

# Australian primary school communities' understandings of SunSmart: a qualitative study

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Despite increased awareness and numerous campaigns to adopt sun safe behaviours, skin cancer remains a major concern for the Australian population. Australia has among the highest incidence of skin cancer in the world.<sup>1</sup> It is estimated that two in three Australians will develop some form of skin cancer (melanoma and/or non-melanoma) before the age of 70.<sup>2</sup> Protecting the skin from exposure to ultraviolet radiation (UVR) has been identified as the simplest and most effective way to prevent skin cancer.<sup>3,4</sup> Research suggests that children are particularly susceptible to the risks of UVR-induced skin damage as a significant portion of a person's lifetime UVR exposure occurs before the age of 18, and children have more time to develop diseases with long latency, such as skin cancer.<sup>4,5</sup> The World Health Organization (WHO) has recognised schools as an effective setting for skin cancer prevention efforts to be focused, and has recommended the use of the Health Promoting Schools (HPS) framework as an approach for school health promotion programs.<sup>5,6</sup> The HPS framework emphasises the application of a settings approach within the school environment to influence the health behaviours of students, teachers and members of the wider community.<sup>7</sup> As outlined by the WHO's INTERSUN report,<sup>4</sup> a skin cancer prevention program can adopt the principles of the HPS framework by including sun protection education, a healthy school environment, a school-endorsed sun protection policy, and community and family involvement. The WHO and the New South Wales Department of Education (NSWDE)

## Abstract

**Objectives:** Skin cancer represents a major health issue for Australia. Childhood sun exposure is an important risk factor and evidence suggests the use of sun protection measures by Australian school children could be improved. This study examines how the SunSmart Program, a school-based skin cancer prevention resource, can be supported to further increase sun protection behaviours to assist in lowering skin cancer incidence.

**Methods:** The Health Promoting Schools (HPS) framework was adopted to select key stakeholders from a convenience sample of five school communities. Students, teaching staff and parents participated in semi-structured focus group and individual interviews. A thematic analysis was used to extract key themes from the data.

**Results:** Although these school communities were aware of sun protection practices and the risks associated with sun exposure, their understandings of the SunSmart Program were limited. Sun protection policy implementation was inconsistent and students were unlikely to engage in sun protection practices beyond the school setting.

**Conclusion and implications:** School communities require additional support and engagement to holistically enforce the principles of the SunSmart Program.

**Key words:** SunSmart, Health Promoting School, primary school, skin cancer

have advised schools implement a UVR protection policy and recommended the Cancer Council's (CC) SunSmart Program (SSP).<sup>4,8</sup>

The SSP is a free resource available for primary schools, childcare centres and outside school hours care (OSHC) services.<sup>9</sup> While the SSP was originally developed by CC Victoria as a settings-based support resource suitable for workplaces, sporting events, education settings and other areas, it has since become primarily known for the school-based accreditation program variant.<sup>10</sup> There is a prerequisite SSP membership process before schools can become SunSmart-affiliated. This membership process requires the adoption of multiple strategies to positively influence sun

protection behaviour, such as: a hat-wearing policy; sun protection education; uniform design; the provision and encouragement of shade and sunscreen use; teacher role modelling; and community involvement.<sup>9</sup> As these strategies align with the components of the HPS framework, it has been recognised that the SSP is consistent with the HPS approach.<sup>11</sup> The accreditation-driven SSP was originally launched in Victoria in 1994 and by 2008 was active in every Australian state and territory, while a version of the SSP was also adopted by New Zealand in 2005.<sup>12-14</sup> There have been a number of studies evaluating the SSP in primary school settings with a focus on the assessment of SunSmart schools' sun protection policies. This has been

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achieved in most cases by comparing school policy against an established set of criteria based on SSP accreditation requirements.<sup>12-17</sup> Further, a number of studies have included a comparison between SunSmart and non-SunSmart schools,<sup>13-16</sup> finding that affiliation to the SSP is likely to increase sun protection policy comprehensiveness.<sup>14-16</sup>

