“Good intentions, but inadequate practices”—sun protection in early childhood centres, a qualitative study from New Zealand

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Abstract

Aim To examine sun protection policies and practices in New Zealand teacher-led early childhood centres, identifying underlying factors and key steps to support effective sun protection.

Method This qualitative study used a review of sun protection information on the New Zealand Ministry of Education early childhood “ECE Lead” website; 10 key informant interviews; and a review of sun protection policy documents provided by key informants.

Results The data indicated a lack of comprehensive sun protection policies and practices; while sunscreen and hats were focused on, sun protective hats, role-modelling and protective clothing were frequently not emphasised. Key underlying reasons for these failures were: (i) insufficient emphasis on sun protection in government early childhood regulatory and monitoring processes, due to focusing on other priorities, and (ii) centre staff lacking access to sun protection information.

Conclusion Recommendations include: (i) that early childhood regulations specifically include sun protection; and (ii) easy access for staff and parents to appropriate evidenced-based information about sun protection. The implications for other countries are that, despite written sun protection policies, and motivated staff, factors such as insufficient emphasis on sun protection in regulations, and inadequate access to information can undermine the quality of sun protection in early childhood centres.

Skin cancer, the most commonly diagnosed cancer in New Zealand, was estimated to have cost NZ $57 million in associated health care costs in 2006. The 2010 New Zealand melanoma incidence rates per 100,000 were 43.4 for men, and 36.1 for women, with 2341 new melanoma cases and 324 melanoma deaths. These are amongst the highest rates worldwide. There are an estimated 67,000 new non melanoma skin cancer (NMSC) cases annually, and around 100 deaths.

Ultraviolet radiation (UVR) is a known carcinogen and in high UVR areas such as New Zealand, excessive UVR exposure is estimated to cause over 90% of skin cancers. While lighter skin colour increases skin cancer risk, eye damage and immunosuppression occur irrespective of skin colour. Vitamin D is produced in response to UVR exposure and there is an increasing focus worldwide on Vitamin D and health.

While evidence shows that Vitamin D is essential for bone health, recent research suggests a link between low Vitamin D levels and diseases such as cancer.
on the relationship between sun exposure, Vitamin D levels and health is complex, and there is debate as to what is the optimum level. Obtaining adequate Vitamin D requires a balance between sun exposure and sun protection.

As UVR exposure is a major skin cancer risk factor, reduction of excessive exposure is the key prevention strategy. However, skin cancer’s prolonged latency period means it may take many years to establish whether prevention programmes are effective.

Australian research suggests prevention efforts are effective. Evaluation of the SunSmart programme in Victoria, Australia, showed decreased melanoma incidence rates, giving an estimated return of AU$2.30 per dollar spent. Evidence supports the particular importance of sun protection in early childhood, as excessive childhood UVR exposure increases melanoma risk later in life.

The Cancer Society of New Zealand’s (CSNZ) SunSmart Schools Accreditation Programme (SSAP), provides accreditation to primary and intermediate schools that meet best practice sun protection criteria.

Evaluation of the SSAP after 4 years, compared to baseline, showed a statistically significant increase in the number of sun protection criteria schools met. Sunscreen use, hat wearing and a requirement to play in shade if not wearing a hat, showed the greatest increase. There is no similar New Zealand programme for early childhood services.

Children attending Early Childhood Centres (ECCs) risk excessive UVR exposure. As a signatory to the 1989 United Nations Convention on the Rights of the Child, New Zealand has the responsibility to ensure effective sun protection for children in ECCs.

There is limited international or New Zealand research on children’s sun exposure in ECCs. Available research suggests that while exposure is variable, levels can potentially be excessive, with the quality of shade an important determining factor.

While international research indicates that ECCs with written policies report better sun protection practices, ineffective practices do occur despite having a written policy. A lack of in-depth understanding by staff of the risks of excessive sun exposure, an over-reliance on sunscreen, and children not consistently wearing sun protective clothing and hats has also been identified.

