FEATURE ARTICLE

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Implementing best practice occupational therapist-led environmental assessment and modification to prevent falls: A qualitative study of two regional and rural public health services in Australia

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Abstract

Background: Occupational therapist-led environmental assessment and modification (EAM) is effective in reducing falls for populations at high risk. Two regional and rural public health services in Queensland devised an implementation strategy to embed best practice occupational therapist-led EAM.

Methods: A qualitative study was conducted to compare the determinants of implementation success across the different health services, using the COM-B model of behaviour change. Six semi-structured interviews were completed with occupational therapists involved at each site, following 12 months of implementation. Interview data were triangulated with minutes from three combined site steering committee meetings, eight local steering committee meetings, and field notes. Thematic analysis was completed to compare barriers and facilitators to best practice uptake of EAM and differences in outcomes between the two sites.

Results: Both sites commenced implementation with similar states of capability and motivation. After 12 months, one site considered that practice change had been embedded as noted in steering committee minutes and comments; however, the other site observed limited progress. According to the COM-B analysis, opportunity (the factors that lie outside the individual's control) had

a significant influence on how both sites were able to respond to the practice change and navigate some of the unexpected challenges that emerged, including the COVID-19 pandemic. Existing team structure, multiple responsibilities of key stakeholders, differences in access to resources, and lack of connection between complementary services meant that COVID-19 disruptions were only a catalyst for unveiling other systemic issues.

Conclusion: This study highlights the power of external factors on influencing behaviour change for best practice implementation. Learnings from the study will provide deeper understanding of completing implementation projects in regional and rural contexts and support the future implementation of EAM in occupational therapy clinical settings.

KEYWORDS

behaviour change, environmental assessment and modification, falls, implementation, rural health services

1 | INTRODUCTION

Falls remain among the leading causes of disease burden and injury, emergency department visits, and, death of Australians aged over 65 (ABS, 2018; AIHW, 2022; Scuffham et al., 2003; Stevens et al., 2014). Falls accounts for a significant amount of health-care spending with amount per capita increasing substantially into older age (AIHW, 2022). The limited research on the impact of falls in regional and rural areas suggests that rates of falls between urban and rural areas of Australia are similar (Boehm et al., 2014). However, specific environmental home hazards relevant to regional and rural settings in Australia differ to those in urban settings. This includes having a raised veranda, larger houses, outdoor toilet, and a greater variety of ground surfaces (Mackenzie et al., 2000). Most falls for people aged over 65 occur at home with an estimated 30%–50% of all falls caused by an environmental hazard (AIHW, 2022; Cumming et al., 2001; Currin et al., 2011; Nyman & Victor, 2011; Stevens et al., 2014; Talbot et al., 2005). Access to effective preventative interventions that target minimising environmental hazards that can be applied in regional and rural areas are warranted.

Occupational therapist-led environmental assessment and modification (EAM) is an effective approach to reducing falls for people aged over 65 at high risk of falls (Clemson et al., 2008; Gillespie et al., 2012; Pighills et al., 2016). At its core, EAM is a comprehensive assessment of an individual's functional ability undertaken with consumers within their home environment. EAM aims to work with consumers to: identify falls risk; raise awareness of how to reduce falls; and participate in joint problem solving. It includes customised education about

> **Key Points for Occupational Therapy**
> - Environmental assessment and modification is an effective intervention for falls prevention but has not been widely implemented in occupational therapy practice.
> - Motivation for implementation of practice change in regional and rural settings is not sufficient to embed change.
> - External context consideration is needed when designing implementation strategies in these settings.

falls risks and the provision of assistive equipment, technology, and/or home modifications to maintain or improve independence and safety (Pighills et al., 2016). Table 1 shows a comparison between usual practice and falls prevention focus using EAM. Research findings also suggest that EAM for falls prevention should include a comprehensive functional assessment of the older person in their home environment using a validated tool, such as the Westmead Home Safety Assessment (Clemson et al., 2008; Cumming et al., 1999; Pighills et al., 2011). Despite the inclusion of EAM in Australian and international guidelines on falls prevention (Australian Commission on Safety and Quality in Healthcare, 2009; College of Occupational Therapists, 2015; NICE, 2013, 2015), research has shown that it has not been routinely implemented in occupational therapy practice (Pighills, Tynan, et al., 2019). This limited uptake is likely due to conflicting organisational processes, lack of focus on prevention, limited clinician skills, perceived complexity, and

TABLE 1   Occupational therapy environmental assessment and modification: Comparison between usual practice and falls prevention focus

