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## RESEARCH ARTICLE

# Barriers and enablers to a healthy food environment in Australian childcare services: Exploring directors' perspectives

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## Abstract

**Issue Addressed:** Early childhood education and care (ECEC) settings are ideal environments to optimise nutrition and positively influence children's food behaviours. However, recent research has identified the need to improve nutrition policies, food provision, and mealtime environments in Australian ECEC settings. This study explored the perceptions of ECEC directors regarding barriers and enablers to a health-promoting food environment within ECEC services.

**Methods:** Eleven directors from ECEC services in Nerang, Queensland, and surrounding areas, participated in qualitative interviews between March and May 2021. Transcripts were analysed using qualitative content analysis that followed a deductive-inductive approach employing nutrition-related domains from the Wellness Child Care Assessment Tool, these being: (i) nutrition policy; (ii) nutrition education; (iii) food provision; and (iv) mealtimes. Transcripts were coded independently by two researchers in NVivo and consensus for barriers and enablers was achieved through discussion.

**Results:** Barriers and enablers were reported across four domains (nutrition policy, nutrition education, food provision, and mealtimes). Comprehensive nutrition-related policies were an enabler to a healthy nutrition environment but were sometimes described as lacking detail or customisation to the service. Nutrition education for children was described as competing with other activities for time and resources in an already-crowded curriculum. Financial and time pressures faced by families were a barrier to healthy food provision in services where families provided food for children. The ability of staff to sit with children and engage in conversation during mealtimes was an enabler; however, competing demands on time and the unavailability of food for staff were cited as barriers to health-promoting mealtimes.

**Conclusions:** Directors in ECEC services report both barriers and enablers to a healthy food environment. Nutrition policies were an enabler when comprehensive and relevant but a barrier when vague and not tailored to the service environment. ECEC services should be supported to develop and implement service-specific nutrition policies and practices by engaging with parents and staff.

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**So What?:** The barriers and enablers reported in this study should be considered when designing and implementing future evidence-based interventions to improve the nutrition environment in ECEC services.

**KEYWORDS**

child day care centres, food services, health education, nutrition policy

## 1 | INTRODUCTION

Food behaviours learned in the first 5 years of life have a lasting impact and are critical to growth, wellbeing, nutrition status, brain development and developmental trajectory.<sup>1,2</sup> The behaviours learned in these formative years also traverse into adulthood, impacting long-term weight status and future chronic disease risk.<sup>3</sup> Decreased diet quality in childhood is associated with poorer educational outcomes which,<sup>4</sup> in turn, impacts socio-economic outcomes in adulthood.<sup>5</sup> Research investigating diet quality among Australian children identified that less than 5% of children consumed the recommended number of vegetables,<sup>6</sup> while discretionary foods and drinks are among the top contributors to energy, added sugars, saturated fat and sodium.<sup>7</sup> Diet is a significant risk factor for developmental outcomes<sup>2</sup> and chronic disease,<sup>8</sup> highlighting the need for interventions to improve the quality of children's diets. In Australia, almost half (46%) of all children aged 6 weeks to 5 years attend an early childhood education and care (ECEC) service and spend an average of 25 hours per child per week at the service.<sup>9</sup> It is generally accepted that at least 50% of the recommended dietary intake should be consumed while attending an ECEC service.<sup>10</sup> Thus, ECEC settings are an ideal environment to optimise nutrition and positively influence children's food behaviours.

The Australian ECEC setting is comprised of centre based day care, family day care, and outside school hours care services.<sup>9</sup> ECEC services comprising a range of organisation types, including private operators, and community and non-profit organisations, employ a workforce comprising educators (76%), early childhood teachers (6%) and centre directors (6%).<sup>11</sup> Australian ECEC services must adhere to the National Quality Framework (NQF); a system that regulates education and care by benchmarking against National Quality Standards (NQS).<sup>12</sup> Implementation of the NQF is guided by the Australian Children's Education and Care Quality Authority (ACECQA), while assessment and rating of ECEC services against the NQS is undertaken by the regulatory authority in each state and territory.<sup>12</sup> The NQS address nutrition in one element (out of 40) and requires services employ practices that promote a food environment that supports child health and wellbeing, for example, ensuring that policies and procedures relating to nutrition and dietary requirements are in place.<sup>12</sup> The intention of such centre-based policies and procedures is to inform staff and parents about how the ECEC service operates and intends to conduct its services.<sup>13</sup> Practices that support the service to meet the standards, such as strategies to meet children's nutritional needs and delivery of educational experiences that facilitate children taking greater responsibility for their own health and wellbeing, may be outlined in the policies and procedures.<sup>12</sup> The NQS

also require minimum staff ratios and qualifications (eg, 50% of staff must hold at least an approved qualification at the diploma level and centre director to hold an approved degree);<sup>12</sup> however, staff in Australian ECEC services have revealed that their qualifications included limited nutrition education.<sup>14</sup>

