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REVIEW ARTICLE

Communities of practice in residential aged care: A rapid review

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Abstract

Background: Communities of practice (CoPs) have the potential to help address the residential aged care system's need for continuing education and quality improvement. CoPs have been used in healthcare to improve clinical practice; however, little is known about their application to the unique residential aged care context.

Objectives: This rapid review of CoPs for residential aged care was conducted to summarise the features of CoPs, how they are developed and maintained, and assess their effectiveness.

Methods: MEDLINE and CINAHL databases were searched for studies published from January 1991 to November 2022 about CoPs in residential aged care. Data were extracted regarding the CoPs' three key features of 'domain', 'community' and 'practice' as described by Wenger and colleagues. Kirkpatrick's four levels of evaluation (members' reactions, learning, behaviour and results) was used to examine studies on the effectiveness of CoPs. The Mixed Methods Appraisal Tool was used for quality appraisal.

Results: Nineteen articles reported on 13 residential aged care CoPs. Most CoPs aimed to improve care quality ($n=9$, 69%) while others aimed to educate members ($n=3$, 23%). Membership was often multidisciplinary ($n=8$, 62%), and interactions were in-person ($n=6$, 46%), online ($n=3$, 23%) or both ($n=4$, 31%). Some CoPs were developed with the aid of a planning group ($n=4$, 31%) or as part of a larger collaborative ($n=4$, 31%), and were maintained using a facilitator (n=7, 54%) or adapted to member feedback ($n=2$, 15%). Thirteen (81%) studies evaluated members' reactions, and three (24%) studies assessed members' behaviour. The heterogeneity of studies and levels of reporting made it difficult to synthesise findings.

Conclusions: This review revealed the variation in why, and how, CoPs have been used in residential aged care, which is consistent with previous reviews of CoPs in healthcare. While these findings can inform the development of CoPs in this

context, further research is needed to understand how CoPs, including the membership makeup, delivery mode, facilitator type and frequency of meetings, impact quality of care.

KEYWORDS
communities of practice, nursing homes, rapid review, residential aged care

1 | INTRODUCTION

In 2020–2021 Australia's residential aged care (RAC) sector provided 24-h care and accommodation to over 243,000 older people who were unable to live independently at home (Commonwealth of Australia, 2021). With the number of Australians aged 85 years and over predicted to increase from 515,700 (2.0% of the population) in 2018–2019 to more than 1.5 million (3.7%) by 2058 (Commonwealth of Australia, 2021) there will likely be increasing demands on the RAC sector.

The Royal Commission into Aged Care Quality and Safety final report released in 2021 revealed widespread reports of substandard care (Pagone & Briggs, 2021). It identified not only inadequate staffing levels, but also the underpaid and underskilled workforce, as contributing to poor quality care. In response, improvements in workforce continuing education were recommended (Pagone & Briggs, 2021). While Australia has some of the most rigorous training requirements for frontline aged care workers (such as personal care workers and enrolled nurses), like many other countries there are no continuing education requirements (OECD & European Union, 2013). The report also highlighted that to provide high quality and safe care, there is a need for continuous improvement and innovation that is evidence-based and implemented into everyday practice. Communities of practice (CoPs) have the potential to help address the continuing education and continuous improvement needs of the RAC sector, to provide professional development opportunities and promote quality improvement activities.

CoPs were first described by Lave and Wenger in 1991 as a model of apprenticeship whereby legitimate peripheral participation of novices gradually progresses to a community where practitioners of different skill levels learn from one another (Lave & Wenger, 1991). Initial ethnographic studies of Yucatec midwives in Mexico, and Liberian tailors, among others, revealed that practitioners learn through the sharing and creation of knowledge during regular social interactions in the context of their practice (Lave & Wenger, 1991). CoP theory gradually shifted from this description of informal CoPs to how CoPs could be formally developed by organisations as a tool for innovation and problem solving (Li et al., 2009a). Wenger and colleagues described the three key features of a CoP as its domain, community and practice (Figure 1) (Wenger, 1998).

Research into the existence and utility of CoPs in healthcare is an expanding area. There have been an increasing number of studies both of existing groups that were identified as informal CoPs and of formal CoPs that were created by an organisation for a specific

Implications for Practice

What does this research add to existing knowledge in gerontology?

- This paper summarises how CoPs have been developed and maintained in residential aged care to improve care quality and educate aged care workers.
- The studies included in this review show how the key features of a CoP 'domain', 'community' and 'practice' can be operationalised in residential aged care.
- This paper reports on various evaluations of CoPs in aged care. Only three studies have assessed whether CoPs actually improve practice in these settings and only three have assessed benefits to residents.

What are the implications of this new knowledge for nursing care with older people?

- While CoPs in residential aged care have the potential to improve quality of care, it is unclear which key features of CoPs contribute to their success.
- CoPs developed for nurses working in residential aged care can provide peer support and increase confidence in their professional identity, however, challenges such as lack of time due to competing clinical demands can affect participation.

How could the findings be used to influence policy or practice or research or education?

- These findings can inform the development and maintenance of new CoPs in residential aged care, which can provide continuing education to nurses and other residential aged care workers.
- This review highlights the need for future research to identify the specific features of CoPs in residential aged care that make them more effective in enhancing the quality of care.
- Future research would also benefit from a standardised definition of CoP and development of a checklist to ensure consistent reporting of the key features.

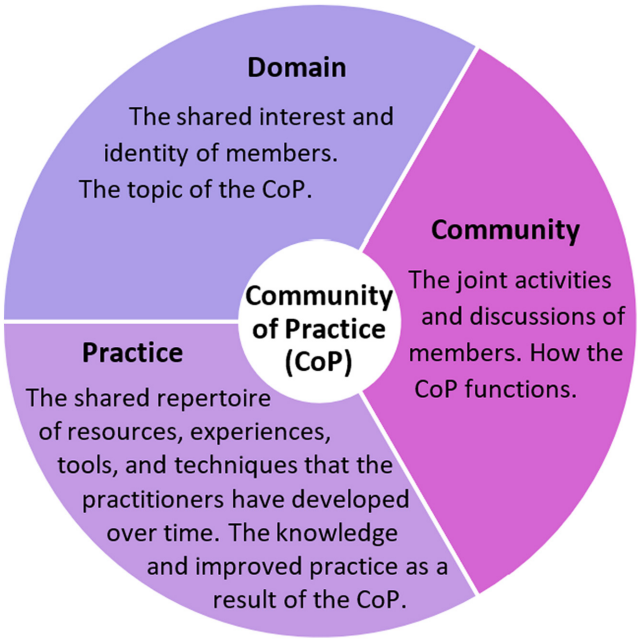

FIGURE 1 Three key features of a Community of Practice (Li et al., 2009a; Wenger et al., 2002; Wenger-Trayner & Wenger-Trayner, 2015).

purpose (Li et al., 2009b; Ranmuthugala et al., 2010). The CoPs described in the literature vary in structure, in part because the literature lacks a consistent definition of the CoP concept (Li et al., 2009b). CoPs have been used in healthcare for training students and for continuing professional development focusing on information creation, information sharing, improving the quality of care and identity development. Previous systematic reviews on CoPs in healthcare have predominantly been from the hospital and primary care settings and shown there is limited research on evaluation of the impact of CoPs (Li et al., 2009b; Ranmuthugala et al., 2011).