Assessment components	Usual practice	Falls prevention
Target population	People of any age experiencing functional decline/difficulty at home	Older people (>65) at high risk of falls (history of 2+ falls in previous year, injurious falls, functional decline, mobility/balance impairment, polypharmacy, vision impairment, comorbidities)
Focus	Secondary intervention to increase functional independence in an area of functional difficulty	Primary prevention of falls. Looks at falls hazards from a person–environment fit perspective using a person, environment, occupation (PEO) model. Considers the interaction between an individual's functional capacity (including behaviour) and the activities in which they engage, within the context of their home environment
Format	Specific assessment of an area of functional difficulty, for example, assessing access to bathing/showering facilities. Not necessarily conducted within the person's own home, assessment could take place within a similar environment, such as the bathroom in an occupational therapy department	Structured assessment of the older person carrying out functional tasks within their own home environment. Comprehensive evaluation process to identify hazards and set priorities, taking into consideration personal risk factors/markers (including behavioural risk), environmental hazards, and the activities in which the person engages. Includes assessment of functional vision, balance, mobility, and activities of daily living
Timeframe of visit	Approximately 1 hour	Approximately 1.5 hours
Clinician experience/training	No experience or training required in addition to graduate occupational therapy qualification	Completion of face-to-face or online training modules (https://fallspreventiononlineworkshops.com.au/) recommended to enhance knowledge of falls prevention and format of standardised assessment. No experience required in addition to graduate occupational therapy qualification
Approach/engagement	Prescriptive. The therapist assumes the role as the 'expert', recommends solutions, and prescribes intervention, modifications, and/or equipment	Collaborative. Active involvement of the older person and/or their carer in problem identification, prioritisation, and solution generation
Tools	Checklist, service-specific non-validated home assessment form or freehand case notes used to record observations and actions	Standardised, valid, and reliable assessment tool, for example, the Westmead Home Safety Assessment (WeHSA), which is a 57-item assessment grouped into 15 domains
Intervention intensity	Incorporates 1 to 3 out of 5 components of an intensive intervention[a] (Clemson et al., 2008)	Incorporates all 4 to 5 out of 5 components of an intensive intervention[a] (Clemson et al., 2008)
Recommendations	Further intervention and/or equipment, adaptations, and/or modifications to the physical environment	Changes to the individual's risk-taking behaviours while engaged in activity, further intervention, and/or equipment, adaptations, and/or modifications to the physical environment
Follow-up	Referral for equipment installation, modifications, and adaptations. Telephone follow-up to check that recommendations have been carried out	Referral for equipment installation, modifications, and adaptations. Telephone follow-up to check that recommendations have been carried out. Additional visit(s) to the person's home environment to re-assess function and re-prioritise risks and solutions once recommendations have been carried out

[a](1) A comprehensive evaluation process of hazard identification and priority setting, taking into account both personal risk and environmental audit; (2) the use of an assessment tool validated for the broad range of potential fall hazards; (3) inclusion of formal or observational evaluation of the functional capacity (physical capacity, behaviour, functional vision, habits) of the person within the context of their environment; (4) provision of adequate follow-up by the health professional and support for adaptations and modifications; and (5) active involvement of the older person in the assessment and priority setting.

consumer expectations (Clemson et al., 2014). In regional and rural Australia, further barriers exist in the uptake of best practice among practitioners (Pighills, Tynan, et al., 2019).

Regional and rural settings in Australia are known to have limited access to resources and effective models of service delivery, which impede ability to implement falls prevention interventions (Butt, 2005). Regional and rural health systems are complicated by issues of workforce shortages and onerous workloads (Bourke et al., 2012; Kumar et al., 2020). Rural practice also includes delivery of occupational therapy services within vast geographical boundaries requiring significant travel, time, and resources compared with urban settings (Boshoff & Hartshorne, 2008; Kingston et al., 2015). Occupational therapists in these areas also face professional isolation and report greater perceived difficulty in accessing relevant peer-reviewed journals (Cosgrave et al., 2018; Lienesch et al., 2021; Roots & Li, 2013). Keeping informed of research and implementing appropriate research findings are challenging for busy clinicians especially in regional and rural settings with barriers well documented (Edelman et al., 2020; Kilbourne et al., 2007; Pain et al., 2015; Wenke et al., 2018).

Successful implementation of evidence-based practice requires engaged stakeholders to tailor implementation strategies, address local barriers, and support specific behaviour change (Michie et al., 2011; Reed et al., 2018). The COM-B system of behaviour change theory acknowledges that the concepts of capability, opportunity, and motivation are necessary prerequisites that interact to support or limit behaviour change (Michie et al., 2011). Regional and rural health systems are complex; thus, they provide local contextual challenges to behaviour change that impact the ultimate success of implementing research into real settings (Reed et al., 2018). However, there is minimal implementation science research in these settings.

In 2017, an initial project (Stage 1) was designed to explore the uptake of EAM in occupational therapy practice in a regional and rural public health service in Queensland (Figure 1). The project concluded that although occupational therapists were aware of, and experienced in, falls prevention intervention in the home, there was no evidence of them implementing best practice EAM (Pighills, Tynan, et al., 2019). Key barriers that influenced implementation were identified and included: lack of confidence in, and awareness of evidence by occupational therapists; limited support and understanding of the occupational therapists' role by other health workers and consumers; and perceived inadequate time and resources to deliver EAM in the setting (Pighills, Tynan, et al., 2019). The identified key facilitators for change were found to be the availability of local peer support, ability to engage multiple stakeholders, and support from organisational leaders (Pighills, Tynan, et al., 2019).