Despite a legislated standard for children's education and care in Australia since 2012,<sup>13</sup> a national and coordinated approach to improving food environments in ECEC services is lacking. Several recent Australian studies have identified examples of unhealthy food environments in ECEC services.<sup>15–19</sup> For example, a New South Wales study that conducted detailed menu reviews for 69 ECEC services reported that none were compliant with recommendations for daily serves of vegetables, only one (1%) for meat/alternatives, 10 (14%) for fruit and vegetables, nine (13%) for breads and cereals, 24 (35%) for dairy and only three (4%) for discretionary foods.<sup>16</sup> Similar results have been reported for lunchbox services.<sup>18</sup> Another study evaluated the nutrition policy from a company that provided ECEC services at over 300 locations in Queensland, Australia, and found that the policy lacked information about the type, quality, and amount of food children should be given.<sup>19</sup> In addition, mealtimes were observed in 10 ECEC services and revealed limited instances of role modelling, with no educators observed to consume an entire meal with the children.<sup>19</sup> Strong and comprehensive nutrition policies support ECEC services to implement appropriate and consistent practice; a crucial strategy to establishing a healthy food environment.<sup>20</sup> Nutrition policies also guide educators in their approach to role-modelling and behaviours towards nutrition<sup>21</sup> and children's dietary intake.<sup>22</sup> However, application of nutrition policies in practice require ECEC staff to have the capacity and capability to understand, implement, and actively engage with the policy for intended benefits to be realised.<sup>23</sup>

Evidence-based approaches to creating an effective health-promoting food environment, including nutrition education, food provision, and mealtime environments, should address the perceived place-based challenges and barriers of ECEC centre staff.<sup>24</sup> Challenges and barriers regarding the implementation of nutrition guidelines<sup>25</sup> and nutrition-focused interventions<sup>26,27</sup> in ECEC settings have previously been explored. Implementation of nutrition policy and practice, more broadly, has also been investigated; however, this study used theoretically derived factors.<sup>22</sup> An open exploration of barriers and enablers to a health-promoting food environment in ECEC settings is notably absent. Centre directors are reported to be the 'gatekeepers' within ECEC services<sup>28</sup> and provide a unique and comprehensive perspective of barriers and enablers impacting the nutrition environment given their leadership and decision-making roles

within ECEC services.<sup>29</sup> Therefore, the purpose of this study was to explore centre directors' perceptions of barriers and enablers to a health-promoting food environment, including nutrition policy, nutrition education, food provision, and mealtimes, within ECEC services operating in Nerang and surrounding areas in Queensland, Australia.

## 2 | METHODS

### 2.1 | Study design

This pragmatic study was conducted as part of a university-community collaboration Griffith University-Nerang Alliance (GU-NA) that engages participating ECEC services ( $n = 23$ ) and schools ( $n = 7$ ) in a disadvantaged area of South-East Queensland (Nerang; IRSD Quintile 2)<sup>30</sup> to design and implement health-focused initiatives.<sup>31</sup> The present study employed qualitative methods to understand director perspectives of barriers and enablers to implementing a health-promoting food environment. A deductive-inductive approach to content analysis was applied as the method permitted a comprehensive list of barriers and enablers to be compiled<sup>32</sup> using the four nutrition-related domains from the Wellness Child Care Assessment Tool (WellCCAT), these being: (i) nutrition policy; (ii) nutrition education; (iii) food provision; and (iv) mealtimes.<sup>33</sup> This study was approved by the Griffith University Human Research Committee (Reference No. 2020/305) and reported in accordance with Standards for Reporting Qualitative Research (SRQR).<sup>34</sup>

### 2.2 | Recruitment

This study was conducted as part of a nutrition-focused initiative directed by the GU-NA collaboration. Directors from ECEC services ( $n = 12$ ) that had agreed to participate in the initiative were emailed information about the study and invited to participate. Directors who had chosen not to participate in the initiative were, by default, not invited to participate in this study. All ECEC services were centre-based services. Eleven directors representing 48% of the GU-NA ECEC cohort agreed to participate and provided consent. A separate interview time was scheduled with each director.

### 2.3 | Data collection

Data was collected through semi-structured interviews. An interview protocol was developed to guide the exploratory investigation based on the four nutrition-related domains from WellCCAT.<sup>33</sup> The interview protocol was developed by the research team, supported by an expert with experience in the ECEC sector, and included questions that explored barriers and enablers within each of these domains as well as the general food environment (see Table 1). The interview protocol was pilot tested with members of the research team to check question design and sequence. A researcher who

was experienced in conducting qualitative interviews (LV) conducted all telephone interviews. Interviews were audio recorded and transcribed verbatim, and all transcriptions were compared to the corresponding audio recording to ensure an accurate account of the interview was captured. Participants were assigned pseudonyms to protect their anonymity.