Notably, regardless of SSP membership, there was a strong focus on enforcing hat-wearing practices. One of the most commonly addressed sun protection policy criteria at all schools across all studies was that students who were not wearing a hat were required to play in the shade.<sup>12,14,17</sup> Turner et al.<sup>16(p373)</sup> recognised that many Queensland schools referred to this rule as 'no hat, no play'. A 2011 national survey<sup>17</sup> of 859 Australian primary schools found that 96% reportedly enforced hat wearing during Terms 1 and 4, which occur during summer. When comparing schools' sun protection policy and SunSmart status, Jones et al.<sup>13</sup> found that 95.4% of SunSmart schools enforced sun protective hats, such as legionnaire, broad-brimmed or bucket hats, which was significantly more likely than schools without a SunSmart membership (67.5%).

While these studies reflected similar results in regards to sun protection policy comprehensiveness, there is contrasting evidence regarding the influence of the SSP on sun protection practice. The studies that used self-reporting surveys as a data source indicated SunSmart membership was positively associated with sun protection practices, specifically hat-wearing.<sup>13,15,17</sup> However, one observational study of students' hat-wearing practices found the SSP does not necessarily provide a statistically significant difference in this area. Dudley et al.<sup>18</sup> found that observed hat wearing was 20% lower than hat-wearing practices in self-reported studies, while observations of students' and adult role models' hat-wearing behaviour in QLD schools before, during and after school hours<sup>19</sup> and during school swimming carnivals<sup>20</sup> found that SunSmart accreditation had little influence on hat-wearing practices. Furthermore, measurements of sunscreen consumption in NSW SunSmart schools indicate that students use far less sunscreen than current health recommendations advise.<sup>18</sup>

Health promotion research has shown that the school setting is a complex context, and that practice within the setting is frequently adjusting depending on the priorities of the

school community, the resources available, and the partnerships with other groups, agencies and services (such as parents and education sectors).<sup>21,22</sup> Thus, these influences can affect the implementation of the SSP in school settings. Effective school health promotions integrate the collaborative efforts of the broader school community, including students, school staff, parents and other community members.<sup>5,23,24</sup> To investigate the division between sun protection policy and sun protection practices, the focus of this research is to better understand how sun protection policy is implemented in SunSmart schools by examining the perspectives and understandings of key stakeholder groups.

## Methods

### Research design

Semi-structured interviews were conducted with a range of key stakeholders within the context of a SunSmart school to examine how the SSP is implemented in a sample of NSW primary schools. Students, teachers, principals and parents were identified as key stakeholders based on the components of the HPS framework. The selection of this sample was also influenced by the work of Turner et al. (2014)<sup>16</sup> who recognised the important contributions of adult role models, and observed their hat-wearing behaviours alongside students' behaviours in QLD SunSmart and non-SunSmart primary schools. Based on the results of their study, Turner et al. concluded that parents/caregivers may be unaware of the role they play in promoting sun safety. This study will provide insight into the perceptions of parents/caregivers, among other key stakeholders, to investigate their role in the development, implementation and enforcement of the SSP in NSW primary schools.

While previous reviews of the SSP have used quantitative methods,<sup>12-16,19</sup> this study, building on the work of Sharplin, Smith & Roth,<sup>17</sup> applied a qualitative methodology to provide thorough insight into key stakeholders' perceptions and understandings of the SSP. It is important to highlight the potential bias that may arise from qualitative research methods, specifically self-reported data. However, these possible disadvantages are outweighed by the potential to provide rich and insightful data detailing the implementation of the SSP within the school setting.<sup>25,26</sup> Given the

complexity of the school context, whereby a number of individuals, agencies, procedures and policies interact, qualitative methods are most suitable to gain insight into the workings of school health promotion strategies.<sup>22</sup>

This study aligns with a Cluster Controlled Trial (CCT) designed to support NSW SunSmart schools to improve student hat wearing and sunscreen use and teacher role modelling.<sup>27</sup> Twenty NSW SunSmart schools within the Greater Western Area of Sydney (GWS) were recruited to participate in the study. The GWS was identified by both the CCNSW and NSWDE as one of the largest and most diverse (demographically) educational regions in NSW.