Two similar regional and rural health services were chosen to implement best practice EAM for Stage 2. Learnings from Stage 1 were used to develop an implementation strategy which was then refined using the Expert Recommendations for Implementing Change (ERIC) implementation strategies (Table 2) (Powell et al., 2015). This was completed in a planning phase via formal, high-level, stakeholder discussions at each site with organisational leaders including: executive; occupational therapy directors; and potential opinion leaders (Figure 1). An evaluation plan, using a logic model, was developed (Julian, 1997). The planning phase also focussed on raising awareness about the practice change, outlined in Table 1, and identifying a local core group of occupational therapists to deliver the practice change and provide future peer support. Advisors at each site agreed on the education plan, communication messages, and membership of the local and overarching steering committees.
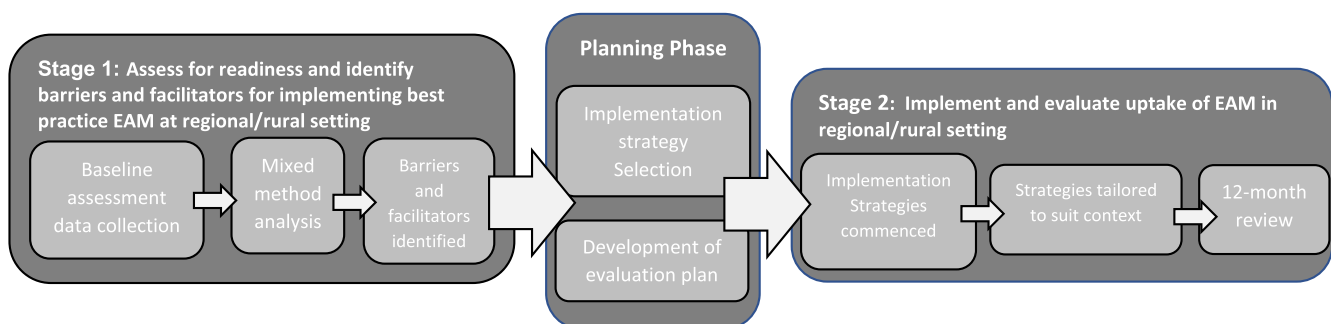

FIGURE 1 Overview of steps involved in the implementation project to embed best practice environmental assessment and modification (EAM) in two regional health services

TABLE 2 Implementation strategies for Stage 2

Implementation Category	Action step	ERIC strategies
Develop stakeholder interrelationships	Establish steering committees across and between both sites	Use advisory boards and workgroups
	Hold bi-monthly steering committee meetings across both sites	Create a learning collaborative Develop resource sharing agreements Promote network weaving Provide ongoing consultation Capture and share local knowledge
	Hold bi-monthly local steering committee meetings	Organise clinician implementation team meetings Provide ongoing consultation Conduct local consensus discussions
	Complete bi-monthly newsletters for distribution across the health services	Complete bi-monthly newsletters for distribution across the health services
Train and educate clinicians	Engage core group for focussed training following high-level discussions	Identify early adopters Inform local opinion leaders
	Work shadow identified clinicians	Audit and provide feedback
	Provide access to online modules	Conduct ongoing training Make training dynamic
	Develop face-to-face training	Develop educational materials
	Complete face-to-face training at each site by content expert	Conduct educational outreach visits
Communication	Develop communication plan to communicate about clinical innovation and project activities across sites	Distribute educational materials
Adapt and tailor context	Map referral process for services to identify strategies to improve promotion of EAM, such as improved risk screening	Increase demand
	Incorporate risk screening into referral process to identify high-risk clients	Tailor strategies
Support clinicians to implement practice change	Recognise local opinion leader to support implementation	Identify and prepare champions
	Develop ongoing opportunities for training at each site	Conduct ongoing training

Abbreviations: EAM, environmental assessment and modification; ERIC, Expert Recommendations for Implementing Change.

Stage 2 involved the implementation and evaluation of uptake of the practice change across the two sites with strategies summarised in Table 2. An overarching steering committee was established to monitor implementation and allow for discussion of synergies and difference between the sites. A bi-monthly local committee was established for each site to address local issues and canvass the full range of implementation options available using a rational system for selecting from among them (Michie et al., 2011). These committees included nominated leaders, managers, frontline staff, emerging opinion leaders, content experts, and researchers.

This paper describes an implementation study that compares the experience of outcomes and processes across two regional and rural public health services in Queensland, during 2020. The paper focusses on Stage 2 of the larger project—investigating the barriers, facilitators, and implementation of best practice EAM for regional and rural occupational therapists across two public health services.

2 | METHODS

2.1 | Study design

Qualitative methodology was used to make comparisons between a similar set of implementation strategies

enacted at two different public health services 12 months after implementation and explore implementation and adoption of best practice. Given the evidence that occupational therapist-led EAM is best practice, the study focussed on understanding determinants of implementation success towards sustained practice change in these settings. The study is part of a larger study investigating implementation of best practice EAM for regional and rural occupational therapists across two public health services.

2.2 | Study settings

The two sites were chosen based on similarities in demographics, number of occupational therapists, and patient group. The lead researchers had an existing relationship with the chosen sites and the sites agreed to participate due to interest in the project. Both sites provide care to people living in regional and rural areas within Queensland and operate in a 'hub and spoke' model, with a regional hospital as the hub and rural hospitals as spokes. Site 1 had amalgamated their community health team, hospital transition team, and inpatient rehabilitation team under one unit, meaning that occupational therapists across each team were co-located. Site 2 operated these teams separately across two different hospital campuses. Post April 2020, Queensland did not instigate state-wide lock downs for COVID-19 restrictions. Restrictions were isolated to local government areas where an outbreak was of concern. Most of the lockdowns were less than a week and occurred within local government areas within or close to the state capital city. Site 2 is located closer to the capital city than Site 1.

2.3 | Data collection tools

Qualitative data were collected via semi-structured in-depth interviews. The questions explored occupational therapists' experience of implementing best practice EAM and were developed based on the Integrated Promoting Action on Research Implementation in Health Services (i-PARIHS) framework (Harvey & Kitson, 2016). The interview guide developed for this study is provided in Appendix A. A member of the research team, external to the delivery of occupational therapy services in either health service, completed the in-depth interviews to minimise bias in questioning and participant responses. All interviews were completed via video conference, digitally recorded, and transcribed verbatim. Field notes and minutes from the steering committee meetings were also collected and used in the analysis.

