]. Although there is large variation in these prevalence rates (due to CM definitions and inclusion criteria adopted and the population studied in each study), a preference for CM amongst people living with mental health problems is consistent across regions, such as Ireland, Netherlands, Saudi Arabia and the US [16–19]. A study at various Saudi Arabian hospitals found 82.2 % of inpatients with mental health problems reported using at least

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one type of CM within the last 12 months to treat their mental health problems [18]. Similarly, a study led by Jong found 75 % of patients attending mental health care centres were using some form of CM [17]. Research has found that CM use also varies across different mental health problems, with chronic pain, anxiety and depression symptoms found to be significant predictors of specific types of CM use [16,20,21]. Given that CM use (including CM products, practices and practitioner visits) is high among people with mental health problems, psychologists are likely to consult with clients using some form of CM for the treatment of their mental health problems and/or comorbid physical health issues [20,22–24]. Indeed, one Swedish study found 67 % of participants, who were patients accessing psychiatric services and psychologists, reported use of CM in some form to treat their symptoms such as anxiety, sleep disturbances and depression [24]. CM treatments used by people experiencing mental health problems may be recommended by a CM practitioner, other health professional or through self-selection and self-management [2,25,26].

There are barriers and risks associated with CM use in health care settings [27]. One example is the risk associated with concurrent use of CM and psychopharmacological treatments [28] - some herbal medicines used for mental health problems, such as *Hypericum perforatum* (St John's wort), can potentiate the effects of selective serotonin reuptake inhibitors creating greater risk of serotonin syndrome [20,23,28]. Also, the substantial rates of CM non-disclosure to health care providers by patients exacerbates many of the clinical risks around CM use, including negative impact on clinical outcomes, patient safety, and the therapeutic relationship [29–32]. There are also risks associated with interpreting CM research, including varying definitions of CM, participant bias toward CM, researcher bias toward CM, undisclosed conflict of interest, and selection bias in systematic reviews [33,34]. Moreover, some research has identified adverse outcomes associated with CM practices previously considered benign, such as meditation [35] and yoga [36].

There are specific CM interventions that show promise for mental health problems. For example, research has demonstrated the efficacy of yoga to address stress symptoms [37], early psychosis [38], anxiety [39], depression [40], and eating disorders [41]. There is also strong evidence for the herb St John's wort in treating mild to moderate depression [42,43]. Evidence also supports the adjunctive use of nutraceuticals such as N-acetyl cysteine with antidepressants for depression [44] and with standard treatments for schizophrenia [45]. A pharmacoepidemiologic study also found folic acid to be beneficial in terms of lowering rates of suicide attempts [46]. Nutritional interventions (e.g., Mediterranean diet, vitamin and mineral supplements) have also gained empirical support for the prevention and treatment of depression [47–53]. So much so, that the field of nutritional psychiatry is an emerging paradigm that is a core consideration for mental health prevention and treatment [32,54–58]. This emerging evidence-base suggests some CM treatments may have a role in helping to address mental health problems.

In response to consumer demand and increased evidence for some CM, the integration of CM into primary health care and health disciplines has increased [59–61]. This increase in CM integration is also likely influenced by the World Health Organisation (WHO) Traditional Medicine Strategy, which states that given CM has the "potential to improve individual health, its proper integration into national health systems will enable consumers to have a wider choice when they wish to use such services" [62, p. 37]. A range of integrative relationships with CM within primary health care and health disciplines has emerged (including the direct integrative application of CM approaches by a conventional health care professional, conversations about CM between a client and their conventional healthcare professional, and the introduction of concepts of mind-body connection and related ideas into conventional clinical practice) [62]. CM integration has occurred in mental health settings internationally [17,31,63]. It must be noted that integrative psychology is here taken to refer to psychology that includes CM. Psychiatry and general medicine now include some CM in their practices, education, journals and clinical practice guidelines to treat mental health problems [64–67]. Despite other health and mental health professions incorporating CM [66,68–71], there appears to be little consideration of CM within psychology. It is unclear how psychology (as a discipline) and psychologists (as practitioners) are engaging with CM.

How psychology engages with CM may be an important consideration for psychologists in clinical practice. For example, should a client disclose CM use it would be important for a psychologist to effectively gather and assess information about the client's CM use to understand any potential herb-drug interactions with relevant prescribed medications. Client safety may be at risk if a psychologist is unable to elicit information and/or discuss and understand the implications of their clients' CM use. This is relevant as psychologists in many regions are required to have sound knowledge of psychopharmacology [72,73]. Navigating client CM use may also require cultural sensitivity as some cultures utilise CM more than others [74–76]. Importantly, broader research shows conventional health professionals who are informed in CM are likely to be effective in identifying and communicating with clients regarding any potential risks that may be associated with CM use, thereby helping maintain client safety [8,19,24,77–79]. There also appears to be other benefits for clients when their conventional health professional is informed about CM, including broader treatment choices, facilitating a preventative and whole person approach to mental health care, and improving client mental health outcomes [61,80]. Specific benefits to psychology may include: additional therapeutic potential of an integrative approach, strengthened therapeutic alliance through understanding a client's CM use, promotion of client autonomy and choice, research opportunities, addressing national mental health care goals, improving public health and mental health outcomes, and alignment with other advances in mental health care and WHO policy [8,81,82–85].

Given the high prevalence of CM use among mental health consumers, the increasing evidence-base for CM, and the engagement of other health professions with CM, a greater understanding of how the discipline of psychology and psychologists engage with CM is required. In direct response to these circumstances, this paper reports the results of the first integrative review examining the contemporary and potential relationship between psychology and CM.

1. Introduction

An integrative review was undertaken to gain insight into the current landscape, across qualitative and quantitative studies, of psychology's engagement with CM. A review protocol was registered with the International Prospective Register of Systematic

Reviews (PROSPERO; Registration Number 142972) and reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA; [86]). The integrative review was also conducted in accordance with the Joanna Briggs Institute (JBI) Manual for Evidence methodology for mixed methods systematic reviews (MMSR) [87].