This review sought to synthesise the literature on CoPs in RAC, and address the following research aims:

- To summarise the key features (domain, community and practice) of CoPs in residential aged care.
- To describe how RAC CoPs are developed and maintained.
- To assess the effectiveness of the RAC CoPs in terms of participants' reactions, learnings, behaviour and resident/clinical outcomes.

2 | MATERIALS AND METHODS

This review was registered on PROSPERO (CRD42022335725) (Tropea et al., 2022). It was guided by the Cochrane rapid review methodology (Garritty et al., 2021) and has been reported in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) 2020 guideline (Page et al., 2021). This rapid review was part of IMMERSE (IMpleMenting Effective infection prevention and control in Residential aged carE) a larger implementation science project on infection prevention and control in residential aged care (Tropea et al., 2023). A rapid review approach was chosen to provide information for the IMMERSE project in a timely manner, working within the project timeline and available resources. The findings from this rapid review will be used to inform and guide development of a community of practice for RAC infection prevention and control (IPC) lead nurses. IPC lead nurses in RAC is a relatively new strategy mandated by the Australian government to increase IPC capacity, knowledge and skills in RAC in response to the COVID-19 pandemic (Australian Government Department of Health and Aged Care, 2023). This review aimed to synthesise CoP literature to assist other researchers and healthcare professionals to develop and maintain a CoP.

2.1 | Eligibility

Inclusion criteria were peer-reviewed studies about a CoP published in the English language in 1991 or later, following the seminal publication by Lave and Wenger (Lave & Wenger, 1991). The CoP had to include RAC workers as members. Articles were excluded if the CoP was composed of only students. Other exclusion criteria were any reviews, opinion pieces, conference proceedings or grey literature.

2.2 | Information sources and search strategy

MEDLINE (Ovid) and CINAHL (EBSCO*host*) were searched for articles that reported on CoPs in RAC. The search was limited to these two databases as these were perceived to be the most important ones for literature in residential aged care. Limiting the search to a few key databases is in line with the rapid review approach. Our search strategy (Appendix S1) is outlined as: (community of practice) AND (residential aged care), including subject terms and synonyms. The search was designed with the support of a librarian and The Systematic Review Accelerator (Clark et al., 2020). Manual citation searching was conducted for additional relevant articles. The search was run on 27 November 2022.

2.3 | Selection process

Resulting articles were screened against title and abstract, followed by full text review. This was performed independently by two reviewers using Covidence (Covidence systematic review software, n.d.), with conflicts resolved by discussion with a third reviewer.

2.4 | Data extraction and synthesis

Data extraction was conducted by one reviewer using Covidence and verified by a second reviewer. A data extraction form was developed within Covidence based on our research questions and

Wenger's three key features of a CoP: domain, community and practice (Figure 1). The data extraction form collected the following information: the CoP name, aim, country, years active, RAC setting, membership, interactions, how the CoP was developed and maintained, activities performed and resources produced. For the evaluation studies the study design, research methods, sampling methods, sample and key findings were extracted. Data were then exported into Excel for further descriptive analysis.

Statistical pooling of quantitative findings for meta-analysis and meta-synthesis of qualitative studies was not possible due to the heterogeneity of interventions, methods and outcomes used. CoP features and evaluation studies were described narratively with descriptive statistics. For each evaluation study, Kirkpatrick's levels of learning evaluation (Box 1) have been presented (Kirkpatrick & Kirkpatrick, 2006). Missing data was noted.

2.5 | Quality appraisal

Quality appraisal of studies that included measures of evaluation was conducted by one reviewer using the Mixed Methods Appraisal Tool (MMAT), version 2018 (Hong, Pluye, et al., 2018), with full verification of all judgements (and support statements) by a second reviewer. The MMAT was designed and validated for use in reviews of qualitative, quantitative and mixed methods studies (Hong, Fàbregues, et al., 2018; Pace et al., 2012), and was chosen due to the diversity in the included study designs. The MMAT appraises methodological quality by evaluating five criteria specific to the study design, or 15 for a mixed methods study (quantitative component, qualitative component and mixed methods integration). To best understand the state of the literature of CoPs in RAC the MMAT results have been presented based on their rating for the relevant criteria ('yes', 'no' or 'cannot tell'), without summary scores which are discouraged (Hong, Fàbregues, et al., 2018).

BOX 1 Kirkpatrick's four levels for evaluating training programs (Kirkpatrick & Kirkpatrick, 2006).

Level 1: Reaction. Participant response to and satisfaction with the training.
Level 2: Learning. Demonstrated change in attitudes, knowledge or skills.
Level 3: Behaviour. Changes in participant practice, applying what they have learned.
Level 4: Results. Changes in outcomes. Includes improved quality, benefits to patients, improved clinical outcomes and cost benefits.

3 | RESULTS

Figure 2 summarises the study selection process. The initial search identified 126 articles, 34 of which were removed as duplicates. Following title-abstract review, 24 articles proceeded to full text review. One article was added through manual citation searching. Five articles were excluded and the remaining 19 articles, that reported on 13 CoP projects, were included in the review.

All articles had been published since 2005 and fourteen (74%) published since 2015. Four of the CoP projects were conducted in the UK, three in Australia, three in Canada, one covering both the USA and Canada, one in Norway and one in the Netherlands. Seven (54%) of the CoPs exclusively focused on the RAC context, whereas six (46%) CoPs included care of older people in RAC in addition to other healthcare environments such as hospitals.

