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Informing the equitable implementation of the Play Active intervention for priority population groups

A qualitative study

Emily Villa

Alana Papageorgiou

Hayley Christian

The Australian Research Council Centre of Excellence
for Children and Families over the Life Course

Phone +61 7 3346 7477 **Email** lcc@uq.edu.au

lifecoursecentre.org.au



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Research Summary

Why was the research done?

To understand the barriers and facilitators to implementing the Play Active intervention in early childhood education and care (ECEC) services located in low socioeconomic and regional/remote areas. Equitable implementation of physical activity interventions have rarely been examined in these population groups.

What were the key findings?

Few barriers and facilitators specific to socioeconomic status or geographic location were identified. Key themes related to **capacity to implement, accessibility of the intervention and place-based realities**. Participants suggested adaptations to implementation support, including the addition of a '**champion**' to lead implementation in the childcare service.

What does this mean for policy and practice?

Physical activity interventions in ECEC may need to be adapted to the context of the ECEC service and the services capacity to implement an intervention to support equitable delivery, uptake and benefit. In particular, encouraging services to designate a 'champion' to lead implementation may support ECEC services.

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The authors

Emily Villa

The Kids Research Institute Australia, The University of Western Australia
Email: emily.villa@thekids.org.au

Alana Papageorgiou

La Trobe University
Email: a.papageorgiou@latrobe.edu.au

Hayley Christian

The Kids Research Institute Australia, The University of Western Australia
Email: hayley.christian@uwa.edu.au

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We acknowledge the Traditional Custodians of the lands on which we work and live across Australia.
We pay our respects to Elders past and present and recognise their continued connections
to land, sea and community.

Abstract

Background: Many preschool-aged children do not meet the recommended 180 minutes of daily physical activity including 60 minutes of energetic play. Early childhood education and care (ECEC) services provide an opportunity to increase children's physical activity. ECEC-based physical activity intervention effectiveness has previously been evaluated, however, equitable implementation for priority population groups is rarely considered. The primary aim of this study was to determine the perceived barriers and facilitators to implementing the Play Active intervention in ECEC services located in low SES (SES) and regional/remote areas.

Methods: Semi-structured interviews were conducted with staff (n=15) from ECEC services in low SES and regional/remote areas of Australia. Interviews explored perceived barriers, facilitators and potential adaptations to Play Active implementation support strategies. Data were analysed using thematic analysis, guided by the Consolidated Framework for Implementation Research.

Results: Few SES and remoteness specific barriers and enablers to implementing Play Active in ECEC services were identified. Specific themes included capacity to implement, accessibility of the intervention and place-based realities. To address these, suggested potential adaptations to the intervention included addition of a 'champion' to lead intervention implementation.

Conclusions: Findings align with existing evidence of the barriers and facilitators to implementing physical activity interventions in ECEC, generally. Future research should evaluate proposed adaptations to the Play Active intervention, and their effect, to ensure equitable delivery, uptake and benefit for all children.

Background

The early years are a critical period for child development and establishing healthy behaviours such as physical activity^{1,2}. Physical activity, including energetic play, supports musculoskeletal and cardiorespiratory system development and is positively linked with young children's cognitive, psychosocial and motor development and cardiometabolic health¹⁻³.

Australia's 24-hour Movement Guidelines for the Early Years recommend that children aged 0-5 years engage in 180 minutes of physical activity per day, including at least 60 minutes of energetic play for 3-5 year olds⁴. The guidelines also recommend limiting sedentary behaviours, including restricting screen time and prolonged sitting⁴. Similar guidelines have been developed by the World Health Organisation, and in the United States of America (USA), Canada and the United Kingdom (UK)⁵⁻⁸. However, Australian data shows that only 6% of 2-5 year old children are meeting physical activity guidelines⁹. Comparable levels of children not meeting guidelines have been reported internationally¹⁰. This is concerning given that physical activity behaviours established in early childhood tend to track into later childhood and adolescence^{11,12}.