1.1. Selection criteria

This review aimed to examine psychology's relationship with CM, using empirical data (e.g., psychologists surveyed about attitudes toward CM) relevant to this broad aim. Literature reporting new empirical data reporting on one or more aspects of the relationship between psychology (incorporating clinical practice, professional associations and academia) and CM, and how that relationship may relate to or inform psychologists' engagement with CM in their clinical practice was identified. Commentaries, editorials and letters to the editor were excluded from the review in addition, due to the non-efficacy focus of this review, any literature reporting randomised control trials, efficacy of CM, or efficacy of CM integrated with psychology, was also not included.

1.2. Search strategy

A systematic process was used to identify articles reporting new empirical data relating to the relationship between the field of psychology (as described by psychologists) and CM, to understand if there is engagement between the two fields. A database search was conducted by the first author (CT) in May 2023. Search criteria were applied to the following databases for articles published from 1989 to 2023: MEDLINE, CINAHL, PsycINFO, Allied and Complementary Medicine Database, and EMBASE. The searches began with truncated Psychology (Psycholog*) and Complementary Therapies (MeSH term) including traditional medicine, complementary medicine, alternative medicine, and integrative medicine (see search terms in Appendix A). Additional search terms such as natural, holistic and functional medicine and therapies, were included to capture a range of specific modalities and treatments included within CM (see Appendix A). Specific modalities such as yoga or aromatherapy, were not included as search terms due to the extensive number of individual CMs that would have to be included to cover all possible products, services and practices. After the databases were searched, references were imported into Endnote 20 referencing software [88]. Duplicates were removed and reference lists of included articles checked for additional relevant studies. Articles were then uploaded into Covidence for screening. Only articles published in peer-reviewed journals were included on the premise that these publications had been screened and had met reporting standards.

1.3. Inclusion and exclusion

Titles and abstracts were screened (CT) according to the inclusion and exclusion criteria (see Appendix B). As an MMSR, included studies were quantitative, qualitative, and mixed methods studies relating to psychologist engagement with CM. Conference abstracts, case reports, case series, editorials, and letters were excluded. Included articles reported psychologists' perspectives regarding CM, issues related to psychologists adopting CM in some form into practice (e.g., clinical decision making, referral process, ethics, risks, ethical guidelines, practice and policy guidelines, education) and psychologists' experiences of working with clients combining CM and psychology. All full texts were then screened (CT) according to the eligibility criteria. To increase robustness of the findings, the other two authors (EM, JA) were randomly allocated 50 % of the articles each to review to determine eligibility. Articles were excluded if they did not explicitly discuss the discipline or practice of psychology as a distinct profession or psychologists as individual professionals and CM. For example, an article may have discussed CM engagement of a broad range of health professionals, however the data for psychologists was unable to be identified or extracted separately [89]. One article described the current guideline and policy environment of CM in Australia [90] however the article was excluded as the data provided did not relate to the relationship between the field of CM and psychology, as described by psychologists. Articles were also excluded if they were reporting the efficacy of a CM service or product to treat mental health or were clinical trials of CM treatments for mental health problems (including comparison trials with psychological treatment or psychotherapy).

1.4. Quality assessment

Following systematic selection of included articles, a quality appraisal was completed for each article in Covidence systematic review software (www.covidence.org). The quality of each study was assessed using the mixed methods appraisal tool (MMAT; [91]). Articles were also assessed using two additional items created by the authors aimed to assess risk of bias; were the papers critical and/or balanced in regard to psychology's engagement with CM, and whether the article acknowledged and/or addressed risk of bias. For these two questions a Yes/Yes score represented acceptable/low risk of bias and No/No represented an unacceptable risk of bias toward/against psychology's engagement toward CM. Studies were excluded where three or less of the five MMAT items were attained and/or No/No for bias [92]. Any disagreement on the quality of an article was discussed with all authors (CT, EM, JA) to reach agreement on subsequent inclusion/exclusion. Of the 30 articles that underwent appraisal three were excluded as low quality. The results of the quality assessment are presented in Appendix C.

As recommended by Braun and Clarke [93–96] the authors of this paper discussed potential bias in selecting and appraising articles for inclusion, and measures to avoid, or limit, any undue influence on the research process and outcomes. This included each author providing a justification for their decision to include or exclude each article. At the time of review both EM and JA were academics at the Australian Research Consortium in Complementary and Integrative Medicine. CT was a registered and endorsed clinical

psychologist with an interest in evidence-based CM as part of integrative mental health care. CT was also a Convener of an interest group "Psychology and Integrative Mental Health". JA was also Convenor of the Special Interest Group (SIG) "Complementary Medicine - Evidence, Research & Policy" at the Public Health Association Australia and EM is a member of this SIG. Both CT and EM held professional membership of the Naturopaths and Herbalists Association of Australia. EM previously practiced as a CM practitioner. All authors have used CM in some form for their health and wellbeing.

1.5. Data extraction and synthesis

Following systematic selection of articles and quality appraisal an inductive thematic analysis and synthesis were undertaken to elicit common elements and themes across the method, results, discussion, and conclusion sections of included articles [95].