### 2.4 | Data analysis

Transcripts were coded in NVivo (Version 12)<sup>35</sup> using qualitative content analysis.<sup>32</sup> The categorisation matrix was predetermined (level 1) according to the four domains previously described. An additional category, 'other', was created to capture potentially relevant insights that did not belong to one of the predetermined categories. Two subcategories (level 2) were created ('barrier' and 'enabler') under each of the main categories. All transcripts were independently coded by two researchers (Amy Kirkegaard, Chris Irwin). Codes (level 3) were identified inductively from features of the data relevant to the category and subcategory. Once all transcripts were coded, both coding researchers met to discuss and consolidate codes for each category and subcategory. A name and description for each code was developed. Three members of the research team (Amy Kirkegaard, Chris Irwin, Lisa Vincze) reviewed the codes and consensus was achieved through discussion. Illustrative quotes for each code were identified from the transcripts. In addition, categories were identified for data that described ECEC service practices (ie, policy development approach, food provision method) and this information was quantified where appropriate.

### 2.5 | Trustworthiness

Several strategies were used to enhance the credibility of research findings reporting in this study.<sup>36</sup> Data were collected from services that employed a range of food provision methods, representing approximately half of ECEC services participating in the GU-NA. Throughout data analysis, two or more researchers were involved in decisions relating to coding, analysis and interpretation of interview transcripts. Throughout the study, the research team reflected on and discussed individual assumptions and preconceived ideas, and the potential for these to influence study design, data collection and analysis, and reporting.

## 3 | RESULTS

ECEC directors completed a telephone interview between March and May 2021. The average duration of interviews was 23 minutes (range 12–37 minutes). Participant demographic information is outlined in Table 2. Three models for food provision were reported by directors: provided by a parent (parent-provided food;  $n = 5$ ), provided by an external catering company (catering-provided food;  $n = 4$ ), and prepared by a chef/cook at the service (service-provided food;  $n = 2$ ). In this study, 'parent' included a parent, guardian, or grandparent who

**TABLE 1** Interview protocol outlining the inquiry logic and associated questions.

Inquiry logic	Interview question/s	Prompting question/s
To identify participants' nutrition-related responsibilities	1. Describe your role at [service name].	a. Do you have any responsibilities/roles related to nutrition or food?
To explore participants' attitudes and beliefs about the nutrition environment in childcare services	2. What does a healthy nutrition environment in early childcare look like?	a. What does a healthy nutrition environment include? b. What creates a healthy nutrition environment? c. Why might it be important to have a healthy nutrition environment in early childcare?
To identify nutrition-related areas that are working well and not working well and why, ie, enablers and barriers	3. What is working well to support the nutrition environment at your service? 4. What could be improved in the nutrition environment at your service?	a. What facilitates that? a. What are the barriers to that?
To identify enablers and/or barriers to nutrition policy review and implementation	5. Describe how your service reviews and implements the nutrition policy.	a. What are the barriers or facilitators to the nutrition policy review and implementation?
To identify enablers and/or barriers to nutrition education for children, parents and carers, and staff	6. Tell me about nutrition education within your service? Who provides it? Who receives it?	a. What are the barriers or facilitators to nutrition education? b. What opportunities are made available for staff to develop their nutrition education? What are the barriers or facilitators to that?
To identify enablers and/or barriers to menu planning and meal provision	<i>If service- or contract provided food:</i> 7. Describe how your service plans and provides meals.  <i>If parent-provided food:</i> 7. Describe how your service encourages parents to provide nutritious food for their children to bring. 8. Does your service use nutrition guidelines?	a. What are the barriers or facilitators to planning and providing nutritious meals?  b. What are the barriers or facilitators to nutritious parent-provided food?  <i>If yes:</i> a. Which nutrition guidelines does your service use? <i>If no:</i> b. Do you think nutrition guidelines should be used in any way at your service? c. What are the barriers or facilitators to implementing nutrition guidelines?
Identifying facilitators and/or barriers to promoting healthy nutrition and behaviours during mealtimes	9. Describe how your service promotes healthy food and behaviours during mealtimes.	a. What are the barriers or facilitators to promoting healthy food and behaviours during mealtimes?
Identifying gaps in the support service staff receive	10. What would support you to address the barriers discussed today to support the healthy food environment at your service?	

was responsible for the care of a child. Barriers and enablers were identified for each domain of interest (see Table 3). No additional themes beyond the four domains that were pre-defined were identified as outlined in (Table 3).

