

Nutrition, physical activity and screen time policies and practices in family day care in NSW, Australia

Erin M Kerr^{a,g}, Bridget Kelly^a, Jennifer Norman^{a,b,c}, Susan Furber^{b,c,d}, Lara Hernandez^e, Megan L Hammersley^{a,c}, Sarah Ryan^a, Lisa Franco^b, Cecilia Vuong^f and Anthony D Okely^{a,c}

^a Early Start, Faculty of the Arts, Social Sciences and Humanities, University of Wollongong, NSW, Australia

^b Health Promotion Service, Illawarra Shoalhaven Local Health District, Wollongong, NSW, Australia

^c Illawarra Health Medical Research Institute, Wollongong, NSW, Australia

^d School of Health and Society, Faculty of the Arts, Social Sciences and Humanities, University of Wollongong, Australia

^e NSW Ministry of Health, Sydney, Australia

^f Health Promotion Service, South Western Sydney Local Health District, NSW, Australia

^g Corresponding author: emk833@uowmail.edu.au

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Key points

- We developed a policy review tool to assess the extent to which family day care service providers' policies adhere to national standards and relevant guidelines
- Service provider policies and practices were more likely to promote healthy eating compared with infant feeding, physical activity and screen time
- Service providers trained in the *Munch & Move* program were more likely to offer healthy eating and physical activity professional development to educators and have more comprehensive nutrition policies

Introduction

In Australia, family day care (FDC) is an approved Early Childhood Education and Care (ECEC) service where educators provide education and care for up to seven children aged 0–12 years, but only four children younger than school age (0–5 years), in a home environment.¹ More than 130 000 Australian children aged 0–12 years attended FDC in 2018²; comprising 12% of the ECEC sector (excluding outside school hours care services). Australian FDC services operate under a two-tiered structure: the service provider operates at the first tier at the organisational level and educators are registered through the service provider at the second tier providing education and care directly to the children. The service providers act as coordination units, monitoring and supporting educators to ensure they comply with service providers' policies as well as national standards and regulations.³

Munch & Move is a program designed to promote healthy eating, physical activity and reduced screen time in the ECEC sector.⁴ The program began in 2008 and was enhanced in 2016 with health promotion officers providing additional support to service providers⁵, to help disseminate training, resources and information to educators and/or families. Development work for *Munch & Move* was conducted with centre-based services, with adaptations appropriate to FDC, however, the impact of the program has only been evaluated in preschools.⁶ The aim of this study was to examine the effect of *Munch & Move* training on existing policies, resources and professional development used by FDC service providers that were designed to promote healthy eating and physical activity, and reduce screen time for children aged 0–5 years.

Methods

Study design and setting

A cross-sectional study was conducted with FDC service providers from South Western Sydney and Illawarra Shoalhaven Local Health Districts in NSW, Australia, from February to September 2018. All FDC service providers in these districts ($n = 85$) were invited to participate in a telephone or face-to-face survey and policy review. The list of service providers was obtained from the Australian Children's Education & Care Quality Authority (ACECQA).⁷

Data collection measures: policy review and survey

Service providers' practices and policies were assessed in two ways: policy review and survey. We defined a service provider policy as a formal written policy owned by the service provider. To undertake the policy review, four separate policy review tools were developed to assess policies containing guidelines about nutrition, infant feeding and breastfeeding, physical activity and screen time. The policy review criteria were based on seven National and NSW nutrition and physical activity guidelines detailed on the 'Children's health and safety' resource page of the ACECQA website.⁸ Supplementary tables 1–4 outline the criteria in each policy review tool and the source of each criterion (available from: doi.org/10.6084/m9.figshare.16676296).

Researchers independently reviewed each policy twice and each individual criterion was categorised as either 'no information provided'; 'topic is partially covered'; or 'topic is fully covered'; and given scores of 0, 0.5, or 1.0, respectively. Policy scores were compared and inconsistent scores were determined by consensus. The total number of criteria covered were summed to give an overall score for each individual policy. Policies were classed as comprehensive if more than two-thirds of the criteria were covered.