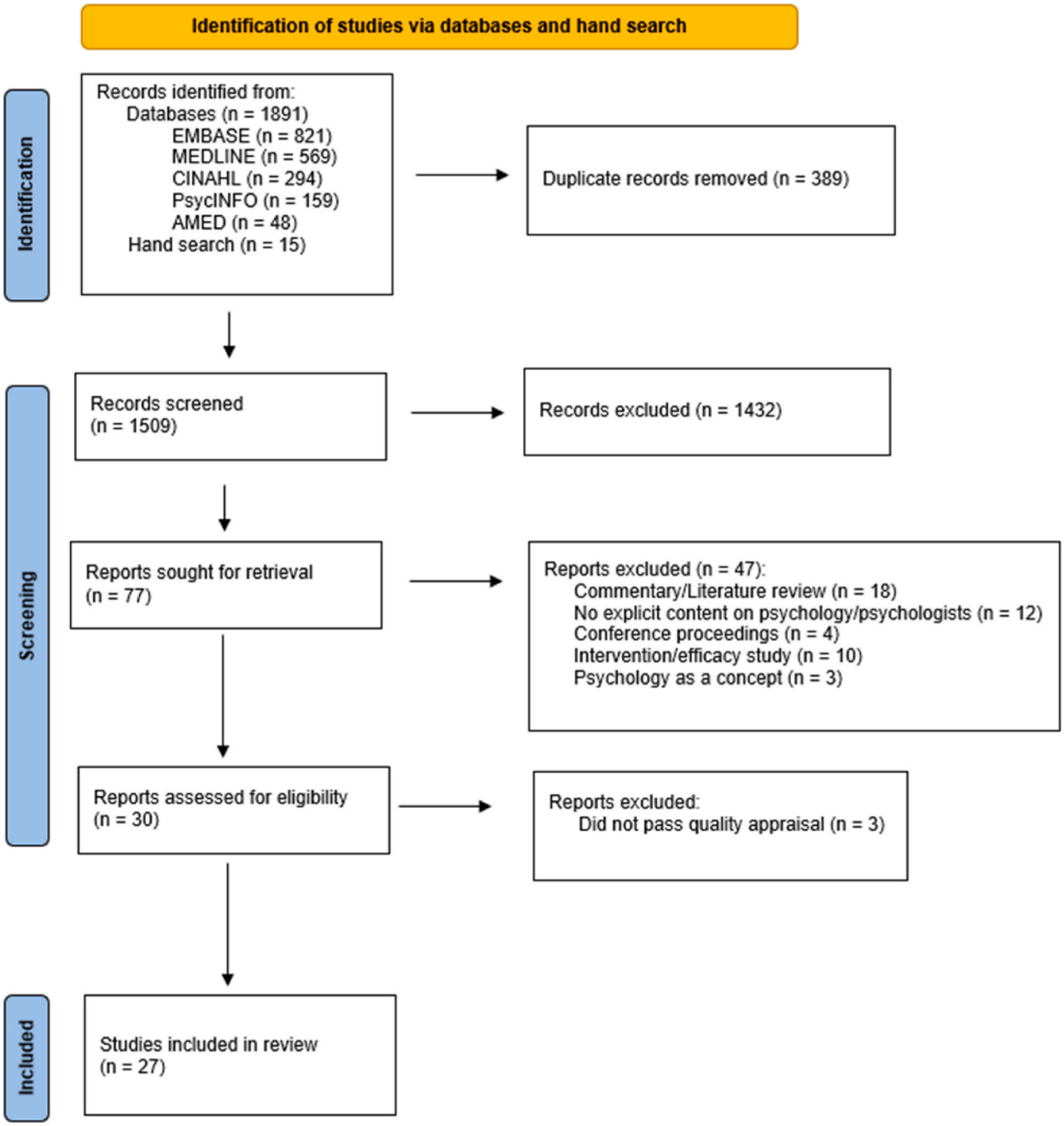

Fig. 1. Flow diagram of data extraction and synthesis.

Table 1
Descriptive qualities of included manuscripts (in chronological order).

Study	Author (Year) Location	Method/Design	Population	Type of CM	Relevant findings/summary
1	Crowe-Salazar (2007) Canada	Qualitative/Interviews	N = 3 Indigenous Elder, a psychiatrist, and a psychologist	Traditional healing practices in mental health	Importance of traditional values and traditional medicines in treating mental health in Indigenous communities.
2	Ditte et al. (2011) Germany	Quantitative/Survey	N = 388 333 medical and 55 psychology students	CM broadly in context of psychology practice	Differential acceptance levels of CM among medical and psychology students, with both groups described as reluctant to integrate.
3	Wilson & White (2011) Australia	Qualitative/Interviews	N = 12 practising psychologists and psychology students	CM broadly in context of psychology practice	Theory of planned behaviour to examine intention to integrate CM. Limited guidelines propose risk and barriers to CM.
4	Wilson et al. (2011) Australia	Quantitative/Survey	N = 122 clinical psychologists	CM broadly in context of psychology practice	Psychologists are interested in CM, but aware that integration challenges and risks.
5	McKenzie et al. (2012) Australia	Mixed methods/ Survey with qualitative and quantitative responses	N = 212 91 1st year medical students, 49 2nd year medical students, 31 psychology students	Mindfulness in the context of mental health	Psychology students more knowledgeable and more likely to integrative mindfulness into their practice because they believe in a bidirectional relationship between mind and body.
6	Wilson et al. (2012a) Australia	Quantitative/Survey	N = 106 psychology students	CM broadly in context of psychology practice	Psychologists are willing to integrate CM Barriers include lack of knowledge, lack of scientific evidence, and absence guidelines are perceived barriers.
7	Wilson et al. (2012b) Australia	Quantitative/Survey	N = 106 psychology students	CM broadly in context of psychology practice	Psychology students are interested in CM in their future practice. Barriers include disapproval from peers or regulatory body.
8	Wilson et al. (2013) Australia	Quantitative/Survey	N = 122 clinical psychologists	CM broadly in context of psychology practice	Psychologists more comfortable providing CM recommendations an referring to CM practitioners.
9	Stapleton et al. (2015) Australia	Quantitative/Survey	N = 193 psychologists	CM broadly in context of psychology practice	Psychologists engage in CM training and integrating CM into their practice.
10	Fay et al. (2016) Hungary	Quantitative/Survey	N = 418 psychology students	Expressive therapies (e.g., creative, art, drama, music, writing)	Psychologists interested and open toward CM and further education in CM.
11	Hamilton & Marietti (2017) Australia	Qualitative/Interview	N = 18 11 registered and 7 provisionally registered psychologists	CM broadly in context of psychology practice	Psychologists interested in CM.
12	Liem & Newcombe (2017) Indonesia	Quantitative/Survey	N = 44 Provisional Master of clinical psychology students	CM broadly in context of psychology practice	Psychologists have low CM knowledge and want to learn more. Psychologists are recommending, referring, and applying CM.
13	Liem & Rahmawati (2017) Indonesia	Qualitative/Interview	N = 22 Psychologists and psychology lecturers	CM broadly in context of psychology practice	Variability among psychologist's understanding of CM terms and practices.
14	Ligorio & Lyons (2017) Australia	Quantitative/Survey	N = 240 professional and academic psychologists.	CM broadly in context of psychology practice	Professional psychologists held more positive attitudes toward CM than academic psychologists.
15	Liem (2018) Indonesia	Mixed methods/ Interview and survey	Phase 1 N = 274 Phase 2 N = 9 Psychologists and psychology students	CM broadly in context of psychology practice	More than half of the psychologists had recommended, referred and/or applied CM.
16	Liem (2019a) Indonesia	Quantitative/Survey	N = 247 psychologists	CM broadly in context of psychology practice	Lack of guidelines contributes to uncertainty around CM. Psychologists believed CM education to be relevant and important.
17	Liem (2019b) Indonesia	Qualitative/Interview	N = 43 Clinical psychologists in public health	CM broadly in context of psychology practice	Mixed beliefs and attitudes among psychologists toward CM. Psychologists had recommended, referred and/or applied CM.
18	Liem (2019c) Indonesia	Qualitative/Open ended survey questions	N = 127 Clinical psychologists	CM broadly in context of psychology practice	Psychologists are interested and willing to engage with CM research and education.
19	Liem (2019d) Indonesia	Qualitative/Interview	N = 43 Clinical psychologists in public health	CM broadly in context of psychology practice	Variability among psychologist's understanding of CM terms and practices. Psychologists believed CM education to be relevant and important.