There was variability in the level of detail about the CoPs presented in the articles. In some cases, multiple articles described

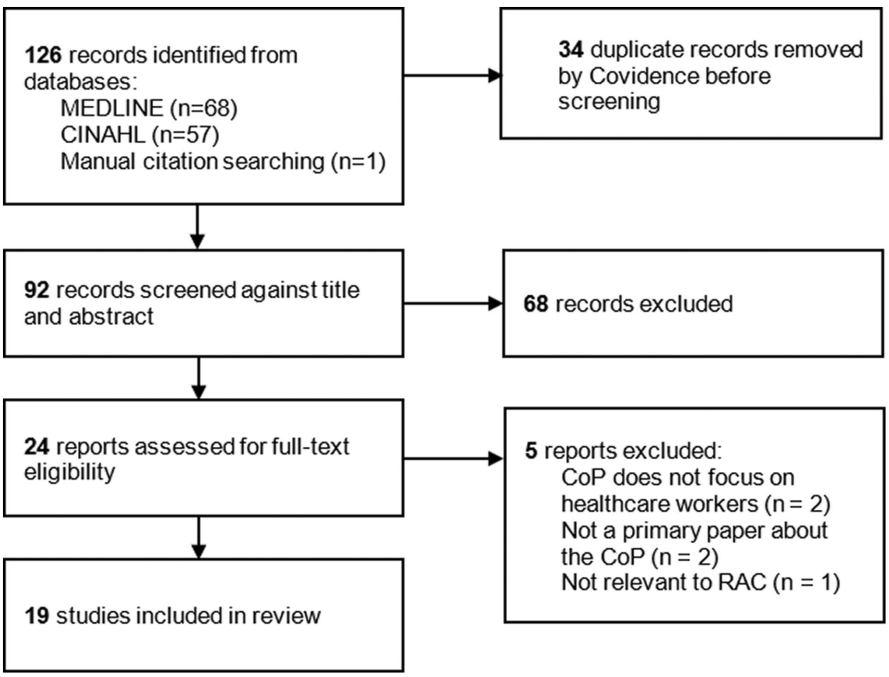

FIGURE 2 PRISMA flow diagram outlining study selection (Page et al., 2021).

different aspects of the same CoP, and have been described together in Table 1. Chambers et al. (2010) provides an overview of 12 CoPs within the Seniors Health Research Transfer Network (SHRTN), with minimal information about any one CoP.

3.1 | Features of CoPs for RAC workers and how they were established and maintained

The features of the 13 CoPs, including how they were established and maintained, are summarised in Table 1 and described in more detail below.

3.1.1 | Domain

Aims

CoPs reported in RAC covered multiple different objectives. A common aim was to improve the quality of care in a specific area ($n=9$, 69%), often focusing on putting evidence into practice. These included falls prevention (Francis-Coad et al., 2017b), reducing hospital admissions (Hullick et al., 2021) and pain management (Hirdes et al., 2020). Three CoPs (23%) aimed to educate members about a topic, such as palliative care (Manson et al., 2021). One CoP (8%) aimed to develop education materials and deliver teaching sessions to RAC workers who were portrayed as the audience rather than members of the CoP themselves (Kothari et al., 2015).

Membership

The PERFORM KT (Knowledge Translation of Performance Data for Frontline Nurses and Leaders Initiative) included members from one RAC facility (Jeffs et al., 2016), four CoPs (31%) included members from multiple RAC facilities but did not specify the exact number, and the eight remaining CoPs (62%) included members from multiple RAC facilities ranging from five to 68.

Eight (62%) CoPs described the multidisciplinary membership, including managers, nurses, personal or skilled care workers, allied health, ancillary staff and medical interns. Project ECHO for nursing homes was the only CoP to include RAC kitchen staff and administrators (Manson et al., 2021). Nurses were highly represented and included in the membership of nine (69%) CoPs, while three (23%) CoPs were comprised only of care managers (senior nursing role) and nurses. Two CoPs (15%) consisted of members who worked outside the RAC setting, these included academics, librarians, educators, students and informal carers (Chambers et al., 2010; Hirdes et al., 2020). The profession or role of RAC members was not specified for two CoPs (Jeffs et al., 2016; Kothari et al., 2015). Overall, there was inconsistency in the level of detail of how membership was reported, with seven CoPs (54%) not including specific numbers of members for each role.

The sizes of the CoPs varied, four of the CoPs (31%) had between 10 and 30 members, whereas others reached up to 121 members ($n=4$, 31%). Five did not specify their size (38%), likely the largest of which was the Aged Care Emergency (ACE) program which was progressively rolled out across a health district in New South Wales, Australia, and included members from nine hospital emergency departments and 81 RAC facilities (Hullick et al., 2021).

3.1.2 | Community

Interactions

Members interacted through a combination of in-person and online formats. Ten CoPs (77%) included an in-person element, five of these (38%) interacted solely through scheduled in-person meetings, and one consisted of informal in-person interactions at the RAC facility. Four CoPs (31%) supplemented these with online or telephone membership interaction, whereas three others (23%) were hosted entirely online (virtual communities of practice). Some CoPs ($n=3$, 23%) included asynchronous discussion within an organisation's intranet or an online practice development college (Francis-Coad et al., 2017a; Tolson et al., 2005, 2008).

Four CoPs (31%) interacted in smaller groups, such as the Peer Enablement Program of 91–121 members, in which each individual workshop session had 12–20 members at a time (du Toit et al., 2020). The frequency of interactions varied greatly, from averaging weekly online engagement (Tolson et al., 2008) or fortnightly sessions (Manson et al., 2021), to biannual meetings (Hirdes et al., 2020).

3.1.2.2 | *Development and maintenance*

There were a variety of methods used to establish and maintain the CoPs. Seven CoPs (54%) had a facilitator to help with members' interaction and CoP functioning, either assigned to the group or a pre-existing member that was trained for the role. Four CoPs (31%) had a form of administrative support, such as a stakeholder steering committee for logistical development (Francis-Coad et al., 2017a). Two (15%) regularly reviewed the progress of the CoP to assess how it could be improved, and two CoPs (15%) took members' feedback into consideration when establishing and maintaining the project. Three CoPs (23%) involved an expert in the topic area, such as the Scottish Gerontological Nursing Demonstration Project which recruited a dietician to provide advice on their development of an evidence-based best practice statement on nutrition (Booth et al., 2007). Other strategies included piloting the program before larger rollout ($n=2$, 15%), learning modules ($n=1$) and financial support for release time ($n=1$).

Four (31%) of the CoPs were developed as part of a larger collaborative. The Scottish Gerontological Nursing Demonstration Project evolved into the Caledonian Development Model, a Scottish model for CoP development in RAC (Tolson et al., 2011). The Seniors Health Knowledge Network (SHKN) evolved from the SHRTN and promotes CoPs in Ontario, Canada through logistical, librarian and collaborative support (Chambers et al., 2010; Kothari et al., 2015). The Project Extension for Community Healthcare Outcomes (ECHO) in Nursing Homes (Manson et al., 2021) used an established hub-and-spoke model for continuing education whereby expert 'hubs' are connected to local practitioner 'spokes' through interactive teleconferencing.