### 3.1 | Nutrition policy

#### 3.1.1 | Policy development

Some directors (n = 4) reported purchasing the service's nutrition policy from an organisation that specialised in writing policies for childcare services (eg, Australian Child Care Alliance Queensland), while others (n = 3) indicated that the policy was provided by the main administrative

centre for the ECEC service (ie, head office). These approaches to policy development sometimes led to policies being perceived by participants as 'generic' and 'not tailored' to the service environment.

Our centre uses policies that are generic from a company that makes them for childcare centres. So, they are not overly personal for each independent centre. (Sarah)

Other services adapted the policy to be 'personalise[d] to our centre' (Evelyn), which was perceived to be an enabler. Conversely, policies that were not tailored nor containing appropriate level of detail were described as a barrier to promoting a healthy food environment. For example, one director from a service that used catering-provided food but permitted parents to provide food for other meals

**TABLE 2** Demographic characteristics of participating directors (n = 10); one director declined to provide demographic information.

Characteristics	Director n (%)
Gender	
Female	10 (100)
Age	
19-29 years	2 (20)
30-39 years	4 (40)
40-49 years	2 (20)
50-59 years	2 (20)
Highest level of education	
Year 9 or below	-
Advanced Diploma/Diploma	5 (50)
Bachelor degree	1 (10)
Postgraduate degree	4 (40)
Experience in early childcare	
5 years or less	-
5-14 years	6 (60)
15-24 years	0 (0)
25 years or more	4 (40)

(eg, breakfast or late-afternoon snack) stated that policies not adequately outlining the food and nutrition standards to which the service aspired were difficult to enforce.

... the lunchbox side of it is pretty vague. It doesn't specifically say that we can ban anything or anything like that. ... When it comes down to saying, 'Oh, look, we don't think cordial is the best choice for your child,' I don't have a policy to back me up ... (Hannah)

However, one director expressed concern over the level of detail contained within the nutrition policy and the potential for consequences when policy measures were not met; describing the nutrition policy as a balance between being 'quite clear cut, but not too in-depth' (Nancy).

We have to be very careful what we do write and what we say that we're going to achieve, because if we don't, we're actually liable for that. (Nancy)

### 3.1.2 | Policy review

Directors described the complex policy environment within their respective services ('...we have a lot of policies, like a hundred or more ...', Nancy) and lack of knowledge and tools to contribute in a meaningful way to the nutrition policy ('It's just us having the knowledge and tools to know what we're talking about. We're not nutritionists...', Sarah). Engagement from parents varied between services and was described as both a barrier and enabler to policy review.

Parents never really give us much feedback in policies because I think they just don't want to read them... (Evelyn)

...through that program [food safety program], it is regularly consulted, with the community, families, and local councils as well as the staff within the service. We talk about what we have got in place and what we are doing and ... how it relates to those up-to-date findings, documents, and how we can improve things. So, it's a cross collaboration across all areas. (Heidi)

### 3.1.3 | Policy implementation

Directors described the degree to which the service and community understood, agreed, and engaged with the policy as impacting whether the policy was followed in practice. Staff were recognised as important enablers of the nutrition policy, with policy implementation dependent on having a 'consistent approach between management, educators, and ... across all rooms' (Heidi) and 'making sure they are keeping up to date [with policy updates]' (Hannah). However, parents were often described as being barriers to nutrition policy implementation. Jessica summarised parents' attitudes towards following policy directions around allergens by stating, 'a lot of parents just think that they don't have to follow it' and 'people are so blasé if it's not their child'. Another director reflected that 'nutrition and health ... is so individualised, ... so what I believe about nutrition and healthy eating would probably be different to my kindergarten teacher' (Robyn; service provided kindergarten to children aged 4-5 years). They also highlighted the need for an 'holistic approach' (Robyn) whereby the policy was implemented consistently by all staff.

## 3.2 | Nutrition education

### 3.2.1 | Curriculum and delivery

The degree to which nutrition education for children was formalised ranged from services that aimed to 'touch on it [nutrition education] regularly in the curriculum' (Jessica) to 'it's just fallen into our everyday practice ... it's just something we do' (Robyn). Several directors expressed concerns that the curriculum was already crowded ('we've got so many other outcomes we have to achieve', Nancy), which participants believed resulted in limited time to include formal nutrition education. Nutrition education was most frequently described as being delivered during mealtimes. Services provided information for parents ('I've put some general [nutrition] information [on the parent resources board]', Lisa) and invited them to participate in 'collaborative experience[s]' (Hannah) with children, such as growing fruits and vegetables in a community garden, but requested support by having 'more regular, updated information or flyers that we could send out to parents' (Heidi). Directors also raised concerns about 'time or motivation' (Lisa)



**TABLE 3** Barriers and enablers to a health-promoting food environment in participating early childhood education and care services.