Baseline research for the CCT included the monitoring of students' sunscreen consumption and hat-wearing behaviours, and teachers' role modelling of sun protection practices.<sup>27</sup> Following baseline research, five schools from the sample were randomly selected as intervention sites using a simple computer algorithm.<sup>27</sup> The semi-structured interviews conducted for this study occurred in these five sites, and the results of this study will inform the design and implementation of an intervention to support improved sun protection practices in these schools.

### Recruitment and sample

CCNSW provided a list of government schools in the GWS that were registered members of the SSP (n=167). Expression of interest forms were emailed to all schools in the selected region to generate a list of schools to act as participants. The selection of the 20 schools was previously detailed by Dudley et al.<sup>27</sup> From this list, 20 schools were sampled using convenience recruitment methods to participate in the CCT.<sup>27</sup> Following baseline observational research, a simple computer algorithm was used by an independent researcher not involved in the study to randomly select five schools from the sample to act as intervention sites for the CCT.<sup>27</sup>

The sample of interview participants consisted of teachers, principals, students and parents of students. Student participants were in either Year 5 or 6 of schooling, which is a period recognised by the NSWDE as Stage 3 (S3). The sample of parent participants included parents/guardians of students from any year group, not just S3. The teacher participants were those who taught S3 classrooms. All participants were recruited

via convenience sampling. Invitations for students and parents to participate in focus group interviews were distributed via school networks, such as newsletters and social media posts, while 53 teachers were invited to participate in the research by the researchers via emails. All participants were required to sign consent forms prior to the commencement of data collection.

There were 34 interviews in total. Fifteen teaching staff participated in individual interviews, 103 students in nine focus groups, and 31 parents in a further nine parent focus groups. The 15 teaching staff included four executive-level staff (i.e. the principal or assistant principal) and 11 classroom teachers. Individual interviews were selected for teaching staff to mitigate possible risks associated with participating in the study and allow teachers to be more candid in their responses. The number of participants in each parent focus group ranged from two to eight participants, while student focus groups ranged from eight to 14 participants. All interviews were at the participants' schools and occurred during school time, lasting about 30 minutes.

### Ethics

Ethics approval for this research was obtained from the university Human Research Ethics Committee (protocol number: 2014/062), and via the NSW State Education Research Application Process (SERAP approval number 2014148).

### Data collection

Data were collected from students, parents and executive/teaching staff between February and April 2015. The interview guide consisted of pre-planned primary questions to consistently cover the same areas with each participant. In addition, participants were prompted to provide further relevant information depending on their responses to the semi-structured interview guide. Interviews were conducted by one member of the research team, while another member was present during data collection to ensure reliability. Field notes and site photographs were collected during data collection.

All interviews were digitally recorded and saved electronically in a password protected file. Prior to analysis, the audio recordings were transcribed and proofread by an independent transcription agency.

### Data analysis

This study implemented Yin's thematic approach to analysing qualitative data.<sup>28</sup> As such, a five-phase approach was applied in a cyclical manner: compiling; disassembly; reassembly; interpretation of data; and the drawing of conclusions.<sup>28</sup> Using this method allowed the research team to organise and code data to identify patterns, themes, similarities and differences evolving from the data. Initially, interview transcripts were analysed individually to permit coding to occur by identifying key words, phrases or themes and to detect and classify key ideas. These patterns and themes were then cross-checked in an iterative cycle of continually examining the data against emergent categories to ensure consistency and credibility. The disassembly phase involved the identification of individual meaning statements of smaller segments of data allowing for further coding and analysis and ensuring consistency with the original responses and saturation. During reassembly (axial coding), coded groups were reorganised by categories to relate to each other analytically. From the coded data it became apparent whether assigned themes were appropriate or not and refinement occurred. Aligning with Yin,<sup>28</sup> final themes were specific enough not to be repetitive and broad enough to summarise ideas contained in numerous text segments.

Primary analysis was conducted independently by academic members of the research team assigned to qualitative analysis. Following the initial independent primary analysis, the research team collectively reviewed and discussed categories arising from the data and identified categories that were consistently established by members of the research team. The inclusion of multiple participant population groups from each school site ensured triangulation could occur via the multiple data sources.