2.4 | Participant recruitment

All occupational therapists who had participated in the implementation of the practice change were invited to complete a one-on-one interview via email.

2.5 | Data analysis

Using a deductive approach, data analysis involved the six phases of thematic analysis described by Braun and Clarke (2006) and was underpinned by the COM-B system of behaviour change theory (Michie et al., 2011). The analysis was performed by three researchers. The researchers were all female occupational therapists. Two of the researchers worked as frontline clinicians at the respective health services and were not directly involved in the project. The third was skilled in qualitative research with a PhD in this field. The frontline clinicians analysed transcriptions of participants from the other health service to minimise bias. In Phase 1, the researchers read the transcriptions, minutes, and field notes independently to familiarise themselves with the data and gain a greater understanding of how the reported experience supported or limited the behavioural change. In Phase 2, the researchers systematically generated initial codes. This involved reading the transcripts line by line and coding the data. Field notes and steering committee minutes were also coded. In Phase 3, the codes were collated into potential themes, related to the COM-B system concepts of *capability*, *opportunity*, and *motivation*. An additional 'other' category was added to ensure data were not ignored. In Phase 4, themes were reviewed, and a thematic map was developed, which was shared for discussion and clarification. In Phase 5, ongoing analysis was conducted to refine and confirm definitions of each theme with a final analytical framework confirmed by the researchers. In Phase 6, final analysis was completed, ensuring that the analysis related back to the research question.

The researchers met to review progress on three separate occasions in order to discuss similarities and differences and, to ensure data saturation was confirmed. Member checking was also completed by providing the analysed data to participants to review for clarification and confirmation of meaning. The analysis software NVivo 12 (Windows) QRS was used to assist in the process. All authors reviewed the final analysis and confirmed the interpretation.

2.6 | Ethics

The study was granted ethics approval LNR/2019/QTHS/51590 from the Townsville Hospital and Health Service Human Research Ethics Committee. Written informed consent was obtained from all participants. All data were de-identified, and pseudonyms used.

3 | RESULTS

Pre-implementation actions commenced October 2019 and included face-to-face training workshops at both sites. The content of the training is included in Appendix B. Implementation of the practice change commenced in March 2020, a critical time in the initial disruptions to health-care systems, health-care utilisation, and general daily life across Australia due to the COVID-19 pandemic (Cheek et al., 2020; Lystad et al., 2020; Podubinski et al., 2021). The 12-month follow-up was completed between January and February 2021. All frontline occupational therapists in the teams involved in the practice change took part in the study (six in Site 1 and four in Site 2). A total of six in-depth interviews lasting approximately 40 minutes each were completed at the 12-month follow-up (four at Site 1 and two at Site 2). Those who were not interviewed declined due to being unavailable. Interviews were triangulated with field notes conducted during the implementation and minutes of three combined site steering committee meetings and eight local steering committee meetings. All implementation strategies were tried at both sites as per Table 2.

There were several behavioural similarities between the two sites that emerged from the data. This included initial commitment and excitement to be involved in the project, with participants noting that engaging with the practice change meant an opportunity for skill development.

> From the get-go everyone was very excited. Participant 1, Site 1

> There was a readiness to earnestly start implementing it into our workplace. Participant 2, Site 2

Participants at both sites highlighted that the training workshops and access to online resources were vital in building capability in skills and knowledge to implement the practice change. This was also considered important for building confidence. Moreover, participants from both sites indicated that involvement in the training and project helped to build their role identity as an occupational therapist.

> ... it just really consolidated that yes, we are the right profession to be doing these home safety assessments and environmental assessments. Participant 1, Site 1

> ... I felt more confident to ... (explain) that this clientele is high-risk ... of having another fall and would benefit from occupational therapy. Participant 2, Site 2

Similarities in behaviour between the sites also included a positive team culture, with participants describing their teams as innovative and diligent. This was clearly articulated in discussions and in meeting minutes with respondents at both sites commenting on how their teams were 'flexible', 'open-minded', and 'very understanding of the importance of preventing falls of people in their home'.

However, despite some similarities, the results show the sites experienced many differences, under the COM-B concepts, that influenced uptake and ability to embed practice change. After 12 months of implementation, Site 1 had achieved significant gains in embedding the practice change, with participants expressing that the process was 'more of a routine as opposed to something new and different' and 'that this is just going to be practice as usual now'. On the other hand, participants at Site 2 did not describe the same experience. The following presents a detailed summary of the differences experienced at each site, under the headings of capability, opportunity, and motivation. Figures 2 and 3 present a summary of the overarching findings of the key themes within the constructs of COM-B and subsequent influence on behaviour change at both sites.

3.1 | Capability

Several differences were observed between each site, relating to their capability to build skills and knowledge to engage in implementing the practice change. This included opportunities to build knowledge and access to defined tools and processes to support decisions.