Area	Enablers	Barriers
Nutrition policy	<ul style="list-style-type: none"> <li>Policy is tailored to service environment</li> <li>Stakeholders engage in policy review</li> <li>Staff and families understand policy requirements</li> <li>Policy outlines clear expectations for healthy eating and practices</li> <li>Policy is consistent with service and staffs' personal philosophies</li> </ul>	<ul style="list-style-type: none"> <li>Policy initially developed without service input</li> <li>Stakeholders do not engage in policy review</li> <li>Staff lack knowledge to contribute to policy review</li> <li>Large number of policies compete for time and attention</li> <li>Policy lacks detail</li> <li>Families do not follow the policy</li> <li>Addressing issues with families is challenging and sensitive</li> <li>Staff do not enforce policy</li> </ul>
Nutrition education	<ul style="list-style-type: none"> <li>Age-appropriate nutrition education and experiences are regularly embedded in the curriculum</li> <li>Children and families are taught 'what' and 'why' about healthy eating</li> <li>Staff are provided access and time to engage in professional development</li> <li>Staff are motivated and implement healthy behaviours in their own lives</li> <li>Families are provided with access to engaging and relevant information, resources, and events</li> <li>Families are engaged in children's learning</li> <li>Nutrition education is fun, interactive, and integrated into service activities</li> <li>Service environment promotes and educates children about healthy eating</li> <li>Nutrition professional provides education to staff, children, and families</li> </ul>	<ul style="list-style-type: none"> <li>Staff and parent education is not a priority</li> <li>Staff lack knowledge and time to educate families</li> <li>Families lack time and motivation to engage with education provided by the service</li> <li>Service does not have suitable educational resources for families and staff</li> <li>Large number of outcomes other than nutrition that compete for space in the curriculum</li> <li>Staff do not implement healthy practices in their own lives</li> <li>Staff lack time to participate in own education</li> </ul>
Food provision	<ul style="list-style-type: none"> <li>Catering company assures nutritional adequacy and variety (C)</li> <li>Service has emergency food (P)</li> <li>Staff support families with education, feedback, and resources (P)</li> <li>Families and staff provide feedback on menu (C; S)</li> <li>Staff are trained and competent in food handling and hygiene</li> <li>Being inclusive and flexible around food provided (allergies, special occasions)</li> </ul>	<ul style="list-style-type: none"> <li>Budget, delivery issues, and preparation area impact service menu (S)</li> <li>Service does not have emergency food (P)</li> <li>Families lack the time and finances to access healthy food (P)</li> <li>Families lack knowledge and motivation to provide healthy food (P)</li> <li>Staff are provided with limited opportunity to influence food provided by families or catering company (C; P)</li> </ul>
Mealtimes	<ul style="list-style-type: none"> <li>Creating an enjoyable and social environment</li> <li>Staff engage children in positive conversations about nutrition</li> <li>Staff sit with children and role model healthy behaviours at mealtimes</li> <li>Staff encourage children to choose healthy foods</li> <li>Mealtime structure is flexible and allows children to eat when hungry</li> <li>Staff promote children's autonomy and agency</li> </ul>	<ul style="list-style-type: none"> <li>Children's limited exposure to healthy food and poor eating behaviours</li> <li>Staff do not engage in nutrition-related conversations at mealtimes</li> <li>No food for staff to eat with children at mealtimes</li> <li>Competing demands on staff during mealtimes</li> <li>Staff personal food-related beliefs and experiences</li> </ul>

Abbreviations: C, catering-provided food; Catering company, a company that provides ready-to-heat meals; Emergency food, food provided by the service to children who do not have adequate or appropriate food in their lunchbox; Food handling and hygiene, method of handling, preparing, and storing food in a way that prevents food-borne illnesses, P, parent-provided food; S, service-provided food; Stakeholders, include service staff, families, and children.

and supporting parents to build their food and nutrition literacy 'without them feeling like we're judging them'. (Margot).

### 3.2.2 | Nutrition education resources

Directors indicated that time and access to appropriate, evidence-based resources were both enablers and barriers to

nutrition education for staff. Some directors described their role as being responsible for identifying and sharing relevant information with staff, while providing staff with 'time to research and reflect on their practices' (Nancy). However, other directors expressed difficulty finding 'appropriate things [resources] that are quick and straight to the point...' (Jessica) for staff to refer to. Nancy highlighted the importance of staff education:

...they're not fully aware what that looks like in terms of healthy eating practices and how are we expecting them to implement it. So, I think it has to start with educators having full awareness.

Several directors commented that support from a mentor or nutrition specialist was needed to develop staff competence (ie, knowledge and skills) regarding provision of a healthy food environment.