Recent Australian research identified the need to understand the barriers to effective sun protection in ECCs. Given the lack of New Zealand research in this area, this study aimed to examine sun protection policies and practices in New Zealand teacher-led early childhood centres, identifying underlying factors and key steps to support effective sun protection.

New Zealand has a diverse early childhood care sector where infants and preschoolers attend services licensed by the Ministry of Education. In 2012, there were over 196,500 enrolments in licensed early childhood services. Over 178,000 (89%) of these enrolments were in ECCs, with the remainder being in home based care. In 2012, 76% of ECCs were teacher-led (50% of staff required to be qualified), with over 153,900 enrolments, the remaining 24% were parent-led (no qualification requirement).
Potentially, there could be significant differences in the underlying factors influencing sun protection in teacher-led versus parent–led ECCs, as qualified teachers may have formally studied sun protection. Therefore, it was decided to limit the focus of the research to teacher-led centres which the vast majority of children attend.

Method

The study involved three stages detailed below: a review of sun protection content on the New Zealand Ministry of Education (MoE) early childhood “ECE Lead” website;20 10 key informant interviews by the lead researcher (MD); and a review of sun protection policy documents provided by key informants.

The research was approved by the ethics process of the Department of Public Health, University of Otago, Wellington, New Zealand (July 14, 2009).21 An expert advisory group consisting of four experts, two in public health, one in early childhood care, and one in sun protection research, provided advice.

Review of Ministry of Education early childhood website

In September 2010, the “Lead” section of the MoE early childhood website,20 was searched systematically for sun protection content, using the website menus and search function using the key words “sun protection”.

Key informant interviews

As the most productive way of getting information on sun protection policies and practices in teacher-led ECCs, and identifying underlying factors for practices, the Advisory Group recommended a key informant approach22 recruiting ECC professional development advisors. These are responsible for groups of ECCs, working with ECC staff in each centre to ensure correct policies and practices are implemented.

Professional development advisors visit centres on a regular basis to monitor care, provide advice, and ensure centres are meeting licensing requirements. Their positions enable them to get a much more informed view of policies and practices across the sector than could be obtained by interviews at the centre level.

Interviewing staff working in individual ECCs was considered but rejected, as the information gained would be limited to a small number of ECCs. A survey or observations of ECCs was not considered appropriate as a preliminary step in investigating policies and practices, because of the complex nature of policy implementation in this field.

“Purposeful sampling”23 was used to recruit key informants able to provide in-depth information about sun protection policies and practices in a range of teacher-led ECCs. Data collection continued until data saturation24 was reached at 10 interviews. The inclusion criteria were: professional development advisors working with groups of teacher-led ECCs.

The key informants were specifically chosen because they had extensive ECCs experience, and detailed knowledge of the day-to-day activities of the centres they were responsible for. Most respondents had over 15 years’ experience in a variety of ECC roles including teaching.

Nine respondents were from the following organisations: three commercial nationwide ECC chains: a nationwide not-for-profit provider; and three small, and two large kindergarten associations (independent but with substantial government funding). Additionally, a regional health service early childhood advisor was recruited. The respondents were working with a combined total of over 90 centres, ranging from small centres to one with over 160 children.

The organisations the respondents worked with had over 660 early childhood care licences, catering for over 32,800 children. The geographical spread was from Northland to Southland including major cities and provincial towns.

A semi-structured interview schedule was pre-tested with two ECC managers and a health promoter. Hour long telephone interviews were conducted between April 2009 and May 2010.
Data analysis

All interviews were recorded and transcribed. An established approach for analysing qualitative data was used, whereby the data was organised and reported according to the areas that were explored. As the interview schedule covered the main categories of interest, collating the data for each category was straightforward, with the data in each transcript located under the relevant question.

Thematic analysis was used to analyse the data. The research aimed to understand the real life situation, rather than working from or testing a particular theoretical viewpoint. Therefore, an inductive “data driven” approach was used to identify themes, with the data determining the codes rather than pre-determining them.