The likelihood of meeting physical activity guidelines is influenced by social determinants such as socioeconomic status (SES) and geographic location. For example, young (2-5 year old) children living in low SES areas are less likely to meet physical activity guidelines compared to children from middle-high SES groups^{13,14}. However, evidence regarding the influence of geographic location remains limited, particularly in relation to the implementation of interventions in early childhood settings. It has been suggested that investment in early childhood interventions to promote physical activity, particularly in early childhood education and care (ECEC) settings, can improve health equity for children from priority population groups^{15,16}.

ECEC services provide a key setting for promoting physical activity. More than 1.4 million children attend childcare in Australia for more than 27 hours per week¹⁷. Australian studies using device-based measures of children's physical activity (i.e., children wear devices which objectively measure intensity and frequency of their movement) at ECEC show that young children spend between 269 and 292 minutes per day at ECEC in movement, however, only 15-36 minutes of that time is spent engaging in energetic play, which is well below the guidelines recommendations¹⁸. Similar findings are reported internationally¹⁹. While the evidence suggests children attending ECEC have sufficient opportunity to engage in low intensity physical activity, they may not be receiving sufficient opportunities to engage in energetic play¹⁸. Engaging in sufficient energetic play provides opportunity for higher-intensity physical activity which supports cardiometabolic health, cognitive development and psychosocial wellbeing in early childhood¹⁸.

A recent umbrella review²⁰ highlighted a significant gap in understanding the barriers and facilitators associated with implementing physical activity interventions in ECEC, particularly in low SES and regional and remote areas²⁰. Most existing research has focused on physical activity outcomes rather than the equitable implementation of interventions across SES groups or by geographical location. Equitable implementation ensures that all ECEC services, regardless of geographic location or SES status, are able to access and implement physical activity interventions effectively. Further research is needed to understand implementation experiences in priority populations to ensure interventions are equitably delivered across diverse ECEC settings.

Many physical activity interventions have been trialled in the ECEC setting²¹. One such intervention, Play Active, is an evidence-based physical activity policy intervention with an overall goal to increase the physical activity and energetic play levels of young children in Australian ECEC settings¹. Play Active was evaluated with a pragmatic cluster randomised trial in 2021-22²

and the intervention was launched nationally in April 2024. Findings of the trial have previously been published demonstrating that the intervention was effective in increased director-reported policy practices and was acceptable among educators and directors². In 2023, adaptations to the intervention were proposed to scale-up the intervention for real-world availability and applicability²². A key limitation identified when adapting Play Active for scale-up was that further adaptations may be required for ECEC services who work with a greater proportion of children and families from priority population groups (e.g., those from low SES and regional and remote areas)²².

Thus, the primary aim of this study was to determine the perceived barriers and facilitators to implementing the Play Active intervention in ECEC services located in low SES (SES) and regional/remote areas.. The secondary aim was to identify potential adaptations of Play Active required to meet the needs of priority population groups as perceived by ECEC services in these areas.

Methods

Research Design

This research employed a qualitative descriptive approach informed by naturalistic inquiry²³. This approach allowed for rich descriptive data from the participants' perspective producing meaningful findings and information. The research was informed by the Consolidated Framework for Implementation Research²⁴ which aims to understand factors affecting implementation of interventions in real world settings²⁴. Approval for this research was obtained from The University of Western Australia Human Research Ethics Committee (approval number 2023/ET000187).

Sampling and participants

Participants included both directors and educators from ECEC services in low SES and regional/remote areas of Australia. The Australian Bureau of Statistics Socio-Economic Index For Areas (SEIFA) was used to identify ECEC services in low SES areas²⁵. To determine which services were classified as regional/remote, the Australian Statistical Geography Standard (ASGS) was used²⁶. Purposive sampling²⁷ was used to recruit directors by collating postcodes of directors who had registered to the Play Active website. Directors whose ECEC services were located in the lowest two SEIFA quintiles²⁵, recognised as the most disadvantaged areas, or ASGS Remoteness Areas (RA) Codes 2-5²⁶, inclusive of inner and outer regional, remote and very remote Australia, were invited to participate.