TABLE 1 Features of communities of practice in residential aged care ($n = 13$).

Reference CoP name Country	Domain		Community		Practice	
	CoP aim, shared interest	Membership	Interaction	CoP development and maintenance	CoP activities	Resources developed
Chambers et al. (2010) Various SHRTN CoPs Canada	• 12 province-wide CoPs aiming to improve the health of older adults through knowledge transfer and translation • Examples include the Alzheimer's Knowledge Exchange and the Continence Care CoP	• 70% of CoP members are paid aged care workers. Other members include researchers, policy makers, librarians, educators, students and unpaid caregivers	• 43% in-person meetings, the remainder by internet	• A CoP lead guides the process, and members determine priorities • Supported by SHRTN knowledge brokers	• Interactive engagement activities, including knowledge-transfer events	• Examples include clinical decision-making tools, best practice guidelines, policies, presentations and training modules
du Toit et al. (2020) Peer Enablement Program Australia	• To promote person-centred dementia care	• Care managers and nurses ($n = 91$–121, workshop sizes of 12–20). ($n = 91$–121, workshop sizes of 12–20) • Nine RAC facilities	• Three two-day in-person workshops	• Nine dementia care specialists were trained as workshop facilitators, who prepared with online meetings	• Applied the group person-centred problem solving model to their workplace	• Not stated
Fosse et al. (2017) An informal end-of-life care CoP Norway	• End-of-life care in RAC	• Intern doctors, nurses. (n = not stated) • RAC facilities in one county (n = not stated)	• Not stated	• Informal CoP	• Not stated	• Not stated
Francis-Coad et al. (2017b) Francis-Coad et al. (2017a) Francis-Coad, Etherton-Beer, et al. (2018) Francis-Coad, Haines, et al. (2018) A falls prevention CoP Australia	• Falls prevention in RAC	• Nurses ($n = 4$), care managers ($n = 4$) and allied health professionals ($n = 12$) • 13 RAC facilities within a single organisation	• Online discussion using the organisation's intranet • Eight face-to-face meetings over 2 years	• A member was trained to be CoP facilitator • Continued adaptation of the CoP based on member feedback • Stakeholder steering committee for logistical development of the CoP • Follow-up of members who were not participating in the online discussion	• Education of GPs of the evidence base of vitamin D supplementation in RAC • Falls prevention education strategies (program consisting of training, checklists and posters) • Tailored resident falls prevention plans • Falls prevention agenda item at staff meetings • Addressing environmental falls risks • Interdisciplinary discussion about falls prevention	• Falls prevention clinical audit data and resulting specific recommendations • Training document for the web-based discussion board • Collection of relevant articles on the intranet • Standardised fall definition for reporting • Development of a falls prevention policy and risk assessment tool
Hirdes et al. (2020) Seniors Quality Leap Initiative United States and Canada	• To improve the quality of pain management in RAC	• Representatives of RAC organisations ($n = 14$ organisations) and strategic and academic partners ($n = 10$) • 68 RAC facilities from 12 organisations	• Twice yearly face-to-face meetings, between 2014 and 2017	• Member organisations agree to data collection and budget requirements on joining the CoP	• Sharing performance data, exchanging experiences of interventions that worked and did not work, updated pain assessment policies, introduced nonpharmacological approaches to pain management	• Pain assessment educational modules

TABLE 1 (Continued)

Reference CoP name Country	Domain		Community		Practice	
	CoP aim, shared interest	Membership	Interaction	CoP development and maintenance	CoP activities	Resources developed
Hullick et al. (2021) Hullick et al. (2022) The Aged Care Emergency (ACE) CoP Australia	• To improve the capability of RACFs to manage acutely unwell residents and to reduce emergency department transfers and hospital admissions of RAC residents	• Senior staff from each organisation. RAC staff, emergency department nurses, paramedics and primary care nurses (n = not stated) • 141 RAC facilities and nine hospital emergency departments	• Until the COVID-19 pandemic, quarterly face-to-face meetings. During COVID-19 pandemic, fortnightly virtual meetings • Two-day workshop • 24-h nurse-led telephone consultation service	• Two ACE advanced practice nurses coordinated the regional implementation of the ACE program • Regular reviews by governance bodies and stakeholders. • Initial pilot program	• RAC staff were supported to be better able to manage acutely unwell residents • Improved clinical handover and communication of the residents' goals of care • Reviewing emergency department transfer data • Developing local organisation policy to integrate with the CoP	• Evidence-based algorithms for common acute problems experienced by RAC residents
Jack et al. (2021) Peer Assisted Learning CoPs England, UK	• To enable learning and development of RAC staff	• Skilled, nonregistered care workers (n = not stated) and managers. • Five RAC facilities.	• In-person sessions for an hour between shifts	• Two full-day workshops for RAC managers on peer-assisted learning techniques designed to equip them to develop CoPs in their RAC facilities, and then reflect on their efforts to institute this peer-assisted learning	• Members used the CoP to disseminate learning from external courses • Members shared problems between colleagues	• Not stated
Jeffs et al. (2016) PERFORM KT Canada	• To use clinical data to build capacity for quality improvement	• Nine teams of clinicians, staff and managers. • One team from a RAC facility, seven teams from two acute care hospitals and one team from mental health sciences centre • Team leaders and members from each PERFORM KT project (total number not stated)	• Six monthly in-person CoP learning sessions, with a final presentation	• Each team had a team leader and the support of an assigned mentor with expertise in quality improvement • Partial financial support was available for the release time of clinical staff • Five learning modules	• Each team developed and implemented a quality improvement project	• Not stated
Kothari et al. (2015) A SHKN oral health care education CoP Canada	• To provide oral health care education to aged care workers	• An evolving membership of 60 individuals from across Ontario (roles not stated) • RAC and hospital settings (n = Not stated)	• Online meetings and email • Members-only web area	• Part of the SHKN, receiving librarian and knowledge broker support • CoP core planning team included four coleads, one knowledge broker and one librarian (held regular teleconference planning meetings to discuss updates on administration, membership, webinars and resource development)	• Experts developed the content for the interactive webinars	• Produced seven 30-min webinars, interactive sessions with the audience (nurses, dentist and related paraprofessionals) and recorded

(Continues)

TABLE 1 (Continued)