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Table 1 (*continued*)

Study	Author (Year) Location	Method/Design	Population	Type of CM	Relevant findings/summary
20	Liem & Newcombe (2019a) Indonesia	Quantitative/Survey	N = 318 Clinical psychologists	CM broadly in context of psychology practice	Psychologists had positive attitudes toward building CM knowledge.
21	Liem & Newcombe (2019b) Indonesia	Quantitative/Survey	N = 274 Clinical psychologists	CM broadly in context of psychology practice	Psychologists had positive attitudes toward CM. Psychologists are interested in combining CM with their clinical practice.
22	Medieros et al. (2019) Brazil	Quantitative/Survey	512 students from 9 university health courses including 59 students of psychology	CM broadly in context of health modalities	CM knowledge was significantly associated the psychology, however psychology students had the lowest knowledge. Psychology only health course where CM was absent from course content.
23	Kassis and Papps (2020) Australia	Qualitative/Interview	N = 6 psychologists who also have CM training	CM broadly in context of psychology practice	Psychologists are interested in integrating CM into their practice. Barriers include lack of guidelines on CM integration.
24	Liem (2020) Indonesia	Qualitative/Interview	N = 43 Clinical psychologists		Psychologists are integrating CM into different practice settings. Importance of CM as part of cultural sensitivity.
25	Morkl et al. (2021) Austria	Quantitative/Survey	N = 1056, 354 psychiatrists, 511 psychologists, 44 psychotherapists, and 147 MHPs in-training	Nutritional psychiatry	Approximately 65 % of psychologists recommended dietary approaches or dietary supplements. 66.3 % of psychologists also reported having no training in nutrition.
26	Nayda et al. (2021) Australia	Quantitative/Survey	N = 60 psychologists working with children	Nutrition	98 % of psychologists believe diet is relevant mental health but scored lower on nutrition competence and nutrition communication and counselling.
27	Thomson-Casey et al. (2023) Australia	Quantitative/Survey	N = 202 psychologists	CM broadly in context of psychology practice	Psychologists recommend CM products and practices and/or refer clients to CM practitioners

Quantitative data (results) were qualitised (author textual descriptions and summations of data) [87,97] and synthesised along with qualitative data. Each article was organised into a spreadsheet to capture information. Analysis initially focused on open coding to identify themes, and a subsequent review of articles used codes that were both expected (e.g., concern about efficacy of CM) and relevant to the research question (e.g., descriptions of relationship with CM). Once broad themes were identified, and categorised, each article was re-read to see how often it had a "hit" with each of the codes. Supporting text (both qualitised and qualitative) was also collected to support theme categorisation. The iterative process continued with re-reading the articles to refine and confirm codes and categories. This synthesis allowed the development of descriptive themes that provide an overall summary of findings [95]. Themes and sub themes were reviewed by EM and JA. Following this, triangulation of each author's (CT, EM, JA) interpretation of the themes was conducted, and the final themes were determined by consensus. Articles that were excluded due to low quality were checked to ensure sensitivity of identified themes.

2. Results

2.1. Search results

The initial literature search returned 1883 articles with 389 duplicates deleted. An additional 15 articles were identified from hand searches. After reviewing 1509 titles and abstracts a further 1432 articles were deemed ineligible using the eligibility criteria. Following a full-text review of the eligible articles, 77 met the criteria, with 47 excluded. The remaining 30 articles were subjected to an in-depth review and appraisal with a further three articles excluded. The PRISMA flow diagram outlining the article selection process is shown in Fig. 1.