... we get a lot of pressure to ensure that we're being inclusive, and ... pressure from parents, because they want them [children] to try things [new foods]. And sometimes I think it would be nice to have some form of a mentor that would go around the centres and support some of that practice. (Nancy)

### 3.3 | Food provision

#### 3.3.1 | Catering-provided food

Directors who used a catering company ( $n = 4$ ) to plan and provide the service's food reported that this process reduced their 'stress and worry' (Heidi) as they did not need to source ingredients or worry about the nutritional adequacy of their menu.

When we get a delivery, all the rice is in separate bags, the sauces are in a separate bag, the veggies are in a separate bag. So, there's always an option for the children to eat something there. (Robyn)

However, some directors expressed loss of autonomy and 'control over the foods that are eaten within the service' (Robyn) because of engaging a catering company. This was particularly relevant in the context of using mealtimes as an educational opportunity to prepare children in their final year of ECEC to transition to the school environment, where meals are not provided.

...we have hot meals every day, so they don't have a sandwich option. I think, looking at reality, children go to school with a sandwich in their lunch box. So, I think if we were able to have something that's similar to that, where we can educate them... (Robyn)

#### 3.3.2 | Service-provided food

For services that prepare food onsite (ie, by a chef/cook;  $n = 2$ ), directors described how the nutritional adequacy of the menu was addressed. For one, this involved employing an 'external service' (Emily) to design a seasonal, 4-week menu that included nutritional values and recipes, while the other developed the menu in consultation with staff and parents. Onsite food preparation gave the service more

flexibility over what food was provided but some challenges were identified. For example, Evelyn stated that there were constraints associated with the food preparation area ('...space is a bit limited at times' and that sometimes 'they [food retailer] substitute a food for something else...or they don't bring it' when the food order is delivered. Emily noted that children who had limited exposure to healthy foods at home could be resistant to eating the food served at the service.

Sometimes we have that barrier that children only eat junk food at home or only particular things at home, so then that can be a barrier to us, to be able to get them to eat here.

#### 3.3.3 | Parent-provided food

In services where parents provided food for children ( $n = 5$ ), directors described barriers to a healthy food environment as relating to a perceived lack of control over what was provided.

It's whatever the parents bring in their lunch box. So, you can talk until you're blue in the face, but it's what the parents bring. (Erin)

Knowledge, motivation, and time were cited by directors as factors they believed influenced parents when choosing foods to include in their child's lunchbox.

... it would be their [the parent's] upbringing, their background, their knowledge ... whether they can afford, because sometimes the healthier options are more expensive, and it's easier also for them to buy a lot of packaged stuff and just chuck that in, instead of making food. (Margot)

Services employed a range of strategies to improve children's nutrition, including encouraging children to choose healthy options before unhealthy options, and supporting parents by providing 'lots of healthy lunchbox ideas' (Jessica) and 'showing them [parents] a couple of the children's lunchboxes' (Lisa) as exemplars. Where parents did not provide enough food for their child, some services had emergency food available.

... we have fruit here, so if a child ... didn't have enough [food] and was hungry, we'd just ring the parents and ask if we could give them the piece of fruit. (Margot)

### 3.4 | Mealtimes

#### 3.4.1 | Meal and snack schedule

Directors described the structure of mealtimes in services ranging along a continuum. At one end were 'progressive' (Emily) and



'flexible' (Nancy) approaches, where services allowed children to choose when to eat, while at the other were service that encouraged children 'to mainly eat at specific times' (Erin).

### 3.4.2 | Mealtime environment

One service offered a self-serving option, which was described as both a barrier and enabler to good nutrition. Robyn described how giving the children choice over what they ate enhanced curiosity and participation in trying new foods:

I see children all the time, they come in, and not normally would eat vegetables and then, today they'll decide, I'm just going to have four pieces of carrot.

While, for other children, it meant that certain foods were avoided:

...they will never opt to take a spoonful of the peas, the corn and carrots out of the bowl, because that's a vegetable.

Directors described how staff created positive mealtime environments by sitting with children and discussing the foods children were eating, including the effects each food has on the body. However, directors noted that competing demands on staff time (eg, meeting the physical and emotional needs of children, legislated meal breaks for staff), meant that staff sometimes found it challenging to create a positive food environment.

If a child's not coping, then someone else is trying to help all the other children with meals. So sometimes that can be a challenge. (Evelyn)

If we're running a little low on staff—so we run a rest period from 12 till 2 where we halve the number of staff in the classroom—so if they're running late to [the children's] lunch, the girls struggle to monitor what's happening, what they're eating, if they're eating enough food and things like that. (Hannah)

## 4 | DISCUSSION

This study reports the perceived barriers and enablers to adopting a healthy food environment described by directors within a group of ECEC services in South-East Queensland, Australia. Understanding barriers and enablers from the perspective of ECEC service staff is necessary to inform the development of future initiatives that will support services to establish a health-promoting food environment. Overall, engagement with nutrition policies and education and support for educators, parents, and children, were identified as key barriers and focus areas for improvement.