Reference CoP name Country	Domain		Community		Practice	
	CoP aim, shared interest	Membership	Interaction	CoP development and maintenance	CoP activities	Resources developed
Manson et al. (2021) Project ECHO for nursing homes England, UK	• To provide palliative care education in RAC	• Nurses ($n=32$), RAC managers ($n=22$), care workers ($n=57$) and other staff ($n=10$, kitchen staff, administrators, allied health) involved in this programme • RAC facilities in a single city (n = not stated)	• A programme of 20 fortnightly 90-min sessions on web videoconferencing consisting of didactic teaching from experts as well as group discussion of case studies	• Curriculum was based on member input. • Project ECHO hub-and-spoke approach: 'hub' of topic experts at the local hospice, 'spokes' of nursing home staff	• Sharing learning between disciplines and between organisations • Informal dissemination of learning to others in the nursing home	• Not stated
Tolson et al. (2005) Booth et al. (2007) The Scottish Gerontological Nursing Demonstration Project Scotland, UK	• To promote development of evidence-based practice in gerontological nursing	• Nurses ($n=30$). • Four of which worked in RAC facilities	• Online practice development college • Face-to-face meetings	• Part of a larger Demonstration Project • Expert adviser in the topic area led the review of evidence • Initial pilot program (demonstration site)	• Problem solving and pooling of implementation solutions	• A description of gerontological nursing, including 10 principles • A model for the development of best practice statements • A best practice statement on nutrition
Tolson et al. (2008) Tolson et al. (2011) A Caledonian Development Model nutrition CoP Scotland, UK	• To implement a best practice statement for nutrition in frail, older people	• Nurses ($n=24$). • Six RAC facilities, five acute hospital wards and seven acute day hospitals	• Online practice development college	• This model is the product of the demonstration project described in above row (Tolson et al., 2005) • A CoP facilitator supervised and guided learning • Values reconciliation, confidence building strategies and action planning	• Implementation of nutritional referral criteria for allied health, increased dysphagia screening, supervision of all mealtimes by nurses and improvement of the mealtime experience	• Key data from CoP discussions shared and archived within the resource library
Vrerink et al. (2022) 'People and their Stories' CoPs Netherlands	• To improve person-centred care for people with dementia, with a focus on personhood	• Nurses, activity therapists, psychologists, spiritual counsellors and case managers ($n=56$, 8 CoPs each with 6–8 members) • Five RAC facilities	• Six in-person research sessions over 1–2 years	• Two action researchers acted as process facilitators • Research sessions followed the cyclical action research model of planning, acting, observing and reflecting • CoP members took ownership of the research project	• Members learnt through investigating their own practice	• The story circle tool to work through the personal narratives of residents

Abbreviations: ACE, Aged Care Emergency; CoP, community of practice; COVID-19, coronavirus disease 2019; ECHO, Extension for Community Health Outcomes; GP, general practitioner; PERFORM KT, Knowledge Translation of Performance Data for Frontline Nurses and Leaders Initiative; RAC, residential aged care; SHKN, Seniors Health Knowledge Network; SHRTN, Seniors Health Research Transfer Network, UK, United Kingdom.

3.1.3 | Practice

Activities, and resources produced

The activities of the CoPs and the resources they produced were tailored to their respective aims. To improve quality of care in a specific area CoPs commonly promoted the uptake of evidence-based practices ($n=4$, 31%) including the development and use of clinical algorithms, best practice statements, policies and risk assessment tools. Related to this was the provision of training to RAC staff ($n=4$, 31%) in the form of workshops, interactive webinars or online modules. The CoPs' activities often involved sharing learning between organisations, across different disciplines, as well as disseminating knowledge to other staff at the RAC facility who were not members of the CoP. One CoP standardised data collection criteria to enable quantitative evaluation of their quality improvement initiative (Francis-Coad et al., 2017b).

3.2 | Evaluation studies

Sixteen studies evaluated the effectiveness of eight CoPs (Table 2). CoPs were evaluated by qualitative ($n=8$, 50%), quantitative ($n=3$, 19%) and mixed methods ($n=5$, 31%). Data collection methods included interviews, focus groups, transcripts of online CoP discussions and clinical audits. Three studies were not included in Table 2 as they did not present any empirical data and did not meet the screening requirements for MMAT evaluation (Chambers et al., 2010; Hullick et al., 2022; Tolson et al., 2011).

3.2.1 | Kirkpatrick's levels of evaluation

Thirteen (81%) studies assessed members' reaction (Kirkpatrick's level 1) to participating in the CoP and for seven (44%) studies this was the only level of evaluation measured. Interviews ($n=8$, 50%) and focus groups ($n=4$, 25%) were the most common method of data collection. These studies revealed how the CoPs functioned, and found members were mostly satisfied, and enjoyed sharing stories and information (Francis-Coad et al., 2017b; Jeffs et al., 2016; Kothari et al., 2015; Manson et al., 2021; Vrerink et al., 2022). Facilitating factors included having management support (Francis-Coad, Etherton-Beer, et al., 2018, and a topic that members felt was important (Manson et al., 2021). Barriers such as lack of time, staffing pressures or competing priorities (Francis-Coad et al., 2017a; Kothari et al., 2015; Manson et al., 2021; Tolson et al., 2008) and technology issues (Francis-Coad et al., 2017a; Manson et al., 2021; Tolson et al., 2005) were reported.

Six (38%) of the included studies evaluated members' change in knowledge, skills, or attitudes (Kirkpatrick's level 2). The study by Tolson et al. (2008) assessed Caledonian Development Model CoP members' workplace attitudes using a standardised questionnaire and interview data and found improvements in workplace autonomy and increased organisational support. Similarly, Francis-Coad, Etherton-Beer, et al. (2018) demonstrated increased evidence-based falls prevention knowledge following the CoP with higher scores on a survey of falls prevention strategies. The remaining four studies assessed members' perceived change using self-report. They reported improved professional identity and confidence to change practice (du Toit et al., 2020; Fosse et al., 2017; Tolson et al., 2005), and that sharing stories motivated members (Vrerink et al., 2022).

Three studies (19%) assessed members' change in practice (Kirkpatrick's level 3) through clinical audits or quality indicators, and reported improved use of evidence-based practice (Hirdes et al., 2020; Tolson et al., 2005, 2008). The study by Francis-Coad, Etherton-Beer, et al. (2018) assessed prescribing and dispensing of vitamin D supplementation through audits of electronic records and charts and found increased use of vitamin D. Tolson et al. (2008) reported improvements in nutrition-based assessment, screening and recording, and Hirdes et al. (2020) reported improvements in pain assessment and the quality of pain management.