3.1.1 | Opportunities to build knowledge

At Site 1, it was clear that the team had ongoing access to support and training. This included additional informal training from team leaders, peer support to reflect on
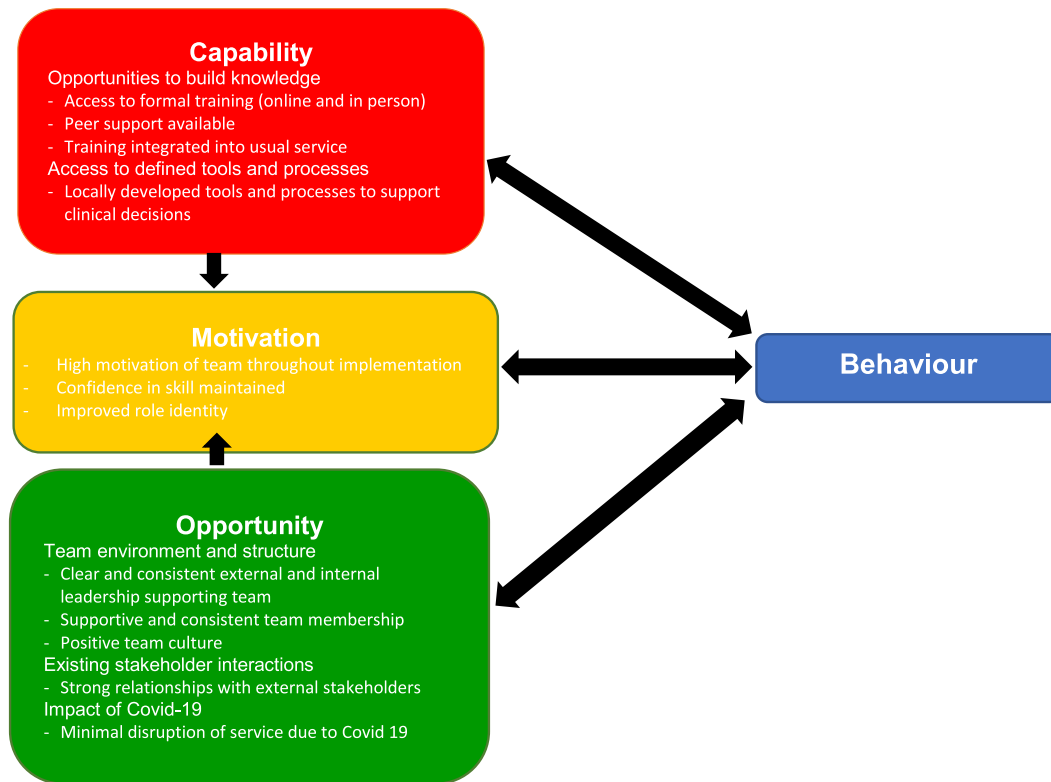
Site 1.

F I G U R E 2 Influence of capability, opportunity, and motivation on behaviour change at Site 1. *Source*: Modified from Michie et al. (2011)

practice experience, and use of an embedded service auditing process that allowed the team to continually review progress. As a result, participants in Site 1 acknowledged that their own individual improvements and ability to build on knowledge meant that home safety assessments were 'more comprehensive now'. Participants at Site 1 commented that the implementation was supported by easy access to content experts to confirm knowledge and decisions, access to work shadowing opportunities, and peer support. This provided regular opportunities to develop skills and reinforce learning.

> Because then we're not stuck in limbo of not knowing for a long period of time. We can kind of get a bit of direction if we needed it. Participant 1, Site 1

As a result, participants at Site 1 showed a clear understanding of the practice change and confidence in what they were doing.

At Site 2, experience in building knowledge to support the practice change was different. Most notably, participants acknowledged that, due to COVID-19 disruptions, there was a significant delay between the training and commencement of implementation. Meeting minutes and interviews indicated that the delays affected knowledge and skill to deliver the intervention.

> ... by the time we were able to try it again, I really felt like I needed to revisit the training that we had received. Because of not being able to implement it made me think oh, am I on top of it as much as I think I am? Participant 1, Site 2

This negatively impacted developing peer support structures for ongoing learning. Participants acknowledged that the delay in applying the new knowledge meant that discussing scenarios with the team or sharing knowledge between colleagues was not done.