2.2. Author and geographical characteristics

Of the 27 included articles 15 were written by the same two first authors with 10 and five publications each. The countries of origin for the papers, based on the geographic location of the participants (or origin of highest proportion of participants if multi-national paper), were predominantly from Australia (n = 12) and Indonesia (n = 10), and the remaining articles were one each from Austria, Brazil, Canada, Germany, and Hungary. The articles were quantitative analysis (n = 15), qualitative (n = 9), and mixed methods (n = 2) approaches. Most studies had a higher proportion of female participants except one [98], which reflects the gender profile of the profession in Western regions [99,100]. A third of the of the studies (n = 9) included student participants. Studies that included the attitudes of participants who were students and/or academics in psychology tertiary programs (i.e., non-clinical roles),

will be referred to as psychologists throughout this paper. A summary of included manuscripts is provided in Table 1.

2.3. Extent to which psychologists are engaging with CM

Prevalence rates varied across the reviewed literature for psychologists interested in integrating CM in some form into their practice, dependent on the specific research aims and methodologies employed. Studies reported 70–85 % of psychologists were willing to integrate CM and had positive attitudes toward CM [101,102]. Morkl et al. [103], reported 92.9 % of Austrian psychologists in their study were interested in learning more about CM for mental health. Similarly, 39.3 % of Indonesian psychologists in Liem's study [104] wanted to study CM treatments relevant to mental health. Nayda et al. [105], reported 98 % of Australian psychologists in their study perceive CM approaches, such as nutritional psychiatry, as relevant to psychologists. Stapleton and colleagues [106] reported 64 % of participant psychologists had trained in some form of CM. Prevalence rates for psychologists already integrating CM into their practice, also varied across the reviewed literature. Liem & Newcombe [107] reported the highest rate of psychologists recommending (83 %) and referring (52 %) to CM among Indonesian psychologists. Similar rates of recommending CM were found among Australian (69 %) and Austrian (64.5 %) psychologists [103,108]. Psychologists were also reported to be directly applying CM themselves as part of their own clinical practice with their clients in Austria (65.6 %) and Indonesia (65.7 %) [103,104,107]. Qualitative studies from Australia also reported participant psychologists were interested in and already engaging with a range of CM approaches with their clients including herbal medicine, massage, meditation, naturopathy, nutrition, and yoga [78,109–111].

2.4. Synthesis of themes

All papers report a potential, or existing, relationship between psychologists and CM as described through psychologists' different types of engagement or planned engagement (in the case of psychology students), with some form of CM in their clinical practice. Engagement was identified from the analyses as the unifying concept that relates to the different types of engagement psychologists have with CM in the context of clinical practice. Three themes were identified from the central unifying concept of engagement; how psychologists are engaging with CM, why psychologists engage with CM, and why psychologists do not engage, or limit engagement, with CM. An overall synopsis of themes and subthemes from included papers is outlined in Table 2.

Table 2
Integrated categorisation of identified themes, subthemes and supportive text.

Theme	Subtheme	Example quote from participant psychologists	Frequency (%)
How psychologists engage with CM	Apply	"I think that psychologists that are armed with a second specialty can provide a unique service to their clients" (Kassis & Papps, 2020, p.5)	15 (55.5 %)
	Recommend	"For new clients [parents of a child with autism] I usually inform them of some alternative treatments like acupuncture and acupressure. … But it is not recommending. Just sharing what I know and other clients' testimonies." (Liem 2019b, p.6)	16 (59.2 %)
	Refer	"… you would know the quality of the person you are referring to." (Wilson & White, 2011, p.237)	15 (55.5 %)
	Discuss	"I don't tell clients what to do, so if they are expressing an interest in something I will discuss it with them but I would not talk them out of it …" (Hamilton & Marietti, 2017, p.107)	11 (40.7 %)
Why are psychologists engaging with CM	Provide a holistic/ integrative approach	"Psychology was just that one part … and often that is not enough. I think you need to look at people more holistically and have various strategies to help them deal with the mental health issue or whatever it is that they are dealing with." (Kassis & Papps, 2020, p.5)	14 (51.8 %)
	Cultural relevance	"Some areas seem to make more sense to involve traditional healing and other areas will require more thought and attention." (Crowe-Salazar, 2007, p.90)	7 (25.9 %)
	Client centred/preference	"… guidelines of working in clinical work, quite clearly on one hand [are the] experiences of evidence based practice, the other is to understand the client and the context of their lives." (Crowe-Salazar, 2007, p. 91)	5 (18.5 %)
Why are psychologists engaging with CM	Lack of education/ training	"I feel like psychologists don't get enough direction about it [CAM], it would be useful, definitely if there was a workshop about it and how it could be integrated in practice, I will be signing up for it" (Hamilton & Marietti, 2017, p.108)	14 (51.8 %)
	Lack of guidelines	"Well, a lot of psychologists themselves would be quite keen but are working within strict guidelines." (Wilson & White, 2011, p.238)	13 (48.1 %)
	Far of negative appraisal by peers	"I think if I used CAM in the clinic I don't think that people would have liked it … if I had done yoga with someone I think that my supervisor would have looked at my video and asked me 'what are you doing" (Hamilton & Marietti, 2017, p.108)	9 (33.3 %)
	Uncertainty about efficacy of CM	"Certainly there is a message from the science that CAM is lacking evidence, but a lot of people are drawn into it" (Hamilton & Marietti, 2017, p.107)	29.6 %)

2.5. How psychologists are engaging with CM

All papers report some psychologists as engaging, or open to engaging with CM in some form or another. In the context of this review, engagement refers to a psychologist in some way explicitly including or introducing CM as part of client assessment and/or treatment planning/application. Such engagement can be categorised via four subthemes—*discuss*, *recommend, refer*, and *apply*—that reflect the CM engagement types reported in the different papers, with some papers reporting more than one type.