Three studies (19%) evaluated resident-level results (Kirkpatrick's level 4), by assessing changes in residents' clinical outcomes following the introduction of the CoP. Hullick et al. (2021) demonstrated reductions in hospital admissions and emergency department presentations and Hirdes et al. (2020) showed reduced resident pain rates. Francis-Coad, Haines, et al. (2018) did not demonstrate a change in falls rates, however, their CoP was the only one to be evaluated at all four of Kirkpatrick's levels.

3.2.2 | Quality appraisal of evaluation studies

The methodological quality appraisal of the evaluation studies revealed variation in quality across the different study designs. MMAT results are shown in Table 3, with full criteria definitions available in the user guide (Hong, Pluye, et al., 2018). Four (50%) of the qualitative studies, three (60%) of the mixed methods studies, and one (33%) of the quantitative studies met all quality criteria.

4 | DISCUSSION

This rapid review sought to describe the features of CoPs in RAC, identify how they were established and maintained, and summarise the evidence of their effectiveness. This review showed how the flexible CoP concept has been adapted to RAC. There was heterogeneity in the features of CoPs, which were used for a variety of purposes, included in-person and/or online interactions and covered a range of care topics. This variation in characteristics is consistent with previous reviews of CoPs in healthcare (Li et al., 2009b; Ranmuthugala et al., 2011).

Most commonly the CoPs aimed to improve the quality of care and support implementation of best practice in a specific clinical area, such as falls management or palliative care. Others did not

TABLE 2 Summary of studies that evaluated communities of practice in residential aged care ($n = 16$).

Reference Study name Country	Study design and data collection methods Sample	Key findings	Kirkpatrick's levels of evaluation
Booth et al. (2007) Using action research to construct national evidence-based nursing care guidance for gerontological nursing Scotland, UK	Longitudinal action research study Qualitative research methods: • Focus groups • Interviews • Transcripts of online CoP discussion • Researcher field notes and recordings of in-person CoP discussions • Clinical audits (data not published) Sampling method and size not stated	• Sense of group ownership, sharing ideas to promote good practice and develop further expertise; self-reported changes in attitudes towards gerontological nursing values • The participatory methodology for developing evidence-based 'best practice statements' was seen by members as rigorous and valuable • Piloting of an initial 'best practice statement' in nutrition showed significant and sustained practice improvements made, including nutrition and hydration assessments (data not published)	1
du Toit et al. (2020) Peer-enabled staff training in residential care settings as means for promoting person-centred dementia care Australia	Cross-sectional study Mixed methods: • Facilitator documentation • Group discussion (Nominal Group Technique) • Workshop attendee evaluation forms Purposive sample of dementia care specialists, care managers and registered nurses from RAC ($n = 322$)	• Members reported they were satisfied with the CoP, had achieved the learning objectives, and could transfer learning to practice • Facilitators identified that peer support promoted collaboration among attendees and supported development of their occupational identities as transformational leaders. They also reported inadequate preparation time	1, 2
Fosse et al. (2017) Doctors' learning experiences in end-of-life care—a focus group study from nursing homes Norway	Case study Qualitative research methods: • Focus group Purposive sample of nurses and intern doctors ($n = 16$)	• Doctors learnt from an experienced multidisciplinary team. For example, they learnt how to adjust words and decisions according to family and patient's life story	1, 2
Francis-Coad et al. (2017b) Using a community of practice to evaluate falls prevention activity in a residential aged care organisation: a clinical audit Australia	Cross-sectional clinical audit study Mixed methods: • Surveys using a validated audit tool • Clinical resident-level data such as vitamin D prescription, bed type and medication reviews • RAC facility-level data including policy, process, and care management documents • Observation of clinical practices, discussions with staff. • Transcripts of CoP training documents, CoP discussion board, CoP emails, researcher journal observations and member feedback Purposive sample of RAC sites ($n = 13$).	• All 13 sites completed the audit, meeting effective clinical audit criteria • The audit identified areas of practice that were consistent with the evidence, such as medication reviews, continence assessments and podiatry • Areas of improvement were identified as vitamin D supplementation, falls prevention education and falls prevention policy • CoP members conducting the audit felt empowered to improve falls prevention practices	1
Francis-Coad et al. (2017a) Can a web-based community of practice be established and operated to lead falls prevention activity in residential care? Australia	Cross-sectional study Mixed methods: • CoP member surveys, CoP reflection discussion and intranet discussion transcripts • Researcher observation journal • Stakeholder meeting minutes and emails Purposive sample of nurses and allied health staff ($n = 20$).	• A web-based falls prevention CoP was established that met with determinants of success for CoPs in healthcare. • All participants interacted on the web but the frequency of engagement was low • Challenges to the online CoP interactions included unfamiliarity with other members and lack of time due to competing clinical demands	1

TABLE 2 (Continued)

Reference Study name Country	Study design and data collection methods Sample	Key findings	Kirkpatrick's levels of evaluation
Francis-Coad, Etherton-Beer, et al. (2018) Evaluating the impact of a falls prevention community of practice in a residential aged care setting: a realist approach Australia	Pre/post study Mixed methods: • Surveys • Semi-structured interviews • Intranet discussion frequency. • Audits: Clinical resident-level data including vitamin D supplementation (medication charts, electronic dispensing records) • CoP electronic communication transcripts, including emails and meeting minutes • Policy manuals, procedure documents and stakeholder meeting minutes • Researcher journal with observations and reflections Purposive sample of interdisciplinary staff ($n=20$).	• Improved evidence-based falls prevention knowledge ($p<.001$). • Increased evidence-based vitamin D supplementation ($p=.002$). • Barriers to implementing falls prevention strategies included lack of time due to competing demands and perceived lack of management support	1, 2, 3
Francis-Coad, Haines, et al. (2018) Evaluating the impact of operating a falls prevention community of practice on falls in a residential aged care setting Australia	Prospective quasi-experimental pre/post study Quantitative research methods: • Falls electronic clinical incident reporting system, including resident rate of (injurious) falls Purposive sample of 13 RAC sites (3819 admissions)	• No significant change in falls rates ($p=.967$) • No significant change in rate of injurious falls ($p=.423$)	4
Hirdes et al. (2020) The Seniors Quality Leap Initiative (SQLI): An International Collaborative to Improve Quality in Long-Term Care United States and Canada	Time series analysis Quantitative research methods: • Organisation-level surveys of standardised RAC pain assessment and management quality data Purposive sample of 12 organisations	• Improvement in pain assessment and management quality indicators, including reduction in resident pain levels	3, 4
Hullick et al. (2021) Reducing Hospital Transfers from Aged Care Facilities: A Large-Scale Stepped Wedge Evaluation Australia	Stepped wedge nonrandomised cluster trial Quantitative research methods: • RAC resident emergency department transfer and hospital admission data Purposive sample of nine hospital emergency departments and the 81 RACFs that primarily transfer residents to these hospitals	• Significant reduction in the primary outcome of hospital admissions ($p=.0025$) and secondary outcome of emergency department presentations ($p=.0023$)	4
Jack et al. (2021) An educational initiative to support the development of communities of practice in older people's care home settings England, UK	Qualitative study Qualitative research methods: • Interviews Purposive sample of managers from five RACFs who attended both workshops	• Members shared knowledge with colleagues, improved communication and developed a happier workplace	1
Jeffs et al. (2016) Contextualising learning to improve care using collaborative communities of practices Canada	Qualitative study Qualitative research methods: • Four focus groups ($n=17$) • Individual interviews ($n=30$) Purposive sample of members ($n=47$)	• Members praised the structured program and mentorship, despite being exposed to concepts outside their comfort zone • Beneficial interactions with and feedback from other teams, including exchanging stories, getting new ideas, sharing successes and challenges	1