In each category the range of responses was assessed; codes were developed and data coded; the coded data was analysed in each category, and across categories, to identify underlying themes. Being open to divergent information that emerged from the data was important. The themes are reported under each heading in the results section. The coding and analysis was conducted by the first author (MD) with the other authors checking each stage and providing suggestions for alternatives.

Respondents were asked to provide copies of their organisation’s sun protection documents which were evaluated against the CSNZ model ECC sun protection policy. The study was not attempting a nationwide survey of policy documents. However, the respondent’s policies provided an example of current polices used by some ECCs and enhanced understanding of the respondent’s comments.

Results

Review of Ministry of Education Early Childhood Website

The website showed that ECCs were governed by the Education (Early Childhood Services) Regulations, 2008, administered by the MoE. Regulation 45 required services to provide, “suitable and sufficient space for a range of activities…to support safe and healthy practices by the service provider”.

Regulation 46 required services to, “take all reasonable steps to promote the good health and safety of children enrolled in the service”. To operate, ECCs require a licence, which is granted subject to specific licensing criteria. However, there were no specific sun protection/shade licensing criteria. While all ECCs need a licence, the situation differs for new, versus established ECCs.

Requirements when establishing a new ECC

To obtain a licence, new ECCs require a satisfactory health report from their local public health unit (PHU). The health report requires a sun protection policy. For new ECCs the website provided a health and safety policy template (including sun safety), and referred to the CSNZ for information. Sun protection and shade were very briefly mentioned several times in the information about developing a new ECC.

Requirements for established ECCs

Established ECCs may have been licensed for many years, but there is no requirement for an updated health report, although the MoE can require one, if concerned. The MoE are currently re-licensing centres that were licensed prior to the new regulations coming into effect on 1 December 2008.

Re-licensing includes a MoE inspection, (to ensure adherence to new licensing criteria); however, there are no sun protection licensing criteria and an updated health
report is not required. The website review did not identify any detailed information about sun protection measures.

Key informant interviews

Regulation of ECCs—Respondents reported that all their ECCs had written sun protection policies/procedures and staff took sun protection seriously. While half did not think implementing sun protection was difficult, several later described problems implementing consistent practices.

A common theme was the reported lack of focus on sun protection by those regulating and monitoring ECCs. Respondents reported that during the MoE visit prior to granting a licence, sun protection was not usually focused on. One respondent involved in licensing for twenty years commented “at licensing they [the MoE] may ask to see our sun safe policy. I’ve had that happen twice… so it is not very often”. No respondents mentioned the PHU health report prior to licensing.

At the time of this research, the Education Review Office (ERO) was monitoring ECCs through two to three yearly visits, followed by a written report. Most respondents indicated ERO might ask about sun protection during a visit, but this was not routine.

Sun protection measures—Eight respondents reported children were required to wear hats; two reported hat-wearing was encouraged but not required. Several acknowledged that hat wearing was not actually enforced, indicating a gap between policy and actual practice. Parents usually supplied the hat and while “sun protective hats” were “encouraged”, almost all centres allowed caps.

A key theme was less emphasis on sun protective clothing compared to hats. Most respondents reported spare clothing was available; two respondents indicated sunscreen may be applied when the shoulders were not covered, rather than extra clothing; one respondent highlighted concern to not impose staff views on parents:

One thing on the clothing is that we’re seen as not trying to make judgments on what the parents have decided that the children can wear …. [therefore] it would be just a matter of the hats and sunscreen.

A further theme was inconsistent management of sunscreen. This ranged from systematic application at specific times, (more common at full day centres), to teachers applying sunscreen to individual children when necessary. Respondents reported that children were expected to arrive with sunscreen on, even as early as 7am.

Most respondents stated that skin colour did not influence sun protection, with statements such as, “I would hope all children would be treated the same”. However, several suggested teachers may particularly focus on fairer skinned children.