The *discuss* sub-theme refers to findings directly reporting the extent to which psychologists currently (and in some cases would in the future) communicate about CM with their clients. The *recommend* sub-theme refers to findings directly reporting the extent to which psychologists are already recommending, or are interested in recommending, CM in some form to their clients. The *refer* sub-theme relates to findings and/or descriptions of psychologists referring, or expressing interest in referring, their clients to suitable, qualified CM practitioners (e.g., traditional Chinese medicine practitioner). Finally, the sub-theme *apply* refers to reported findings or descriptions within the literature identifying direct integrative practice [112]. Direct integrative practice included interest in, or the provision of, CM treatments and services delivered directly by psychologists to their clients (e.g., using a secondary qualification as a nutritionist to prescribe evidence-based dietary interventions for depression).

Eleven articles suggested psychologists should at least be open to and/or be able to discuss CM use with their clients. Several of the articles report that psychologists have an ethical responsibility to be informed about all known treatment paths, including CM, and failure to pass this knowledge on to clients may be considered substandard care and a patient safety risk [e.g., 79; 113]. Sixteen articles reported psychologists as recommending CM to their clients (e.g., [106,111,113–116]). Fifteen articles discussed psychologists referring to CM practitioners [e.g., 117–120] and a similar number of articles (n = 15) reported psychologists as already applying CM as part of their own clinical practice offered to clients (e.g., [106,109,117]). These findings have been organised into a frame of reference to describe the four types of engagement (i.e., discuss, recommend, refer, and apply) a psychologist might have with CM in clinical practice (Appendix D).

2.6. Why are psychologists engaging with CM?

Participant psychologists from the included studies identified several reasons for their engagement with CM as part of their clinical practice. Their motivations for engaging with CM predominantly related to a holistic approach toward client care (n = 14) and acknowledging cultural relevance of CM (n = 7). Client centred care/client preference (n = 5) was also highlighted as an important reason for engaging with CM. For example, an author summary in a qualitative study states "… psychologists will prioritise and value the therapeutic alliance over and above psychological interventions, including CAM" [79, p.109].

2.7. Why are psychologist not engaging or limiting their engagement with CM?

Another theme from our analyses of the literature related to why psychologists might be reluctant to engage with CM. Lack of education and training to develop knowledge of CM, in the context of psychology practice, was identified (n = 15) as a major barrier to engagement. Several articles (n = 4) report outcomes where psychologists recommend that all psychologists should have some training in CM [74,77,109,118]; other included empirical articles (n = 3) suggest psychology is lagging behind medical and other health professional education programs in terms of the inclusion of relevant CM in their training programs [78,118,119].

Another reported major barrier to psychologists' engagement with CM is a lack of relevant policy and/or guidelines available (n = 13) from psychology's professional and regulatory agencies to specifically inform the engagement of psychologists with CM in their clinical practice [e.g., 79, 106, 109, 117, 121]. Psychologists in the included studies identified risks associated with CM engagement. Fear of negative appraisal by their peers (n = 9) was the most common concern reported by psychologists for why they were limiting or reluctant to engage with CM as well as uncertainty about the efficacy of CM (n = 8). Three articles reported psychologists as: concerned that engaging with CM would put the profession's standing at risk; sceptical about the quality of some CM practitioners; and concerned with epistemological issues and perceived clashes between psychology and CM [74,78].

3. Discussion

This review identified more than half of the participant psychologists in the reviewed articles, in several jurisdictions around the world, as engaging with CM in their clinical practice. This result is consistent with wider health professional engagement with CM internationally [120]. Not only are psychologists interested in CM for mental health, but they are also already engaging with CM in some form as part of their clinical practice, including psychologists directly applying CM approaches as part of their client's treatment. Wider research shows psychologists and psychiatrists, seek to identify novel, accessible and alternative mental health treatments for their clients, including CM as an adjunctive health care approach [84,121,122–124]. This substantial level of psychologist engagement with CM (further highlighted by our review findings) has significant implications for policy and guidelines, and the conventional scope of practice for psychologists. For example, what level of education in CM would constitute competency for a psychologist to engage with CM as part of treatment planning with clients. This finding also provides a solid platform for future research to explore psychology engagement with CM in more detail focusing upon such areas as: the features of CM skills psychologists are acquiring and the processes and channels through which these skills are being acquired; how to inform guidelines for the integration of CM into clinical practice; and the ways in which psychologists manage risks and patient safety when engaging with CM, as part of their clients' treatments.

Our review also identifies four distinct ways in which psychologists engage with CM in some form (e.g., CM products, practices

and/or practitioners) in their clinical practice (see Appendix D). The types of engagement identified are: discussion, recommendation, referral, and the direct application of CM in clinical practice. Importantly, these types of CM engagement also link to specific, and in most cases different, considerations regarding education, professional registration, ethics and insurance. These types also appear to align in general terms with a range of integrative models as identified with reference to other health professionals and settings [125,126] and have wider implications for the politics of health professional identity and territory (especially with reference to conventional and CM providers) [126]. Differentiating these types of CM engagement within psychology also helps the discipline and profession of psychology to develop bespoke education and guideline material well suited to the particulars of CM integration occurring at the grassroots of psychology clinical practice.

The findings of our review suggest the reasons why some psychologists are integrating CM, in some form, into their clinical practice is to respond to consumer preference for holistic approaches, and to acknowledge the cultural relevance of some forms of CM for some clients. These client-centred reasons for psychologists engaging with CM is consistent with other research examining broader health practitioner (e.g., nurses, medical specialists, physicians) engagement with CM [120,127,128]. Further, the finding that psychologists want to engage with CM, and participate in relevant education in CM, as reported in the reviewed literature, is also consistent with broader research investigating the engagement with CM amongst other health professionals (e.g., psychiatrists) [129–131]. Our review found psychologists, in line with other health professionals, acknowledge the importance of engaging with their client's CM use and collaborating with other relevant health care providers regarding CM, especially as a means of enhancing the therapeutic relationship in the context of client preference and cultural relevance [65,132–136].