Recruitment

To recruit directors, a targeted e-newsletter was sent to directors who had registered to the Play Active website containing a description of the research, a link to the expression of interest (EOI) form and participant information form (PIF). Similar content was shared through Play Active social media channels, Facebook and Instagram. Additionally, 288 directors who had registered to the Play Active website were screened to determine if they met eligibility criteria and then contacted directly. Eighty-nine directors were determined eligible and were contacted. Fourteen agreed to participate, nine completed interviews, 26 declined and 49 did not respond. Other eligible services were also contacted via email using the Australian Children's Education and Care Quality Authority (ACECQA) data base²⁸. Fifty-two directors were determined eligible and were contacted. Six agreed to participate, three completed interviews, 12 declined and 34 did not respond. Reasons cited for non-participation included lack of time, lack of knowledge of Play Active and belief they would not be able to provide meaningful information.

Educators were recruited through snowball sampling²⁹. Following interviews with participating directors, they were asked if an educator at their service would be interested and available to

participate and to provide their contact details. Educators were then contacted via email with a description of the research, a copy of the PIF and a link to the EOI. Six educators were contacted, three participated and three did not respond.

Overall, 12 directors and three educators participated; six participants were from low SES ECEC services, three from regional/remote ECEC services and four from ECEC services which were both low SES and regional/remote.

Data Collection

Participants were invited to participate in an in-depth interview online³⁰ or over the phone, according to their preference. ECEC services located in the Perth Metropolitan area (Western Australia) were given the option of a face-to-face interview as this is where the research team were located. Phone interviews were included as an alternative option to online interviews particularly for ECEC services in regional/remote areas who may not have had stable internet connection or quality. Eleven individual interviews were conducted, and two small group interviews were conducted with both an educator and director participating at the same time. One interview was conducted face-to-face, eight online and four via phone. Interviews lasted between 18 and 45 minutes. Interviews occurred until data saturation was reached, which represented the point at which no new information was provided or themes were generated³¹. Data was collected between August 2024 and January 2026.

Interviews followed a semi-structured interview guide and were recorded³⁰. The interview guide contained ten questions focused on the characteristics of the ECEC services, the barriers and facilitators associated with the Play Active implementation strategies that might be unique to services in low SES and/or regional/remote areas, and potential adaptations to Play Active required to better meet the needs of services in these areas. Demographic information were also

collected from participants. If participants had not registered to the Play Active website, an introduction to the intervention and a walk through of the intervention website was given by the facilitator prior to commencing the interview, with participants also asked to base their responses on their experiences implementing other similar interventions in their ECEC service. Prior to the beginning of data collection, the interview guide was pilot tested with a convenience sample³² of two participants, an ECEC educator and the Chief Operating Officer of an ECEC provider. As a result, minor adjustments were made to the interview guide for clarity in how questions were asked.

Data Analysis

Each interview was transcribed then checked against original audio recordings for accuracy by the first author, then de-identified to maintain confidentiality. Each participant was allocated a de-identified reference i.e., director 1 through 12 and educator 1 through 3. Transcripts were then checked for clarity, before being imported into qualitative data management software NVivo 14³³ for management, retrieval and interrogation.

Reflexive thematic analysis, as described by Braun and Clarke, was used to analyse the data³⁴. This involved reading the transcripts multiple times to form initial codes emanating from the data, then collating these codes into themes using a thematic map of the analysis to interpret the data as a whole. Themes were then further reviewed and refined to formulate clear definitions and names for each. The coding framework was guided by inductive codes³⁵ which were generated by the raw data and deductive codes³⁵ based on the existing literature. Following the coding process, the Consolidated Framework for Implementation Research²⁴ was used as an analytical lens to interpret the data relating to the Play Active implementation strategies. Mapping themes to the CFIR enabled examination of how individual, inner and outer contextual factors²⁴ interacted to shape the implementation of Play Active in low SES and regional/remote ECEC services.

Results

Most participants had worked in the ECEC sector for more than ten years, and in their current service at the time of participation for more than five years. All participants were female and aged 28-60 years old. Three held bachelor degrees, three had postgraduate qualifications and the remaining held post-secondary qualifications (i.e., diploma or advanced diploma). Eight were from Western Australia, five were from South Australia and two were from Queensland.