A 25-item survey was developed by the authors focusing on policies, resources provided to families and educators, and the type of professional development accessed about infant feeding, nutrition, physical activity and screen time for children aged 0–5 years.

The survey was reviewed by 12 experts experienced in health promotion and research in ECEC settings from the University of Wollongong and NSW Health. The survey was tested with two FDC service providers from another local health district. The lead author and a research assistant conducted the 30-minute survey with first-tier FDC employees on the phone or in person. Service providers' postcodes were used to determine socioeconomic status and remoteness using standardised indices.^{9,10} Ethics approval was obtained from the University of Wollongong Human Research Ethics Committee (HREC/17/WGONG/139).

Data analysis

Statistical analyses were performed using IBM SPSS Statistics for Windows (Armonk, NY: IBM Corp; version 23). Descriptive statistics were calculated for all variables. Fisher's exact test was used to test for associations between service providers trained or not trained in *Munch & Move*, their provision of resources and professional development to educators and families, and their possession of policies. Independent t-tests (parametric data) and Mann–Whitney U test (nonparametric data) were used to test for differences between policy scores and service providers trained or not trained in *Munch & Move*. Average policy scores were calculated from service providers with a policy in the category. Significance levels were set at $p < 0.05$.

Results

Thirty-four (40%) service providers from the ACECQA list ceased operating during the study period. Of the remaining 51 service providers, 28 participated (55%). These 28 service providers had 885 registered educators in total, ranging from 5 to 91 each. All service providers enrolled children aged 0–12 years. Most service providers (22 of 28) were located in the most disadvantaged areas (SEIFA quintiles 1 and 2)⁹ and most providers (25 of 28) were in major cities.¹⁰ Table 1 shows nutrition, physical activity and screen time information, and resources and professional development, offered by service providers that were trained and not trained in *Munch & Move*. Service providers trained in *Munch & Move* were more likely to offer professional development to educators on healthy eating (90% vs. 25%, $p = 0.002$) and physical activity (90% vs 13%, $p = 0.002$), and to have more comprehensive nutrition policies (average policy score out of 17: 11.8 vs. 9.0, $p = 0.03$). Service provider policies and practices were more likely to promote healthy eating compared with healthy infant feeding, physical activity and screen time.

Discussion

Differences were found between FDC service providers trained or not trained in *Munch & Move* regarding professional development and nutrition, physical activity and screen time policies but not in the resources provided. Other studies have generally found that professional development has improved both policies and resources^{11–13}, however a recent US study, which focused on educator professional development, found no difference in nutrition, physical activity or screen time policies between intervention and control.¹⁴ The strong focus *Munch & Move* places on training educators and implementing policies⁴ provides a possible explanation for the finding that service providers trained in the *Munch & Move* program were more likely to provide healthy

Table 1. Service provider practices of resource provision and educator professional development, and policy quality by service providers trained or not trained in *Munch & Move*