### Theoretical framework

The HPS framework is a variant of the healthy settings approach, specifically designed for the school context. The healthy settings approach advocates the integration of a whole-system approach to promote health and prevent disease/injury.<sup>7</sup> The HPS concept is designed to be used as a framework for schools to develop a holistic and comprehensive health promotion strategy. It is a tripartite model that includes three interconnected components: i) teacher

practices (i.e. curriculum, teaching and learning); ii) school ethos (i.e. the physical, social and cultural environment of the school); and iii) partnerships (such as those between students, staff, families, the wider community, local health services and other relevant organisations).<sup>24</sup>

While there are multiple theoretical frameworks aligned to health promotion, the HPS framework was chosen due to its suitability for addressing socio-environmental factors, such as those aligned with the three components. The HPS framework was adopted to inform the sampling frame of participants recruited for this study and it also provided a rationale influencing the development of the interview design and informing the initial coding process.

### Results

Application of Yin's approach resulted in the identification of three major themes aligning with the SSP and HPS framework. These themes were identified as:

1. Understandings of the SunSmart Program:
  - Sun protective behaviours
  - SunSmart accreditation procedures
  - No Hat, No Play.
2. Role modelling.
3. Triggers.

#### 1. Understandings of the SunSmart program

A key focus of this research was to investigate stakeholders' perceptions of the SunSmart Policy program. From the data it was apparent that stakeholder groups associated SunSmart with three different areas. These areas were categorised as subthemes, and included: i) sun protection behaviour; ii) SunSmart accreditation procedures; and iii) No Hat, No Play policy.

#### *Sun protective behaviour*

The majority of participants associated the term 'SunSmart' with sun protection behaviours and sun exposure risks, such as the prevention of sunburn and/or skin cancer. This was evident across all stakeholder groups. The sun protection behaviours identified by participants included hat wearing, and the use of shade, sunscreen, protective clothing and sunglasses. Participants indicated that a SunSmart school was one that facilitated these behaviours via policy, encouragement and/or provision of resources.

The most frequently identified sun protection behaviours were hat wearing and sunscreen application. Hat wearing will be discussed in the third sub-theme: No Hat, No Play.

Students and parents indicated that students sometimes or rarely applied sunscreen while at school. Teachers suggested this was due to a lack of time or reminders by the teachers for students to apply sunscreen prior to moving from the classroom to an outside play area. It was also suggested that students did not associate general play periods (i.e. recess and lunch) with sunscreen application. Protective clothing and sunglasses were suggested by a minority of participants and discussion around these issues was negligible. As such, shade protective clothing and adoption of sunglasses has not been included in detail in the findings of this paper.

#### *SunSmart accreditation procedures*

While all key stakeholder groups associated the term 'SunSmart' with sun protection behaviours, there were differences among stakeholders' understandings of the formal practices and procedures of the SSP. Principals and executive staff indicated a sound understanding of the SSP and its links to policy and procedure:

*In terms of being a SunSmart school, it means that you're aware of the Cancer Council's publications in terms of staying safe in the sun, that you have policies for sun safety for students that include not only timetabling of activities at sensible times for sport and for gym... (Principal, Site B)*

Conversely, students, teaching staff and parents generally demonstrated limited understandings and awareness of the SSP. Other than the executive school staff (i.e. principals), the majority of the school community had little or no knowledge of the membership process or the current school SunSmart policy documentation:

*I hope we're not a SunSmart school and I just don't know about it. (Teacher 1, Site E)*

*I don't know that there is a school policy. (Teacher 2, Site E)*

It was evident at four of the five sites (Sites B, C, D and E) that a single member of staff, who was often an executive staff member, had been entrusted with the SunSmart procedures of the school. This typically included knowledge of SunSmart membership and documentation (i.e. policy and promotional material), and communication with CCNSW. It was also evident that after the initial policy

development and accreditation process, the dissemination of documentation had not continued as a consistent process.

#### *No Hat, No Play*

As evident in the previous theme, the participants generally had a sound knowledge of the risks associated with sun exposure and the sun protection behaviours that can minimise these risks. However, students' hat-wearing behaviour was strongly associated with a school hat-wearing policy rather than informed and active sun protection behaviour. This policy item, referred to as 'No Hat, No Play', was identified by the majority of participants in all five sites, across all key stakeholder groups. The rule was most often described as encouraging students to wear a hat during break periods, specifically recess and lunch, otherwise they were required to move to a shaded area. No Hat, No Play was frequently identified as one of the main aspects of a SunSmart school, and was subsequently discussed at length by many key stakeholders.