Overall, three key themes were generated from the data that described participants' perceptions of the barriers and facilitators to implementing Play Active in their service: capacity to implement a new intervention, accessibility of the intervention, and place-based realities. Table 1 provides a summary of the sub-themes within each theme.

[Table 1]

Capacity to implement a new intervention

Capacity to implement a new intervention was identified as a key theme which influenced the implementation of Play Active for services in low SES and regional/remote areas. This theme reflected participants' perceptions of their ability to implement a new intervention (Play Active) alongside existing demands. Participants identified several barriers and facilitators, particularly in relation to time, competing priorities and support.

Staff time

Directors perceived that ECEC services located in low SES and regional/remote areas may have less time to allow staff to complete professional development compared to those located in

metropolitan and higher SES areas. However, Play Active implementation strategies, such as the tailored policy, were perceived as helpful strategies for time-poor directors:

“I don’t have a policy team that do everything [like a service in a high SES or metropolitan area would] so it’s very helpful for smaller services to have a template that you can just make your own.” *Director 1*

The short video format of Play Active’s professional development, coupled with the ability to pause at any point and return to complete the videos, was seen as a facilitator to implementing Play Active. This was identified most frequently in regional and remote areas who often do not have staff cover to allow time to complete professional development:

“I think because they’re short [professional development videos], staff can get them done, and revisit too if it’s something that they want to go back to, they’re not having to sit through an hour-long professional development, they can go back to that video.” *Director*

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Competing priorities

The Australian ECEC sector is a highly regulated industry and participants perceived implementing new interventions which are not audited or required as challenging. While this issue was not perceived as specific to low SES and regional services, it was perceived to be more challenging to prioritise:

“It [new interventions] comes in a long line of other things you’re trying to get across, you’ve got annual competencies, and so much information gets thrown out, new laws come in, new requirements come in.” *Director 1*

ECEC services are also required to maintain staff to child ratios to ensure the safety of children. This was perceived by participants to create challenges in allowing staff time to complete

professional development, particularly in regional and remote areas who do not have casual or relief staff to cover time spent completing professional development:

“Because we’re ratio based all the time, that [completing professional development] becomes a second priority, when someone calls in sick or something like that happens. Maintaining the ratio quickly becomes the first priority.” *Director 2*

Support

Support at an organisational level was perceived by participants as an instrumental part of having capacity to implement a new intervention such as Play Active, as well as allowing individual services the freedom to choose which interventions to implement. Though this was not perceived as unique to services in low SES or regional areas, having support at the service level, i.e., between educators and/or between the director and educators, was perceived as a facilitator to implementing new interventions like Play Active:

“I think if someone really has issues [completing professional development], we’ve got a lot of people that they [educators] could ask. Not like at a stand-alone service where they may only have one early childhood teacher or the director’s really busy, we’ve got a lot of support for our staff.” *Director 4*

Creating ‘champion’ roles for staff who are particularly motivated or interested in a new intervention was also perceived to enable a smoother transition when implementing new interventions:

“That’s where we’ve created lots of different champion roles for our team, where they have a strength [in a particular topic e.g., physical activity] and they are working towards that [implementing it in a service].” *Director 6*

Accessibility

Participants perceived that there may be additional accessibility barriers to implementing Play Active for services located in low SES and/or regional and remote areas such as financial considerations and technology. Participants also expressed that Play Active implementation strategies may work to reduce the impact of these accessibility-related barriers.

Cost and funding

Participants felt that, particularly in regional areas, there were more likely to be stand-alone and not-for-profit ECEC services, who experienced greater financial barriers compared to for profit and services part of large childcare providers, thus making paid interventions less accessible to them:

“Most of the regional areas childcare centres are non-profit organisations and run by a community organisation. They are not financially well off. So, with all this membership, I think it is one of the hurdles like we have, you know. I think we have so many subscriptions already that are really needed in [the day-to-day] running [of] the centre.” *Director 8*

For stand-alone and not-for-profit services, participants perceived that more time and planning was required to budget for implementing a new intervention like Play Active:

“We don’t have any, like for us to probably implement this [Play Active intervention], it would have to be, it’s not just something we would be able to just do. It would have to be put into the planning, be money set aside in the next financial year to be able to do all of this.” *Educator 3*

However, cost was not perceived as much of a barrier by services who were part of large ECEC providers and organisations, despite their geographic location or SES status, where additional support through funding new interventions and initiatives was provided:

“It’s good, like, [provider name] pay for our membership [for additional interventions or programs] which is good, but I don’t know how that would compare to other companies whether they would be willing to pay for it.” *Director 3*

Participants appreciated that Play Active could be implemented at a relatively low cost, which was perceived as a facilitator particularly by stand-alone services in regional areas:

“I think the good thing about it is you don’t need to spend a lot of money on resources for outdoor activity and things like that... So obviously centres that are a little bit more in those disadvantaged areas or don’t have the money to spend on lavish resources and things like that.” *Director 5*

Technology

Technology was perceived by participants as both a barrier and an enabler to implementing Play Active in their services, depending on internet quality, especially for those in regional and remote areas. Participants felt that most ECEC services, including in low SES and regional and remote areas, would have access to the Play Active website to complete the professional development and access resources:

“A lot of people have access through phones and emails and internet. That’s the way everyone is moving these days is through technology, so I think that it’s the best way for everyone to have access to it.” *Director 3*

Online resources and professional development were perceived to reduce burden for regional and remote services who often had to travel to, or otherwise miss out on, professional development opportunities. However, participants in remote areas often expressed that they experienced less than desirable internet connectivity making it harder for them to complete professional development and access online resources quickly:

“Down here we do have trouble with the internet. It quite often drops out, so sometimes it’s handier to have a paper copy. Well, our internet works, but it’s not real flash.” *Director*

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Some participants noted that the hard copy resources, provided as part of the Play Active membership pack, were seen as helpful for staff who were not confident with technology, or for regional and remote areas with poor internet connectivity:

“I think with having a hard copy, it allows people, your older staff, who aren’t familiar with accessing things online, to have the hard copy they can flick through and even scribble on.” *Educator 2*

Place-based realities

Place-based realities related to the specific SES and geographic context of the participants and the ECEC services in which they worked. Being located in low SES and regional and remote areas introduced several additional barriers which ECEC services were perceived to face when implementing a new intervention such as Play Active, including the availability of staff and lack of professional development opportunities.

Staff availability

ECEC services located in regional and remote areas were perceived to face significant barriers in terms of recruiting qualified staff, particularly when local training institutions do not offer childcare qualifications. Participants perceived that their focus was on recruiting qualified staff rather than implementing new interventions:

“When you’re sort of a regional area and you know you’re trying to recruit, we already know educator shortages is pretty high up there [on a list of challenges faced by ECEC services in regional areas]. You’re either going to get, like, people from actually [an area] that are

maybe trained, you know, I don't think they offer the diploma and the cert three at TAFE here." *Director 7*

Participants in regional areas felt that they had higher staff retention than other services despite their location, explaining that they put a lot of effort into retaining their staff due to difficulties recruiting. However, while directors explained they were generally able to retain their full-time and part-time staff, they experienced challenges when needing to give educators time off the floor to complete professional development such as Play Active; they were unable to find relief staff to cover for them:

"[services located in] Metro [areas] probably, maybe, might have more opportunities with staffing, they might have a casual base or they might have relief staff that come in or to enable that [completing professional development]." *Director 7*

Decreased availability of professional development opportunities

In general, participants in regional areas felt that it was hard to access professional development that is not available online, as it involved too much travel and cost. Participants perceived that Play Active's professional development being available for free and online to educators was a facilitator to implementing Play Active:

"PD [professional development] in rural areas is very hard to access. And having free PD is also good... I just think the ease of access would be a good thing for regional services."