Key barriers identified in the present study pertaining to the development and implementation of nutrition policies concerned the content of, and engagement with, the policy. Approved ECEC services are required by the Education and Care Services National Regulations to have policies and procedures relating to 'nutrition, food and beverages, dietary requirements' (p.167).<sup>37</sup> The focus of these regulations is to ensure services operate in a way that protects the health, safety, and wellbeing of children within their care.<sup>13</sup> Universal requirements for nutrition policies in ECEC settings have been identified as an enabler to delivering a healthy food environment<sup>38,39</sup> but, beyond the regulations, there is limited guidance regarding the content of nutrition policies. Clear, strongly worded nutrition policies are essential to support staff to implement recommendations and communicate expectations to the ECEC community.<sup>40</sup> However, some directors in this study were hesitant to be sufficiently detailed, reporting concern for non-compliance with legal requirements. This suggests that ECEC directors appear to experience challenges when interpreting national and jurisdictional regulations<sup>37</sup> and operationalising them at a service level. There is an opportunity to support services to better understand legal obligations while also specifying universal requirements to inform the development and implementation of clear service-level nutrition policies.

Directors in the present study identified parental disengagement as another barrier to nutrition policy development and implementation; a barrier also reported in US ECEC services.<sup>39</sup> Evidence-based standards from the World Health Organization advocate for parental engagement in policy development and implementation and cite the positive impact this has on creating a healthy food environment.<sup>41</sup> In the US, ECEC services addressed parental disengagement by discussing policy requirements during activities, such as a centre orientation or regular parent meetings.<sup>39</sup> Other strategies to engage parents, as identified in the NQS, include building strong partnerships with families to encourage parents to co-contribute to service decisions.<sup>12</sup> Such collaborative approaches provide parents the opportunity to influence the 'what' and 'how' of a health-promoting food environment, including how to communicate information to improve implementation of the nutrition policy.<sup>12</sup> However, further research is needed to explore parents' expectations regarding the food and nutrition environment in ECEC services, and how they wish to engage with the ECEC community (eg, using codesign methods) to shape that environment.

Several barriers to communication with parents were identified by directors in the present study, and included a lack of time and skill to converse with parents without them feeling judged. These barriers are not uncommon, with concerns about upsetting<sup>39</sup> or offending parents,<sup>42</sup> and educators lacking confidence<sup>14</sup> or time,<sup>42</sup> previously reported. Strategies to overcome these barriers and improve communication with parents include building respectful partnerships,<sup>39</sup> providing training to support staff in communicating with parents,<sup>42</sup> and engaging with a nutrition expert,<sup>14,26</sup> but these strategies clearly require access to greater resources and expert personnel. Regardless, it remains important to support educators to develop interpersonal and communication skills given the value placed on in-person communication (ie, workshops and family events at the centre) previously

reported by parents.<sup>43</sup> Training for these skills is currently limited within the mandatory training for Australian ECEC educators (ie, Certificate III and IV),<sup>44</sup> highlighting that, despite the desire to engage with parents about children's nutrition (eg, the quality of packed lunches), a lack of skills and confidence may see staff avoid these important conversations. Thus, more needs to be done to support staff to develop interpersonal and communication skills and emotional judgement.<sup>44,45</sup>

Appropriate staff education was identified by directors in the present study as an important enabler to the implementation of policy requirements, such as positive feeding practices, but described a lack of 'easy to use' nutrition-focused resources for staff; a sentiment echoed in previous research conducted in Australia.<sup>14</sup> In a study of 48 staff from Australian ECEC services, more than half of participants reported that they had searched for nutrition information on the internet; yet, 63% were not aware of the 'Get Up & Grow' resource collection—which are the key guidelines for childhood nutrition in ECEC—and only 12% had used them in practice.<sup>14</sup> Mandatory training for Australian ECEC educators does not appear to equip providers with the necessary skills related to nutrition<sup>14</sup> or feeding practices,<sup>46</sup> highlighting the importance of nutrition-focused professional development for staff. ECEC services require access to user-friendly and appropriate resources alongside staff professional development to enhance nutrition knowledge and implementation of nutrition policy. Opportunities to enhance formal professional education (ie, at the certificate or diploma level) for the ECEC workforce should also be explored.