> I think the sooner you put something into practice after your training and then case conference those scenarios with colleagues who have done the training ... the better. Participant 1, Site 2
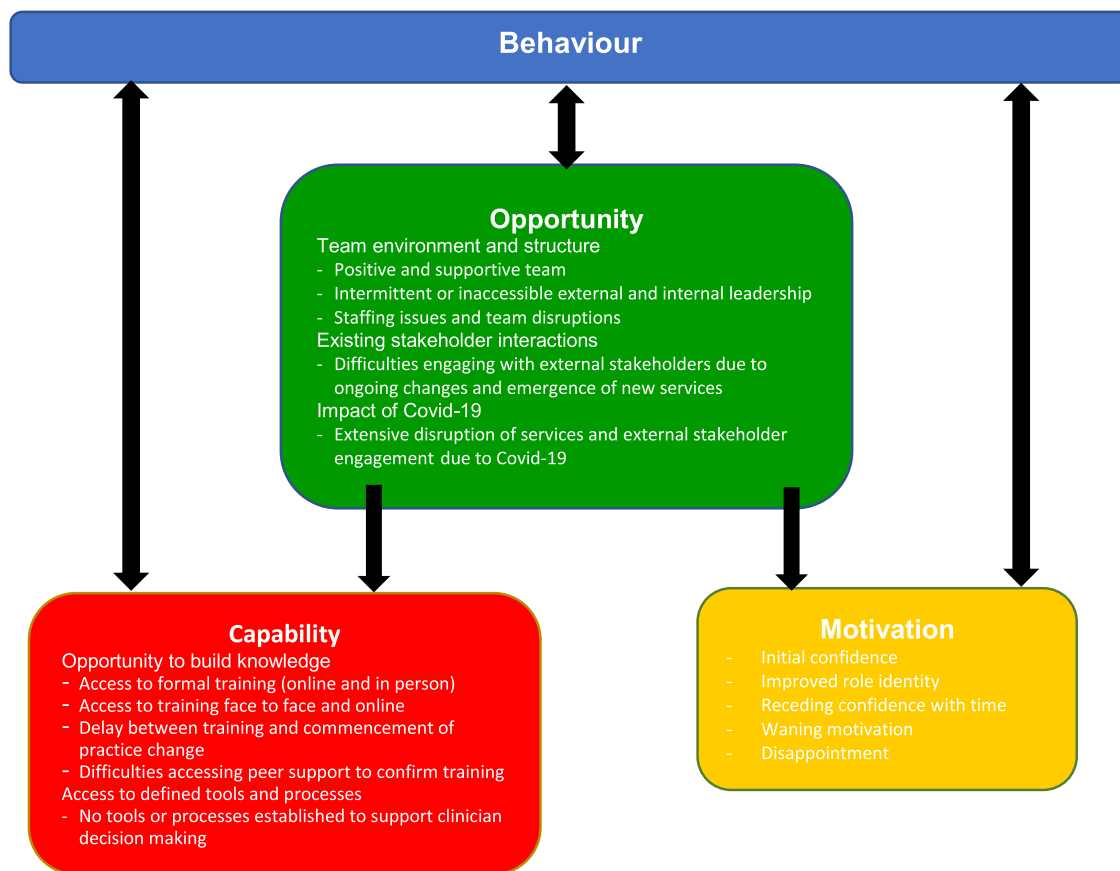
Site 2

FIGURE 3 Influence of capability, opportunity, and motivation on behaviour change at Site 2. *Source*: Modified from Michie et al. (2011)

3.1.2 | Access to defined tools and processes to support decisions

To further facilitate capability at Site 1, a range of processes and tools were developed locally. This included use of evidence-based, high-risk, falls categories to identify consumers who would benefit from EAM; extension of usual appointment times for EAM; clarity of the role of each therapist and the administration process; and development of consumer handouts that could compliment recommendations provided. Having a clear, structured process was observed by participants to facilitate a shared understanding of expectations and process. Participants who were new to the service also commented on how it had helped them gain the necessary skills with ease.

> When I joined the team, the system was actually already in place .... So, to me it was really quite routine and quite structured in the way that it was set up. Participant 4, Site 1

This was not observed at Site 2, where minimal gains were made to put in place processes or procedure changes. As a result, the ability to build capability was negatively affected at Site 2. Participants working part-time or new to the team indicated difficulties with learning and applying new skills, which diminished confidence in capability. Participants also recognised that there were several other changes within the services that they needed to learn, which were competing with applying EAM.

3.2 | Opportunity

Opportunity, or the factors that lie outside the individual, had a significant influence on how both sites were able to respond to what needed to be done, including negotiations of increasing time for the home visits and navigating the referral pathway. Three themes emerged from the analysis under this behaviour change concept, which showed behavioural differences between the sites. These included team environment and structure, existing

stakeholder interactions, and the external influence of the COVID-19 pandemic.

3.2.1 | Team environment and structure

Supportive culture and good leadership at Site 1 were observed, with participants noting that it was clear the project had 'support of higher ups'. In contrast, Site 2 participants acknowledged that the 'absence of not having someone overseeing things' had implications on sustained project engagement. This was due to these more senior positions either still emerging or being spread thinly across the department.

Ongoing engagement and team enthusiasm for the project was identified as an important component of the success of adoption at Site 1. Participants commented that support of senior staff, particularly in instilling a culture of responding to and adopting change, was important for maintaining momentum. This was referenced by one senior clinician who advised that their ambition for the team was

> (to try) to generate this culture of curiosity and generosity .... Participant 1, Site 1

New staff to the team also acknowledged the impact this culture had:

> ... it was just set up right at the very start as a team that valued best available evidence. Participant 4, Site 1

In contrast, staffing changes and loss of staff hours due to extended leave at Site 2 were highlighted as limiting implementation success. Having a team of part-time workers also made it hard to provide opportunity for peer support to implement the change.

> I guess there have been challenges because of part-time staffing ... like at one point, we had an extra position ... that was for a few months ... so that sort of helped us ... but then we've lost that position and we haven't had that replaced. Participant 1, Site 2

3.2.2 | Existing stakeholder interactions

Existing stakeholder interactions affected how sites were able to respond and adapt to the change. For example, at Site 1, it was identified that an increase in the usual amount of time for each EAM appointment was necessary to deliver best practice. There was initial concern that this would be difficult and that it would detract from the amount of home visits that could be done, resulting in increased waitlists and pressures on individual clinicians.

Adopting increased EAM appointment times at Site 1 required robust consultation with the team and administration staff, who were responsible for booking appointments. Resolution of concerns raised by staff about extending appointment times was achieved via problem-solving discussions during the steering committee meetings. After 12 months of implementation, participants reflected that increasing appointment times was important as it allowed 'additional time to have more in-depth conversations about falls prevention and really problem solve together' with consumers.

At Site 2, in contrast, opportunity to resolve barriers to implementation was impacted by inadequate stakeholder engagement with external units. It was noted in minutes and interviews that emerging services in the hospital may have influenced EAM referral numbers. However, a lack of resources to engage with emerging services and limited access to leadership positions to encourage connection meant that deeper understanding of the issues was not achieved.