Service provider practices	Number n (%)	Trained in <i>Munch & Move</i> (n = 20) n (%)	Not trained in <i>Munch & Move</i> (n = 8) n (%)	p-value
Resources supplied to families^a				
Healthy eating	26 (93)	18 (90)	8 (100)	1.000
Promoting physical activity	19 (68)	15 (75)	4 (50)	0.371
Limiting screen time	18 (64)	14 (70)	4 (50)	0.400
Breastfeeding	16 (57)	13 (65)	3 (38)	0.231
Fussy eating	13 (46)	12 (60)	1 (13)	0.058
Supervised floor-based play	9 (32)	8 (40)	1 (13)	0.214
Introducing solids	8 (29)	7 (35)	1 (13)	0.371
Fundamental movement skills	6 (21)	6 (30)	0 (0)	0.141
Resources supplied to educators^a				
Healthy eating learning experiences	25 (89)	19 (95)	6 (75)	0.188
Supervised floor-based play	21 (75)	17 (85)	4 (50)	0.142
Fundamental movement skills	21 (75)	17 (85)	4 (50)	0.142
List of physical activity equipment	20 (71)	14 (70)	6 (75)	1.000
'Breastfeeding welcome here' sign	9 (32)	8 (40)	1 (13)	0.214
Professional development offered to educators^a				
Healthy eating	20 (71)	18 (90)	2 (25)	0.0002
Physical activity	19 (68)	18 (90)	1 (13)	0.0002
Service provider policies^b				
	Total	Trained in <i>Munch & Move</i> (n = 20)	Not trained in <i>Munch & Move</i> (n = 7)	p-value
Nutrition policy^a				
n (%)	27 (100)	20 (100)	7 (100)	NA
Average policy score (out of a total of 17 points) ^c	11.1	11.8	9.0	0.03
Infant feeding policy				
n (%)	24 (89)	19 (95)	5 (71)	0.16
Average policy score (out of a total of 6 points) ^c	3.1	3.2	2.7	0.52
Physical activity policy				
n (%)	11 (41)	7 (35)	4 (57)	0.39
Average policy score (out of a total of 4 points) ^d	2.3	2.5	1.9	0.56
Screen time policy				
n (%)	14 (52)	9 (45)	5 (71)	0.39
Average policy score (out of a total of 6 points) ^d	2.3	2.9	1.2	0.06

NA = not applicable

^a Fisher's exact tests

^b 27 service providers provided policies to review. Average policy scores were calculated from service providers with a policy.

^c Independent t-tests

^d Mann-Whitney U test

eating and physical activity professional development and have comprehensive nutrition policies.

Our study found most FDC service providers promoted nutrition and healthy eating messages through policies and resources provided to families and educators. However less information was provided about infant feeding, physical activity and screen time. Similar to our findings, studies in the US have demonstrated that family child care homes (equivalent to FDC) were more likely to provide families with information relating to nutrition than physical activity, and also hold more comprehensive nutrition policies than physical activity policies.^{15,16} It is unsurprising that fewer service providers in our study had comprehensive policies relating to infant feeding, physical activity and screen time as these are not mandated under national regulations.³ Of the limited studies conducted in Australian FDC services, Lum et al.¹⁷ found that more than two-thirds of FDC service providers in the NSW Hunter New England region of NSW had comprehensive nutrition policies but less than one-third had comprehensive physical activity and screen time policies and none had comprehensive infant feeding policies. Bravo et al.¹⁸ found that nutrition policies lacked detail and were not comprehensive. McGuire et al.¹⁹ qualitatively analysed infant feeding policies in Australian centre-based and FDC services, and found most policies focused on minimising risk within child care environments.

Limitations of our study include potential bias from self-reported data, and the survey and policy audit instruments not being validated. However, written policies were obtained to cross-check reporting and the policies were reviewed by two different researchers. The sample may not be representative of the FDC sector because of the low sample size and the high proportion of service providers who had previously participated in *Munch & Move* training (71% of participating service providers had completed the *Munch & Move* training compared with 53% of all service providers who were invited to participate). The sample may not be adequately powered because of its small size. It is likely that recruitment was affected by state legislative changes that led to the closure of a high proportion of service providers²⁰ and fee structure changes that increased administrative pressure.²⁰

Conclusion

Our findings suggest that *Munch & Move* training had a positive impact on FDC service providers' policies and educators' professional development but service providers need additional support to adopt policies and to provide resources to educators and families, specifically targeting infant feeding, physical activity and screen time. Further research should investigate whether policies, resources and professional development provided by service providers to educators and families are associated with improvements in educator practices

and whether they have a positive impact on children's physical activity and eating behaviours. Future studies are also needed to validate the policy review tool that could be used to assess other Australian ECEC services' policies.

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Peer review and provenance

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Competing interests

None declared.

Author contributions

EK was responsible for acquisition of the data, policy review and drafting the article, and MH and SR contributed to the policy review. All authors contributed to the conception and design of the research, interpretation of data and critically revised the manuscript.

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