Nutritional adequacy of food consumed by children while in care was impacted by the model of food provision employed within the ECEC service. Where parents provided food for their child, directors believed that a lack of financial resources was the reason some parents provided food that was unhealthy or inadequate in quantity. This is consistent with a previous review that identified cost as a key factor influencing parental decisions when packing lunchboxes for school-aged children<sup>47</sup> and emphasises the need for strategies that minimise the impact of financial constraints on parents' abilities to purchase healthy foods. In the ECEC setting, where it is relatively more common for services to provide food for children, previous research has identified financial resources as a barrier faced by ECEC services to the provision of nutritious food.<sup>40,48</sup> This is important given that previous Australian research identified a negative relationship between the nutritional adequacy of service menus and the daily cost of food per child.<sup>49</sup> While cost was not described as a barrier in the present study, further research is needed to understand how decisions about food provision are made by ECEC services, that is, the influence of cost and nutritional adequacy on choice of menu or catering provider. Reforming the nutrition environment to include universal high quality food provision for all children in ECEC services would promote food security and child development and reduce the burden on services.<sup>50</sup>

Nutritional adequacy was also influenced by poor eating behaviours that directors believed children developed due to limited exposure to healthy foods in the family environment. In practice, this meant that some parents provided discretionary foods because they

knew their child would eat it, while other children were resistant to eating food provided by the centre. Providers in a US study similarly perceived that children were unwilling to try new foods because they were not encouraged to consume a wide variety of nutritious foods in the home environment.<sup>38</sup> Parents in another US study wanted to learn from ECEC staff as they perceived them to be skilled in supporting children to form positive behaviours.<sup>42</sup> Indeed, educators' role-modelling, encouragement, and positive reinforcement—all components of the mealtime environment – have been shown to positively influence children's intake of healthy foods.<sup>40,51</sup> This was echoed by directors in the present study, who described a positive mealtime environment as an enabler to supporting good nutritional behaviours in children. However, the lack of food for staff to consume was identified as a barrier to a positive mealtime environment in the present study. This mirrors recent results from another Australian study, which indicated that staff at each of 10 ECEC services monitored (on a single day of observation) only ate the same foods as children at 19.6% of mealtimes observed.<sup>19</sup> This presents an opportunity for services to positively influence eating behaviours of children, but high quality food provision must still be addressed.<sup>50</sup> Universally provided meals for children and staff by ECEC services would expose children to a variety of nutritious foods and positive behaviours while providing an opportunity for educators to discuss and explore nutrition with parents.

Planned educational activities involving children have demonstrated effectiveness at promoting healthy food behaviours in ECEC settings.<sup>51</sup> In the present study, directors expressed 'lack of time' as a barrier to incorporating formal nutrition education in an already overcrowded curriculum. Instead, nutrition education was included informally as part of everyday practice (eg, during mealtimes). This is not a unique experience, with a US study reporting that childcare providers perceived mealtime conversations as a feasible approach to delivering nutrition education to children.<sup>52</sup> Strengthening nutrition education in mandatory training for educators should be prioritised and may enhance educator confidence to incorporate regular informal nutrition education within their daily practice. A systems approach that also invests in professional learning for educators would ensure the ECEC workforce have the capabilities to embed nutrition education within their current capacity.

## 4.1 | Strengths and limitations

Directors from ECEC services within a specific geographic area participated in this study; as such the results may not be generalisable to other geographic locations. However, the inclusion of services that employed different approaches to meal provision allowed different perspectives to be explored. Pilot testing of the interview protocol was conducted among members of the research team; however, this may have resulted in a protocol that was not tailored for participants. Future research should pilot test the interview protocol with a member of the target population (ie, a centre director) to ensure content and delivery is appropriate. In addition, analysis methods informed by

a pre-defined framework may introduce bias. To minimise this, the present study included general questions in the interview protocol, and an 'other' category in the categorisation matrix, to collect and analyse participant responses outside the pre-defined framework. Two researchers independently coded the transcripts and did not identify any additional categories beyond those included in the pre-defined framework.

## 5 | CONCLUSION

The barriers and enablers described by directors in this study are important considerations for future initiatives that aim to improve the food environment in ECEC services. Exploring the perceived challenges and opportunities facing staff employed within ECEC services is a critical step towards informing evidence-based approaches that aim to improve the nutrition environment within these services. Research investigating strategies to address barriers to nutrition policy development and implementation, engagement, and education of staff, children and parents is needed.

## AUTHOR CONTRIBUTIONS

*Conception and design of the work:* Amy Kirkegaard, Chris Irwin, and Lisa Vincze. *Data collection:* Lisa Vincze. *Data analysis and interpretation:* Amy Kirkegaard, Chris Irwin, and Lisa Vincze. All authors made substantial contributions to the writing of the manuscript and have approved the submitted version.

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## CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest to declare.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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