Although the No Hat, No Play rule was identified at all five sites, inconsistencies in the implementation and understanding of the concept were evident among all three key stakeholder population groups. Students generally identified No Hat, No Play in terms of a perceived punishment, indicating that noncompliance resulted in detention, having to sit in the same area or having to pick up rubbish. Parents were also aware of the negative implications of the No Hat, No Play policy item:

*They [students] do get quite devastated, yeah. They do actually and some children actually get quite panicky if they don't have a hat in their bag... It's [play] the most important isn't it to them. (Parent, Site B)*

Conversely, teaching staff were more likely to describe the rule as an alternative to playing in the sun, rather than a punishment:

*They have to play in the shade. We're quite lucky though because we have a lot of shaded areas at school. They can still play outside and be in the shade. (Teacher, Site D)*

Furthermore, variations occurred in regards to descriptions of the rule ranging from the original version of No Hat, No Play, to No Hat, Shade Play, to the current NSWDE recommended: No Hat, Play in the Shade. These conflicts of policy title were evident across all sites as well as within sites, which led to teaching staff having varied

perceptions as to whether students were or weren't allowed to play in the shaded areas.

Students were also aware of the staff members' inconsistent enforcement of No Hat, No Play, indicating a strong awareness that some teachers were stricter or more lenient than others. This resulted in students at one of the schools to "hold their hat while they're running" (Student, Site E) as a means of complying with the No Hat, No Play policy item. This is further evidence that students' hat-wearing behaviour is associated with policy compliance, rather than active sun protection. There was also a notable variation in styles of hats worn between sites, with schools such as Site C and Site D incorporating non-sun-safe-recommended caps as policy-driven acceptable hat wear to engage older students.

While the origin of the policy in the five schools was not specifically identified, there were parents and teaching staff who perceived No Hat, No Play to be a legal requirement for children's school attendance. Rather than rectifying the misconception, the principal of Site B allows community members to incorrectly perceive No Hat, No Play is a NSWDE legal directive so that the enforcement of sun safe hats at the school is supported:

*Legally I can't force them [students to wear hats], by the way. We are a public school; they could wear whatever they like to school and I cannot enforce the uniform... I have never informed the community, because I don't think it's in the children's best interests sometimes if, you know, they've developed an idea that if they don't have a hat they can't play. We don't have a policy saying that, we don't, isn't that awful? So if they're found without a hat, and wearing a cap constitutes being without a hat. It's the same if they're in a cap they will be sent down to this area in the shade.*

## **2. Role modelling**

Findings indicated that students, parents and teaching staff identified role modelling as an important aspect of a sun protection program. However, participants justified this from different perspectives. Some parents and teaching staff suggested role modelling is important for young children as they replicate the behaviour of adults, while other teaching staff indicated they role-modelled sun protection behaviours as they had been personally affected by skin cancer. Notably, though, the majority of participants indicated that role modelling is required for the No Hat, No Play rule to be enforced:

*You can't expect them [students] to [wear a hat] if you don't. (Teacher, Site, E)*

*[If teachers didn't wear hats] I'd be really, really angry at my teacher. I'd say why'd you get me in trouble when you're not wearing a hat? It's hypocritical. (Student, Site B)*

*I think it does open the door for the child to turn around and say well how come you don't have one. ...if they expect the kids to do what they're told then they should follow what they're teaching (Parent, Site D)*

Despite the strong views on teacher role modelling, the students at all five sites believed they were more influential than teachers as role models for younger students. Contrasting the beliefs of some teachers and parents, students identified the No Hat, No Play rule as the primary influence on their hat-wearing behaviours, admitting teacher role modelling had little impact on their personal desire to wear a hat. However, they did suggest teacher role modelling may positively impact younger students.