Director 4

Service environment and context

The context and environment of the individual ECEC services of participating staff influenced how they implemented interventions like Play Active. The tailored policy for directors included as part of Play Active was seen as a facilitator to implementation, particularly for ECEC services in

regional areas. It was perceived to consider the context of the service rather than providing a generalised policy:

“I think policies and procedures have to be within context because if it’s not, it doesn’t make sense to the people who work here. And every service is different, every service is on a different site, every service has different things affecting it, whether it’s city or rural or wherever they are. So it [the policy] does need to be in context because otherwise it just won’t work.” *Director 12*

There were some perceived advantages to ECEC services being located in a regional area, with participants noting that such services are generally located on larger spaces compared to services in metropolitan areas thus providing more space for children to be physically active. Participants from regional areas felt they were able to provide more unique physical activity opportunities due to features of their property such as the presence of creeks and walking tracks, enabling nature play:

“Regional areas would be able to find more space to do things [related to opportunities for physical activity], I think in a built up environment, especially one of the services I worked at before was in a building, you know, they really struggle to get those, especially those four year old boys when they’re getting to that stage when they’re ready to run, kick balls and really get into full on active play, those services really weren’t set up for them.”

Director 4

Discussion

This research explored the barriers and facilitators to implementing the Play Active intervention, as well as potential adaptations to the intervention, as perceived by ECEC directors and educators working in ECEC services located in low SES and regional/remote areas of Australia. There were three key themes which described participants’ perceptions of the barriers and

facilitators of implementing Play Active in their service: capacity to implement a new intervention; accessibility; and place-based realities. Table 2 provides an overview of the perceived barriers and facilitators to implementing Play Active for ECEC services located in low SES and regional/remote areas of Australia.

[Table 2]

Overall, the findings suggest that Play Active implementation support strategies may support the equitable implementation for ECEC services located in low SES and regional/remote areas. Most of the identified barriers (lack of time, workforce shortages, sector demands) and facilitators (technology, low cost, short professional development format) to implementing Play Active were perceived as common to implementing any new intervention in ECEC services in low SES and regional/remote areas and were not specific to Play Active. These findings are consistent with a previous equity-focused study in the USA of the implementation of a physical activity and nutrition intervention in the ECEC setting where flexible training, ease of use, ongoing support, leadership and low start-up costs were identified as implementation facilitators in low SES ECEC services³⁶. However, some barriers and facilitators identified in this study were unique to the implementation of the Play Active intervention compared to implementation of other interventions in ECEC services in low SES and/or regional/remote areas of Australia.

One suggested adaptation to support the implementation of interventions including Play Active in ECEC services was appointing a ‘champion’ to lead this process. This ‘champion’ should be someone who is passionate about the intervention or topic or has pre-existing knowledge which will aid implementation. They would also model Play Active implementation strategies (i.e., daily use of the Play Active resource guide, completing Play Active professional development). Champions modelling such behaviours have been shown to increase motivation and

engagement among educators in relation to new interventions^{37,38}. Additionally, support provided at both the organisational level (i.e., from the larger provider) and the service level (i.e., from the service director or educational leader) was perceived as a facilitator to implementing a new intervention, particularly for stand-alone services and those in regional areas. Previous research has highlighted the importance of leadership support in implementing new policies and interventions in ECEC, and in increasing educators' ability and confidence to deliver new interventions³⁹. These findings suggest that implementation support strategies, such as appointing champions and engaging organisational and service leadership, should be considered when implementing Play Active in ECEC services working with priority population groups.

While time was perceived as a key barrier to implementing Play Active in ECEC services, this is not unique to ECEC services located in low SES and regional and remote areas³⁹⁻⁴¹. Participants perceived that Play Active's implementation support strategies, including the tailored policy development and short online professional modules, reduced the time required to engage with the intervention while also addressing geographical barriers experienced by regional and remote services. Previous research similarly suggests that online professional development is a feasible approach for the ECEC sector^{42,43}. Furthermore, physical activity specific professional development, which is currently not widely available in the ECEC sector⁴², can increase educator confidence in providing and promoting physical activity with children in their care^{44,45}. These findings suggest that flexible, technology-enabled implementations strategies may be particularly important for supporting implementation in priority population ECEC settings. Although unreliable internet connectivity remained a concern for some regional and remote services, participants considered the printed Play Active resources included in the membership pack an important strategy for reducing this barrier⁴⁰.