(Continues)

TABLE 2 (Continued)

Reference Study name Country	Study design and data collection methods Sample	Key findings	Kirkpatrick's levels of evaluation
Kothari et al. (2015) Contextualising learning to improve care using collaborative communities of practices Canada	Case study that was part of a larger project Qualitative research methods • Interviews (semi-structured) • Observer field notes • Document review Purposive sample: CoP leaders prior to observation period ($n=4$), mix of CoP members at follow-up ($n=$ not stated).	• The CoP planning team functioned well. Members felt the CoP promoted discussions and joint learning; positive collaboration and sharing of ideas • Some of the challenges with implementing practice change included perceived lack of important of oral health care by staff and managers, competing priorities and reluctance to change practices	1
Manson et al. (2021) 'Palliative care education in nursing homes: a qualitative evaluation of telementoring England, UK	Phenomenological study Qualitative research methods: • Group and individual interviews Purposive sample of nursing home staff ($n=11$)	• Member participation dropped from a peak of 43 to a stable level of approximately 20 participants • Barriers to accessing Project ECHO included time and staffing pressures, as well as access to IT equipment • Participants felt the topic was important, use of case studies engaging, and enjoyed the sharing of stories. Peer support provided reassurance	1
Tolson et al. (2005) Progressing evidence-based practice: an effective nursing model? Scotland, UK	Qualitative study Qualitative research methods: • Individual interviews At the end of the second project year, all 30 members were invited to participate in interviews; purposive sample of 15 nurses	• All reported the project had influenced their practice, and project resources enabled practice development • Members reported increased confidence in their professional identity (gerontological nurses). Participation in the CoP was empowering, afforded status and for some reduced feelings of isolation • Lack of time for learning at work was a challenge for some members. Two members were unable to access computers to use the virtual college, some experienced resistance from others when using computers for learning	1, 2
Tolson et al. (2008) Achieving evidence-based nursing practice: impact of the Caledonian Development Model Scotland, UK	Pre/post study Mixed methods: • Focus groups • Audits of local policies, resources and education • Record audits • Virtual college usage statistics • Revised Nursing Work Index Questionnaires All members were invited to participate in interviews; purposive sample ($n=$ not stated) Convenience sample of records audited ($n=280$ records) Analysis of care home data presented separately	• On average CoP members visited the virtual college weekly • Members liked the facilitation and support of the CoP and access to resources; social participatory learning was evident • Members reported increased organisational support and sharing of knowledge. Time and resource constraints were reported barriers. Importance of ongoing leadership support for practice development • Audits of records indicated improvements in assessment of individual nutritional needs, risk screening, body mass index recording and personal preferences (no statistics provided) • The Revised Nursing Work Index demonstrated improved workplace autonomy ($p=.037$) and organisational support ($p=.037$)	1, 2, 3

TABLE 2 (Continued)

Reference Study name Country	Study design and data collection methods Sample	Key findings	Kirkpatrick's levels of evaluation
Vrerink et al. (2022) From fact to meaning: Care practitioners' hermeneutic competence development in residential care for persons with dementia Netherlands	Participatory action research conducted in two phases. Qualitative research methods: • Observation and evaluation reports (48 of each) All eight participating CoPs (recruitment methods not stated)	• Members reported that working in the CoP was gratifying and allowed for more in-depth person-centred communication • Sharing experiences motivated members to continue the process of understanding residents (person-centred care practice). Members shared examples of changed practice • Challenges included difficulty in maintaining continuity of members in the CoP due to shifting work schedules and staff turnover. This interfered with the ongoing shared research process that relied heavily on personal involvement	1, 2

Abbreviations: ACE, Aged Care Emergency; CoP, community of practice; ECHO, Extension for Community Health Outcomes; IT, information technology; PERFORM KT, Knowledge Translation of Performance Data for Frontline Nurses and Leaders Initiative; RAC, residential aged care; SHKN, Seniors Health Knowledge Network; SHRTN, Seniors Health Research Transfer Network, SQLI, Seniors Quality Leap Initiative; UK, United Kingdom.

focus on a specific clinical or care topic but set out to build capacity for quality improvement among members. Like previous reviews of healthcare CoPs, the RAC CoPs were established for learning, information and knowledge exchange, and sharing and promoting best practice (Li et al., 2009b; Ranmuthugala et al., 2010). The Scottish Gerontological Nursing Demonstration Project was unique in that it also set out to develop principles in gerontological nursing (Tolson et al., 2005). This characteristic of identity-building was common in healthcare CoPs reported in the systematic review by Li et al. (2009b).

There was a range of methods used to develop the CoPs, which included the support of larger collaboratives or as part of a funded research project led by academic partners. Some CoPs also demonstrated how RAC can be linked with, and supported by, hospitals, and academic researchers and educators, which the RAC system often has limited access to (Commonwealth of Australia, 2021). Most CoPs were coordinated and led by expert or trained CoP facilitators or leaders. However, most studies lacked the details required to replicate the methods used to develop and maintain CoPs. Improving the reporting standards of CoP research would facilitate data synthesis and potentially assist in the design and maintenance of CoPs. Moreover, the included studies in this review did not report details about any stakeholder engagement or end-user involvement, although increasingly more attention is given to codesign in healthcare literature (Peters et al., 2022). Engaging end users in the development and maintenance of CoPs could help to align the aims to the local needs.