> We were thinking there's definitely a number of people that would fit that we would be able to see for this project. But that has not been the case which has been quite a surprise and we feel that's because of the development of (new service). Participant 2, Site 2

3.2.3 | COVID-19 impact

Both sites had different experiences of how the COVID-19 pandemic impacted service delivery. Site 1 identified that the COVID-19 resulted in little disruptions to the service. There was an initial impact with people declining or delaying home visits in early 2020, but this was not ongoing. The main impact was on the waitlist, which expanded during the early stages of 2020, as people were still being referred but wanted to delay being seen, but this resolved quickly.

Alternatively, at Site 2, the COVID-19 pandemic had a significant impact on the health service and local community. In particular, the health service intermittently imposed strict guidelines around home visiting, which prevented the implementation of EAM in the intended way. The intermittent disruption occurred between March and June 2020, the time proposed for the practice change to commence, and then again in August 2020.

So, prior to (even starting the implementation), we were basically under that lockdown situation where in this district we were recommended not to do home visiting unless it was essential. If it was essential, it needed to be a quick in and out, just to focus on the area that you were there for. So, it basically prevented us from actually implementing any full assessments. Participant 1, Site 2

The Site 2 team considered modifications to the intervention such as completing it remotely via telehealth. However, they were never able to trial this, due to consumer preference to isolate at home during peak COVID-19 concerns, limiting their access to external support from friends or family to navigate the technology. The ever changing, and often unpredictable nature of the pandemic, also limited engagement with implementation.

We think we're just about to get the go ahead when we had another incidence where we all had to wear face masks again and limit our home visiting. Participant 1, Site 2

The COVID-19 pandemic at Site 2 also affected internal meetings. Although the EAM project steering committee meetings continued, full team department meetings were put on hold, replaced by how COVID-19 restrictions were impacting services. Replacing in-person meetings with virtual meetings, due to restrictions, resulted in less informal 'checking in' on project implementation.

3.3 | Motivation

The capability and opportunity experienced at the sites influenced how motivation was sustained for the practice change. At Site 1, high motivation levels in the beginning remained unchanged, with participants feeling that engaging in the practice change made them more confident that what they were doing was right and 'evidence based'. Participants at Site 1 described underlying intentions that supported their motivation. These included: the opportunity to professionally upskill; involvement in a research project; and a desire to do their best for consumers.

Site 2 demonstrated a sustained effort to maintain motivation, despite the setbacks. This was reflected in steering committee minutes, with comments and notes about the effort the team exerted seeking alternative ways to implement the change. However, sustained motivation at Site 2 was influenced by external factors outside the control of the team.

Lack of ability to engage with implementation contributed to waning motivation in Site 2. Time between training and implementation affected participants' confidence to conduct the intervention, advising that it had 'fallen off the radar'.

I guess prioritising that in the context of part-time hours and things with lots of other changes is tricky. Participant 2, Site 2

Alongside this, the interruptions to service delivery, due to the COVID-19 pandemic, also influenced motivation momentum. High motivation at the beginning resulted in substantial disappointment that they had not been able to achieve what they set out to do.

I am generally a little disappointed that I haven't had opportunity to implement this to a greater extent. Participant 1, Site 2

Despite the challenges at Site 2, there was still motivation to try new strategies to facilitate the implementation into the future.

Yeah, new year, new changes. As I said, we're going to learn—we're pulling everything together to try and learn from it and see what we do next. Participant 2, Site 2

4 | DISCUSSION

This paper provided a 12-month follow-up of an implementation study using qualitative methodology to compare the outcome and process of embedding best practice EAM in two regional and rural public health services in Queensland, in 2020. Consistent implementation strategies were used at both sites, but differences in outcomes were observed. The results show that both sites commenced implementation with similar states of capability and motivation. However, opportunity, or the factors that lie outside of the individual's control, had a significant influence on how both sites were able to respond to and navigate some of the unexpected challenges during implementation.

4.1 | The importance of opportunity in behaviour change

Behaviour change to adopt new clinical practice is influenced by interactions of capability, opportunity, and motivation (Michie et al., 2011). In the COM-B theory of

behavioural change, capability opportunity and motivation interact to generate behaviour that in turn influences these components (Michie et al., 2011). Typically, the COM-B system has capability and opportunity influencing motivation, with behaviour capable of altering capability, opportunity, and motivation (Michie et al., 2011). In our study, Site 1 followed this typical pattern (Figure 2). However, at Site 2, opportunity had greater influence on both capability and motivation (Figure 3). Team stability, access to leadership, access to shared learning opportunities, and influence of existing external stakeholder relationships all played a vital role in negatively influencing behaviour at Site 2. Alongside this, the impact of the COVID-19 pandemic exacerbated existing concerns.

Achieving practice change sometimes requires redesign of delivery systems or workflow (Lau et al., 2016). Available resources - including time, staff, and technical support, - have been reported as both barriers and facilitators in implementation projects and are an important component of system or workflow redesign (Gagnon et al., 2012; Holm & Severinsson, 2012; Lau et al., 2016; Pereira et al., 2012). It was clear that existing processes and team stability integrated well with the practice change at Site 1. There was minimal disruption when appointment times and referral processes needed to be changed. In contrast, Site 2 was faced with fluctuating staffing issues, fluctuating demands on services (due to external changes in process) and, the emergence of new services. As a result, minimal progress was made in modifying processes. In particular, the environmental context at Site 2, both existing and emerging, influenced the uptake of the implementation strategies.