The complexity of shade was another key theme. Several respondents indicated individual centres funded shade projects. Some respondents acknowledged that in low social economic status (SES) areas fundraising was difficult, so the central organisation helped fund shade structures. Some respondents reported inappropriate shade had been erected due to lack of specialist shade knowledge.
Respondents from larger organisations with specialised staff generally reported fewer shade development problems. Most respondents reported shade sails were removed during winter; while solid structures provide outdoor winter play space.

Most respondents reported that the regulatory requirement that children can move easily from indoor to outdoor prevented scheduling of indoor activity to avoid peak UVR exposure. However, lunch was generally inside or in shade and some full day centres had a rest time. Most respondents considered sun protection did not compromise physical activity.

A theme of inconsistent role-modelling was identified. Several respondents reported that while staff role-modelling was important, in practice it was variable and could be resisted:

> they’re [teachers] not keen on it,… they’ve never had to do it, because ‘don’t tell me what to do’, ‘because I have hat hair and I don’t want to have hat hair’ … ‘I’m not normally outside at that sort of time, so look, it won’t matter if I duck in and out.’

**Sun protection information for parents and children**—Co-operation and commitment from parents was emphasised, and all respondents reported sun protection information was given to parents and incorporated into children’s learning.

**Staff access to information**—Difficulty accessing sun protection information was a key theme. For some, access to information was haphazard; and limited to the media:

> “It would be good for them [teachers] to have more knowledge; we’ve got nearly a hundred teachers. I’m sure that they’re not all sun aware, but I haven’t got that knowledge to be…telling them”.

When specifically asked, all respondents reported the MoE had not provided any specific sun protection information. While all respondents had some knowledge about Vitamin D, typically from the media, most had not discussed Vitamin D with ECC staff.

**Key steps to improve sun protection**

Better access to information was an important theme, identified by five respondents as a key step to improve sun protection. Many respondents thought more information would support staff to confidently promote sun protection to parents:

> The way to improve their ability to articulate the importance of sun safety would be to give them some good research and facts about it… if teachers have got facts behind them, they’re more than happy, but they don’t want to just go talking off the top of their head.

A key theme was the emphasis on raising awareness rather than the regulations being overly prescriptive. Four respondents recommended the regulations specifically include sun protection and/or shade, several were unsure, and two thought regulation could be unhelpful. When prompted, most respondents supported a sun protection accreditation programme, similar to the SSAP.

**Analysis of sun protection policies/procedures**

Of the nine policy documents provided by seven respondents only two met all recommendations of the CSNZ model policy. While all policies included sunscreen, five lacked a statement about the time period the policy covered. While all policies included hat wearing, four did not require hats to be sun protective. Three policies did not mention clothing. Staff role-modelling was required in seven policies. Many
policies lacked detail on sun protection measures; e.g., on sunscreen sun protection factor ratings.

Generally, the practices the respondents reported were more comprehensive than their written policies. However, some practices included in policies were reportedly not consistently implemented, e.g. role-modelling. More research would be needed to determine whether this is generally representative of New Zealand ECCs.

**Discussion**

**Findings and analysis**

While the respondents generally reported many positive sun protection measures were being implemented, the policies and practices fell short of best practice. Overall, there was greater awareness and action in regard to hats and sunscreen, compared to sun protective clothing; a similar finding to an Australian study. The key underlying factors identified as influencing sun protection policies and practices were: (i) that the Education (Early Childhood Services) Regulations 2008 did not include specific licensing criteria in regard to sun protection; (ii) the processes in regard to ECCs that obtained their licence prior to 1 December 2008, seemed unable to ensure sun protection policies were consistent, comprehensive, evidence-based and reviewed regularly; (iii) inadequate access by ECC staff to appropriate information; (iv) in some cases staff resistance prevented consistent role-modelling.

The research findings were consistent with the literature, particularly in regard to; hat wearing, policies being incomplete, and the overemphasis on sunscreen.

Research shows appropriate sun protection knowledge has a significant influence on ECC staff’s sun protection practices. This research suggests staff may lack access to background information to support their practice, with inadequate practices occurring despite good intentions.