This review also highlighted the diversity in membership of the RAC CoPs, which was typically multidisciplinary reflecting the variety of workers in RAC (Australian Government Department of Health, 2020). Almost all RAC CoPs had members from across multiple organisations or RAC facilities. This was similar to the review of healthcare sector CoPs by Ranmuthugala et al. (2010) that found most CoPs to be multiorganisation or multiprofessional. The studies did not test the beneficial effects of different membership groups involved in COPs for example differences between having personal care workers or nurses in membership groups. This makes it difficult to assess whether specific groups led to better outcomes. There was also limited evaluation of how membership affects the dynamics and interactions of the groups. This is an area that would benefit from further exploration given the diversity in disciplines, English-proficiency and education levels among RAC workers.

Many CoPs had an online element to their interactions, which can facilitate learning across geographically dispersed RAC facilities, save travel time among often time-poor workforce, as well as enable social distancing—something that has been proven to be beneficial during the COVID-19 pandemic. Virtual CoPs in healthcare are increasingly being used to improve evidence-based practice and outcomes for consumers (Shaw et al., 2022). This is an area that has not been evaluated in depth in the RAC setting and warrants further study.

Our assessment of the evaluation studies showed most used qualitative or mixed methods and were limited to assessing

TABLE 3 Mixed Methods Appraisal Tool (MMAT) criteria ratings, version 2018 (Hong, Pluye, et al., 2018) for the evaluation studies ($N = 16$).

Qualitative studies (n = 8)

Criteria	1.1 approach	1.2 data collection	1.3 data analysis	1.4 interpretation	1.5 coherence
Booth 2007	+	?	?	+	+
Fosse 2017	+	+	+	+	+
Jack 2021	+	+	+	+	+
Jeffs 2016	+	+	+	+	+
Kothari 2015	+	+	+	+	+
Manson 2021	+	+	+	?	?
Tolson 2005	+	+	?	+	+
Vrerink 2022	+	?	+	+	?

Quantitative nonrandomised studies (n = 3)

Criteria	3.1 representative	3.2 measurements	3.3 complete data	3.4 confounders	3.5 intervention
Francis-Coad, Haines 2018	+	+	+	-	+
Hirdes 2020	?	+	?	?	?
Hullick 2021	+	+	+	+	+

Mixed methods—Qualitative and quantitative nonrandomised (n = 1)

	1.1 approach	1.2 data collection	1.3 data analysis	1.4 interpretation	1.5 coherence	3.1 representative	3.2 measurements	3.3 complete outcome data	3.4 confounders	3.5 intervention	5.1 mixed methods approach	5.2 integration	5.3 interpretation	5.4 divergences	5.5 component quality
Tolson 2008	+	+	?	+	+	+	+	–	–	+	+	–	–	+	–

Mixed methods – Qualitative and quantitative descriptive (n = 4)

	1.1 approach	1.2 data collection	1.3 data analysis	1.4 interpretation	1.5 coherence	4.1 sampling	4.2 representative	4.3 measurements	4.4 non response bias	4.5 analysis	5.1 mixed methods approach	5.2 integration	5.3 interpretation	5.4 divergences	5.5 component quality
du Toit 2020	+	+	+	+	+	+	+	+	?	+	+	+	+	+	+
Francis-Coad 2017b	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Francis-Coad 2017a	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Francis-Coad, Etherton-Beer 2018	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Note: +: criterion met; ?, cannot tell if criterion met; -, criterion not met.

members' reactions (level 1) and learning (level 2). Although research into CoPs in RAC has been increasing, few studies evaluated their impact on practice change and clinical outcomes, and none of the identified studies assessed cost-effectiveness or used a randomised controlled trial design. The review of CoPs in healthcare and business by Li et al. (2009b) did not find any quantitative studies, but our review is consistent with the more recent reviews of CoPs in documenting an increase in quantitative studies that analysed the effectiveness of CoPs (Ranmuthugala et al., 2010; Shaw et al., 2022). More robust quantitative and mixed-method evaluations of CoPs are necessary to gain more insight into what works, for whom, when and why. Future research should also consider developing a logic model or program theory for CoPs to describe how a CoP is expected to lead to its effects and under what conditions, as recommended by the new Medical Research Council framework for developing and evaluating complex interventions (Skivington et al., 2021).

This review identified gaps and inconsistencies in the reporting of CoPs in RAC. For example, some articles did not report the size or composition of their CoP, others did not detail how the members interacted or what activities they undertook. A recent scoping review of virtual CoPs in healthcare found few studies used a framework to establish a CoP, and like our review found limited reporting of key elements such as roles and how they were coordinated (Shaw et al., 2022). This might in part be due to a lack of a standard structure to report CoPs, as well as different focuses of the articles themselves. The development of a checklist to enhance consistent reporting of the CoP's key features 'domain', 'community' and 'practice', would also be of value given this review and others highlighted huge variation and, in some cases limited reporting of these key features.

Future research into CoPs in the healthcare sector, including RAC, would be supported by a standardised definition of a CoP. Papers included in this review used lots of terms to refer to their CoP, such as 'peer-enabled learning' and 'peer assisted learning'. It is unclear how these terms overlap with a CoP. Moreover, the current literature does not specify what the minimum requirements are to call something a community of practice. For example, is there a minimum frequency for the group to meet in order to call it a CoP? A detailed exploration of these requirements would be of benefit and should be incorporated in a standardised definition of CoP.

The systematic approach following rapid review guidelines, use of a comprehensive search strategy, two independent reviewers for study selection, and the inclusion of quality appraisal using the MMAT were strengths of this review. The review had several limitations. An inclusive approach was used and included papers that identified as CoPs by the authors, irrespective of study quality. Other learning groups that resemble a CoP but did not identify as a CoP were not included, in part due to the lack of a standardised definition of a CoP. To help overcome this, reference lists of identified articles were searched for any missed articles. Further, this review included peer-reviewed articles only, and authors were not contacted to clarify missing details of the CoPs.

5 | CONCLUSIONS

The review showed the variation of key features of RAC CoPs, and how this versatile learning concept can be adapted to the RAC context. However, it was difficult to synthesise findings from studies due to the heterogeneity in study design and quality of reporting. The findings highlight the need for future research to identify the specific features of RAC CoPs, including membership size and mix, virtual versus in-person interactions, and role and type of facilitator, that make them more effective in enhancing the quality of care provided. Future research would also benefit from a standardised definition of CoP and development of a checklist to ensure consistent reporting of its key features.

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The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Data available on request from the authors.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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