The presence of a positive culture that is receptive to change and values innovation, has been identified as important for behaviour change (Durlak & DuPre, 2008; Lau et al., 2016). Positive culture was evident at Site 1. This included strong and consistent internal and external leadership, and, influential champions, who were respected and trusted by staff to drive change from the beginning of the project. Conversely, lack of available or unknown leadership to advocate change, set priorities, or manage the implementation process, is a known barrier (Kendall et al., 2009; Lau et al., 2016) and was identified at Site 2. It was assumed that both sites were ready to adopt change with careful attention paid to selecting the core team. However, it became apparent at Site 2 that the team did not have as much autonomy over the practice change as first anticipated.

Integral to successful implementation of practice change is providing staff with sufficient opportunity to deliberate and reflect on identified barriers before and during implementation (Durlak & DuPre, 2008; Lau

et al., 2016). This was observed at Site 1, but less so at Site 2. Support from team members and management, collaborative working opportunities, and shared vision of the team were also evident at Site 1. Along with this, continuous communication and support between key stakeholders about the importance of change facilitated consistent commitment of the implementation at Site 1.

The unprecedented events of the COVID-19 pandemic provided an occasion to fully consider the opportunity component of the COM-B model and highlight some exiting fragility in the health system at Site 2. The COVID-19 pandemic has been labelled an unprecedented influencing factor in the opportunity component of the COM-B model (Piat et al., 2021). COVID-19 played a substantial impact as an opportunity barrier at Site 2. However, in our study, it was also evident that COVID-19 exacerbated existing system issues. Recent literature has described the impact that the pandemic has had on implementation projects and how organisations have or have not adapted (Becker et al., 2021; Hasson-Ohayon & Lysaker, 2020; Piat et al., 2021). COVID-19 underscores the importance of context and offers a unique window through which to view the interacting effects (Becker et al., 2021; Piat et al., 2021).

4.2 | Implications for occupational therapy implementation projects in rural health systems

Engagement in practice change by occupational therapists was found to facilitate positive role identity in our study. Regional and rural contexts have known variations in characteristics, such as team composition, organisational structures, cultures, and working practices, which can make it challenging to implement change and build professional identity. Almost all changes to practice in regional and rural health involve 'complex interventions', and these interventions can be particularly hard to implement as they are likely to require change at multiple levels (Lau et al., 2016). Understanding how to improve implementation of practice change by occupational therapists in regional and rural settings is important as the setting often requires novel solutions to ensure that research results are translated into routine practice.

Our study confirms the need to pay attention to the external context and its influence on the opportunity concept for behaviour change. Occupational therapists, in regional and rural contexts, are known to work in isolation and have competing demands that

may affect the delivery of evidence-based interventions, due to lack of time to consider how to apply it. To maximise the uptake of complex interventions, regional and rural occupational therapists and organisations should consider the dynamic range of contextual factors. Future implementation studies should place an emphasis on describing context and articulating the relationships between the factors identified here on behavioural change.

EAM is a clinically effective intervention when targeted towards people at high risk of falls and delivered by occupational therapists (Pighills, Drummond, et al., 2019). There is a current Cochrane systematic review summarising the evidence underpinning EAM, which may have implications for implementation on a national and international scale (Clemson et al., 2019). This research provides valuable insights into factors that should be considered when implementing this intervention in regional and rural settings. A quantitative study exploring sustainability of uptake after this initial review is currently underway.

4.3 | Limitations

The small sample size is indicative of the realities of working in regional and rural contexts. Although findings might not be specifically generalisable, learning from the study may provide greater understanding of completing implementation projects in regional and rural contexts and support the future implementation of EAM in occupational therapy clinical settings.

5 | CONCLUSIONS

This paper has used implementation science and behavioural theory to describe how the determinants of clinician capability, local opportunities, and motivation influence behaviour change in a regional and rural context. Implementing best practice occupational therapist-led EAM in a regional and rural context requires the external context to be carefully considered when designing implementation strategies.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available because of privacy or ethical restrictions.

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APPENDIX A: INTERVIEW GUIDE

1. In your own words, please explain what environmental assessment and modification is, and the role of occupational therapy.
2. Thinking about your unit/department as a whole, can you describe the experience of the team in implementing best practice EAM?
   a. What worked?
   b. What didn't?
   c. What have you learned?
   d. Can you give examples?
3. Thinking about you individually, what has been your experience with implementing best practice EAM?
   a. What worked?
   b. What didn't?
   c. What have you learned?
   d. Can you give examples?
4. What has been the experience of working with colleagues to implement best practice EAM?
5. Are there any other organisational-level or system-level factors (or barriers and facilitators) that you consider important in regard to the implementation of best practice EAM?
6. Is there anything more you would like to add?

APPENDIX B: CONTENT OF THE TRAINING FOR ENVIRONMENTAL ASSESSMENT AND MODIFICATION

The content of the training modules included

- demographics of those who fall;
- evidence underpinning environmental assessment and modification;
- falls risk factors;
- the person, environment, occupation model;
- environmental influences on function;
- overview of the theory of occupational performance;
- environmental assessment;
- implications for practice;
- scoring video recordings of older people carrying out functional tasks at home using the Westmead Home Safety Assessment; and
- discussion—strategies for reducing the risk of falling.