None of the reviewed empirical articles report psychologists explicitly objecting to, or rejecting, psychologist engagement with CM. However, some of the articles included in this review note that there are reasons why psychologists do not engage, or limit their engagement, with CM. For example, participant psychologists reported the two main reasons why they may not engage with CM is: limited CM relevant education; and limited CM relevant guidelines from associations, policy makers and educators within psychology. This lack of CM relevant education and guidelines appears to occur despite consumer demand for CM [17,20,90,137], psychologists' interest in CM [78,101,108,115,138,139] and the small but growing evidence to support some CM as effective treatment for specific mental health problems or as adjuncts to psychological treatments [41,140,141]. The lack of engagement with CM by psychology in the context of education and practice guidelines does not appear to be empirically supported within the literature reviewed. However, this may be due to a number of possible factors including psychology (as a discipline) underestimating the interest in CM amongst the grass-roots of the profession or an indifference to CM on behalf of dominant sections within the profession and discipline.

Psychologists in the included empirical studies, expressed confusion around what they perceive to be the wider disciplinary view of psychology regarding what is acceptable engagement with CM, especially with regards to psychologists in clinical practice. This confusion is described as a barrier to psychologist engagement with CM and may be due to conflicting views about CM presented in both CM and psychology journals. For example, some commentaries in the wider literature encourage psychologist engagement with CM [77,83,142] and empirical studies discuss the benefits of combining psychological therapies with CM [51,141,143]. However, other commentaries describe psychologists' use of CM as "treacherous", a "gamble" and "potentially deadly" [144]. Given the plethora of diversity of reactions and viewpoints to CM engagement it is important that the discipline and profession of psychology clarify a position with regard to relevant practice policy and research.

In addition to the lack of CM-relevant education and guidelines, and confusion around what is acceptable engagement with CM, psychologists in the included studies also reported fear of negative appraisal from their psychologist peers as a barrier to their potential engagement with CM in clinical practice. This fear of negative appraisal may also be driven by negative commentaries described above. For example, Fasce and Adrián-Ventura [145] describe psychologists' engagement with CM, and other psychotherapies including trauma-focused approaches, as an illustration of psychologists' "resistance to evidence-based practice" and engaging in "potentially harmful practice" [144, p. 4]. This fear of negative appraisal for engaging with CM in clinical practice has also been identified across other health professions, such as nursing and medicine [127,146]. There is no shortage of published commentaries that are critical of CM in the broader literature outside of psychology [147–149]. Yet, we found no empirical data at the grass roots explicitly supporting the exclusion of CM from psychology practice. Meanwhile, our review suggests possible risk of client harm due to the prolonged disconnection between psychology and CM. Psychologists are already engaging with consumer demand for CM, as illustrated in their grassroots practice and behaviours which still lack support or guidance in relevant policy and education.

Our findings suggest the grass-roots practice engagement psychologists have with CM is not reflected in the actions and perspectives of the rest of the wider psychology discipline and profession. The findings of our review are mirrored in wider research reporting other health professionals, including doctors and psychiatrists, as having insufficient professional association education and resources on CM, potentially increasing client risk [25,34,150–154]. Both the studies included in our review and the wider literature report health professionals across different geographical jurisdictions (e.g., Indonesia, Austria) as well as different ethnocultural client groups (e.g., American Indian, Aboriginal and Torres Strait Islander Peoples) as raising concern about the lack of education and guidelines for mental health professionals on relevant CM [74,83,98,114,134,155–157]. All articles in this review recommend that psychologists be able to *at least* discuss CM with their clients. CM-informed psychologists are in a unique position to provide psychoeducation around CM use to their clients and provide adequate informed consent, answer questions about efficacy, risks, benefits, and interactions and play an important role in helping coordinate clients' interdisciplinary care.

3.1. Strengths and limitations

Our novel, in-depth analysis of existing literature is not without limitations. It is inherent in the research question that there may be a response bias in the empirical studies reported in the review. However, the critical appraisal tool aimed to reduce the impact of bias

on the outcomes of this study. A further limitation of this review is only English language articles were included.

3.2. Recommendations for future research

Further research is required to examine a range of pertinent issues regarding CM relevant to psychology practice and the wider discipline of psychology. As some psychologists in clinical practice are interested in, and already integrating CM, it is important to further explore and understand a range of pertinent areas of enquiry including: the prevalence of CM integration in the clinical practice of psychologists; the perspectives of psychologists on how CM benefits their clients; and the decision-making of psychologists around, and justification for, including CM in their clinical practice. Further research should also aim to map the interface between psychologists' engagement with CM in their practice and the wider development of CM-psychology relevant policy, education, and research.

4. Conclusion

The findings from this review suggest that CM already has a role in the practice of a substantial number of psychologists. More pressing is the issue that some psychologists already engaging with their clients' CM use, or incorporating CM into their treatment planning, in some form, are doing so without guidance from the wider psychology profession or discipline. Psychology as a discipline is yet to take a clear position on what role CM may have for psychologists in clinical practice, and if relevant, to provide guidelines on CM for psychologists. Without guidance from the wider psychology profession there remains risk to client safety, the therapeutic relationship, and effective collaborative care. In line with WHO policy and other mental health professions, it is important for psychology to further explore and define the role of CM in the field's professional project and to help develop relevant guidance for clinicians on this growing area of health care seeking and provision.