Perceptions of the affordability of Play Active differed according to service context. Participants from large providers generally did not perceive cost as a barrier, whereas those from independent services, which are often located in regional and remote areas, reported that financial constraints meant every membership, no matter the cost, required budgeting. However, participants noted that Play Active could be implemented using existing equipment and resources, reducing the need for additional expenditure. Previous research has identified that financial costs associated with providing physical activity (i.e., purchasing materials or resources to provide active play) are seen as a barrier, particularly in ECEC services located in low SES areas^{45,46}. These findings suggest that Play Active's low-cost design and emphasis on using existing resources may help address financial barriers commonly experienced by ECEC services in low SES and for independent services.

Participants from regional ECEC services described persistent workforce shortages, including difficulties recruiting qualified educators and maintaining a pool of relief staff, which limited opportunities for staff to complete the Play Active professional development. Although workforce shortages and challenges exist across the ECEC sector, regional and remote ECEC services face more acute challenges in attracting and retaining staff, so much so that in 2021 10% of ECEC services in outer regional, remote and very remote areas had a temporary waiver in place for one or more of the Australian national quality standards related to staffing requirements⁴⁰. Play Active's short online professional development was perceived to reduce barriers in accessing and participating in professional development for those staff working in regional ECEC services⁴⁰. These findings highlight the importance of considering equitable implementation, as geographic disadvantage can exacerbate implementation inequities, even when intervention design is consistent across settings.

Overall, participants identified workforce and time constraints as key barriers to implementing new interventions in ECEC services, although these challenges were not perceived as unique to services located in low SES or regional and remote areas. However, Play Active's implementation support strategies², including short online professional development, digital resources and tailored policy development, were perceived to facilitate implementation by reducing these barriers, particularly in priority population settings. Future research and evaluation of Play Active may focus on the 'reach' of the intervention to ensure that it is reaching priority populations who could benefit from increasing young children's physical activity levels, health and development.

Strengths and limitations

This study was exploratory and therefore included a sample of self-selected participants. The findings may not be representative of the broader population of ECEC service directors and educators in low SES and/or regional/remote areas. However, generalisability is not the purpose of qualitative research⁴⁷ which often uses smaller samples to enable the collection of in-depth information and provide direction for further research. Another limitation was that all participants were female, which is reflective of the ECEC workforce⁴¹, were aged over 30 and most spoke English as their first language. All but three participants were directors. Additionally, some participants had not yet begun implementing Play Active and as such based their answers on similar interventions they had previously implemented. Future research should consider the views of more educators, male ECEC staff and participants from culturally and linguistically diverse backgrounds.

Conclusion

This research set out to determine the perceived barriers and facilitators of ECEC staff when implementing Play Active which are unique to ECEC services located in low SES or regional/remote areas, and to identify potential adaptations to the intervention. Findings suggest,

for the most part, that Play Active may meet the requirements of ECEC services located in low SES and regional/remote areas. Participants perceived that the key implementation barriers experienced were due to staffing and time constraints, which are not unique to ECEC services located in low SES and regional/remote areas, but may be experienced more acutely in these areas. Play Active implementation support strategies (online delivery, short format professional development) were perceived as effective in reducing the extent to which these barriers impact implementation. Only one adaptation to the Play Active intervention was suggested; the addition of a champion for each service to lead implementation of the intervention. Further research of the equitable implementation of Play Active should include a larger sample size and a mixed methods approach to gain a deeper and more representative understanding of potential adaptations to the Play Active intervention to ensure equitable delivery, uptake and benefit for all children.

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Tables:**Table 1:** Themes and sub-themes

Themes	Sub-themes
Capacity to implement a new intervention	Time
	Competing priorities
	Support
Accessibility of the intervention	Cost and funding
	Technology
Place-based realities	Staff availability
	Decreased availability of professional development
	Service environment and context

Table 2: Barriers and Facilitators to Implementation of Play Active

Barriers	Facilitators
Lack of time	Technology
Geographical isolation	Online professional development and resources*
Workforce shortages	Low cost*
Poor internet quality	Organisational support
Sector demands	Short professional development format*
	Tailored Policy*

* Indicates barriers or facilitators perceived as unique to Play Active compared with the broader ECEC sector.