The lack of information about Vitamin D is concerning, as increasing skin pigmentation increases the UVR exposure required to make Vitamin D. Respondents emphasis on all children being treated the same irrespective of skin colour, and children having sunscreen applied before 7am, could potentially influence the Vitamin D levels of very dark skinned children.

The Ministry of Health suggests that in the future sun protection advice may increasingly need to vary between groups, rather than being a standardised message for all. While ECC staff may be highly motivated, unless they are well informed they may implement ineffective practices.

Role-modelling teaches and reinforces behaviour. Lack of consistent role-modelling gives conflicting messages, potentially undermining children’s understanding of sun protection by expecting children to, “do as I say, not as I do”.

There did not appear to be a clear, consistent process for established centres’ sun protection policies and practices to be regularly reviewed by PHUs.

The absence of sun protection/shade licensing criteria potentially reduces the focus on the hazard of UVR exposure. This may partially be because of skin cancer’s long
latency period,\textsuperscript{7} which may diminish awareness of the seriousness of the problem, thus contributing to sun protection practices being less than ideal.

**Strengths of this study**

Strengths include: the research was informed by an expert advisory committee; the use of multiple data sources; the substantial combined experience of the 10 respondents, the range and geographical spread of the organisations, and the semi-structured interview format. The information sheet detailed the lead researcher’s sun protection background which may have assisted recruitment by enhancing the research credibility.

Further research could use direct observation of ECCs and surveys of ECC staff to test the results we found and further explore practices. A wider review of ECC sun protection policies would help to indicate national patterns.

**Policy and practice implications**

While this is a small study, the lack of emphasis on sun protection in the regulations\textsuperscript{27} was concerning and potentially impacts on the entire New Zealand early childhood care sector. Inclusion of sun protection licensing criteria would ensure sun protection policies and practices are regularly externally reviewed when ERO reviews ECCs compliance with licensing criteria. This would place sun protection higher on the agenda of those responsible for regulating, monitoring and running ECCs.

Respondents specifically identified that increased knowledge would raise staff confidence when discussing sun protection with parents. Clearly, ECC staff need easy access to appropriate sun protection information. While from a health promotion perspective increased knowledge does not automatically lead to behaviour change, knowledge has been shown to be an important factor influencing sun protection practices in this setting.\textsuperscript{30}

A multifaceted approach, combining the suggested policy changes with increased knowledge, may potentially lead to a heightened focus on sun protection. Government involvement in regulating ECC sun protection is necessary for both health and fiscal reasons: the responsibility to protect children from excessive UVR, and the fiscal responsibility to reduce unnecessary future health expenditure on a largely preventable disease.\textsuperscript{10}

The research identified a lack of evidence, both nationally, and internationally, on sun protection in ECCs. More research is needed to establish the present situation in more detail, and develop and evaluate strategies to support sun protection policies and practices.

Ideally research would look at the UVR exposure levels of children in the ECC setting, current policies and practices, and parental and staff attitudes to, and knowledge of, sun protection.

**Conclusions**

This research suggests ECC teachers need more support to consistently implement best practice sun protection. These findings are consistent with the evidence
Internationally which suggests sun protection practices and policies in ECCs are not ideal.

The research also highlights the importance, in New Zealand and internationally, of having effective regulating and monitoring processes which ensure effective, comprehensive policies. Even though there appeared to be a high level of awareness by staff of the need for sun protection, key changes including a regulatory emphasis on sun protection and improved information for staff may potentially significantly improve sun protection practices in ECCs.

International research indicating that skin cancer prevention programmes help reduce skin cancer,8,9 and save health care costs,10 support the importance of reducing excessive UVR exposure in the ECC setting. Thus, a small investment now to support ECCs to implement best practice sun protection would likely produce long term savings in costs associated with skin cancer.

Ensuring that evidence-based sun protection practices in ECCs are consistently implemented is a cost-effective opportunity to promote a healthy future for our children.

Competing interests: For the sake of complete disclosure, the lead author has worked for Cancer Society of New Zealand (CSNZ) in the past.

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