Author note

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Author contribution statement

All authors listed have significantly contributed to the development and the writing of this article.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A

Appendix A
Search terms used in the systematic review

Search term categories	Search terms
Psychology in title AND abstract	(Psycholog*) Psychology, Psychologist, Psychological
Complementary Medicine in title OR abstract	Complementary Therapies (MeSH term): Complementary and Alternative Medicine, OR Complementary and Alternative Therapy, OR Complementary and Alternative Therapies, OR Complementary Medicine, OR Complementary Therapy, OR Complementary Therapies, OR Alternative Medicine, OR Alternative Therapy, OR Alternative Therapies, OR Natural Medicine, OR Natural Therapy, OR Natural Therapies, OR Traditional Medicine, OR Integrative Medicine, OR Functional Medicine, OR Holistic medicine
CM modalities in title OR abstract	Naturopathy (Naturopath*), OR Nutrition (Nutrition*), OR Herbalism (Herbal*), OR Chiropractic (Chiropract*), OR Osteopathy (Osteopath*), OR Massage, OR Traditional Chinese Medicine, OR Homeopathy (Homeopath*), OR Ayurvedic medicine

Appendix B
Inclusion and exclusion criteria for systematic review

Inclusion Criteria	Exclusion Criteria
Articles that discuss interdisciplinary relationship between psychology and CM	Articles that focus on Therapist, Therapy, Counsellor, Counselling, Psychotherapist, Psychiatry, Psychiatrist without discussion on psychology as a discipline
Articles that discuss psychologists' attitudes to CM	Articles that focus on CM as an adjunct to Therapist, Therapy, Counsellor, Counselling, Psychotherapist, Psychotherapy, Psychiatry, Psychiatrist without discussion on psychology as a discipline

(*continued on next page*)

Appendix B (*continued*)

Inclusion Criteria	Exclusion Criteria
Articles that discuss psychologists' experiences of CM (including personally, education, professionally) Articles that discuss psychologists' (individuals and groups) philosophical, ethical, political, and clinical stance regarding CM	Articles that do not discuss issues related to clinical decision making in psychology practice (such as treatment selection, clinical decision making, ethics). Efficacy and effectiveness studies of CM modality/treatments applied to mental health conditions. Comparison studies of CM modality/treatment vs psychological approach/treatment Studies not available in full text or in English

Appendix C

Author (date)	Screening		Qualitative					Quantitative (descriptive)					Mixed Methods					Bias	
Bassman & Uellendahl (2003) *	✓	✓						✓	✓	✓	✓	X						No	No
Crowe-Salazar (2007)	✓	✓	✓	✓	✓	✓	✓											Yes	No
Wilson & White (2007) *	✓	✓						✓	✓	✓	X	✓						No	No
Ditte et al. (2011)	✓	✓						✓	✓	✓	✓	✓						Yes	No
Wilson & White (2011)	✓	✓	✓	✓	✓	✓	✓											No	No
Wilson et al. (2011)	✓	✓						✓	✓	✓	–	✓						Yes	Yes
McKenzie et al. (2012)	✓	✓											✓	✓	–	✓	X	No	Yes
Wilson et al. (2012a)	✓	✓						✓	✓	✓	–	✓						Yes	No
Wilson et al. (2012b)	✓	✓						✓	✓	✓	–	✓						Yes	Yes
Wilson et al. (2013)	✓	✓						✓	✓	✓	✓	✓						Yes	Yes
Stapleton et al. (2015)	✓	✓						✓	✓	✓	–	✓						Yes	No
Fay et al. (2016)	✓	✓						✓	✓	✓	✓	✓						Yes	Yes
Hamilton & Marietti (2017)	✓	✓						✓	✓	✓	✓	✓						Yes	Yes
Liem & Newcombe (2017)	✓	✓						✓	✓	✓	–	✓						Yes	No
Liem & Rahmawati (2017)	✓	✓						✓	✓	✓	✓	✓						Yes	No
Ligorio & Lyons (2018)	✓	✓						✓	✓	✓	X	✓						Yes	Yes
Liem (2018)	✓	✓											✓	✓	✓	✓	✓	Yes	No
Liem (2019a)	✓	✓						✓	✓	✓	–	✓						Yes	No
Liem (2019b)	✓	✓	✓	✓	✓	✓	✓											Yes	Yes
Liem (2019c)	✓	✓	✓	–	✓	✓	✓											Yes	Yes
Liem (2019d)	✓	✓	✓	✓	✓	✓	✓											Yes	Yes
Liem & Newcombe (2019a)	✓	✓						✓	✓	✓	✓	✓						Yes	Yes
Liem & Newcombe (2019b)	✓	✓						✓	✓	✓	✓	✓						Yes	No
Medeiros et al. (2019)	✓	✓						✓	✓	✓	✓	✓						Yes	No
Kassis & Papps (2020)	✓	✓						✓	✓	✓	✓	–						Yes	No
Kralj & Kardum (2020) *	✓	✓						✓	✓	✓	X	✓						No	No
Liem (2020)	✓	✓						✓	✓	✓	✓	✓						Yes	No
Morkl et al. (2021)	✓	✓						✓	✓	✓	✓	✓						Yes	Yes
Nayda et al. (2021)	✓	✓						✓	X	✓	✓	✓						No	Yes
Thomson-Casey et al. (2023)	✓	✓						✓	✓	✓	✓	✓						Yes	Yes

Outcome of quality appraisal.
* = excluded.

Appendix D

Summary of the types of CM integration used by psychologists and examples

Types	Type of integration	Example
Discuss	Interactions/side effects/potential benefits	St John's wort contraindicated with some antidepressants
Recommend	Recommend a CM service/product	Recommending a client attend a yoga class for relaxation and social connection
Refer	Referral to licensed/registered CM practitioner	Referring a client to a Naturopath for evidence-based herbal approaches for depression
Apply	Acceptable/assimilated CM	Guiding a client through meditation
	With informal/additional certification	Guiding a client through hypnosis
	With dual qualifications (separate license/ registration)	Providing evidence-based nutrition/dietary improvement recommendations to improve mood/ behavioural activation

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