### 3. Triggers

Participants across stakeholder groups identified the concept of triggers or cues that influenced sun protection behaviour. The most commonly identified triggers were high temperatures, outdoor sport and special school events, such as athletics or swimming carnivals. While sunscreen application was self-reportedly limited among students, it was the sun protection behaviour most commonly associated with a perceived trigger:

*When we go to sporting events and stuff like that. (Parent, Site D)*

*I only use it when I playsport. (Student, Site E)*

*Particularly when they have sport...we put on our sunscreen, and during the athletics carnival I had a big thing of sun screen going round and lots of kids brought sunscreen as well. (Teacher, Site E)*

As the key stakeholders were able to identify the link between sun protection behaviour and specific cues, such as those identified in the previous quotes, the notion of manufacturing 'triggers' was identified by participants as a potentially effective means to increase more consistent sun safe behaviours. These triggers were often associated with incentive-based encouragement, such as rewards for consistent sunscreen application, and the provision of equipment to be provided for use in exposed areas such as ovals.

Additionally, it was advised that increased engagement of student and community interest, possibly via competitions and sun protection encouragement posters, would be of benefit. Students felt that more posters placed around the school rather than at the front gate would be helpful to act as a reminder.

The act of triggering behaviour was strongly associated with sunscreen application, as many stakeholders indicated student sunscreen use was minimal, especially compared to hat-wearing behaviour. Subsequently, many stakeholders recommended sunscreen should be more readily available in the playground. This recommendation was advised by the majority of students as they indicated that their motivation to play and engage in outdoor activities often comprised their consideration of sunscreen application. They suggested sunscreen be provided in clear and easily accessible areas, which would act as a trigger for application:

*A dispenser when you enter a certain area for sunscreen... need to have it there not in classroom. (Student, Site D)*

*Out in the playground maybe you could have like shelves of sunscreen or hats or that type of thing. (Student: Site B)*

## Discussion

It is promising that the majority of stakeholders associated the term 'SunSmart' with sun protection practices and minimising the risks associated with harmful sun exposure (i.e. skin cancer and sunburn). All stakeholder groups were able to identify the five primary sun protection behaviours: hats, shade, protective clothing, sunscreen and sunglasses. These five practices align with the SunSmart recommendations advised by CCNSW to NSW schools.<sup>9</sup> Previous literature has shown Australians have a sound knowledge of the risks associated with sun exposure, which has been suggested to be as a result of consistent and long-term promotions and programs relating to this health issue.<sup>10,29,30</sup>

It was apparent that the majority of stakeholders were aware of a No Hat, No Play policy, which they overwhelmingly associated with the SSP. This finding aligns with previous research highlighting the strong link between sun protection policy and hat-wearing requirements, specifically students relocating to a shaded area if a school-assigned hat

wasn't worn.<sup>13,14,16,17</sup> However, reviews of the SSP using objective measurements have found that hat-wearing behaviour in SunSmart schools is far less than had been self-reported in other studies<sup>18</sup> and was comparable to schools without a SunSmart membership.<sup>19</sup>

The findings of this research identify a number of factors that may be influencing the division between hat-wearing policy and practice. There was a distinct lack of understanding associated with SunSmart policy documentation among students, parents and teachers at all five sites, as reported by these stakeholders. The lack of community integration is unsurprising considering previous research indicated parents (23%) and students (2%) were less likely to be responsible for the SunSmart application process in NSW SunSmart schools compared to staff (73%) and principals (69%).<sup>17</sup> While there has been support for a single individual championing a health promotion program in schools,<sup>31</sup> this study found that this can be problematic as the individual is unlikely to disperse SunSmart documentation with the broader school community, which can limit the application and sustainability of the SSP. While staff were aware of the premise and underlying philosophies behind the need for and creation of the SunSmart school initiative, they were not necessarily aware of specific policy, procedures or documentation present at the school. This was particularly evident in the inconsistencies that arose from participants' reports of their school's hat-wearing requirements. While the NSW SSP recommends students' play activities relocated to shaded areas if they are not wearing a sun-safe hat,<sup>9</sup> many stakeholders indicated students are not allowed to play at all if they were not wearing a hat. In addition to limiting potential effectiveness, the misconceptions of hat-wearing policy also reportedly had adverse effects on the mental health of students. Rather than being viewed as an active health promotion behaviour, students linked the outcomes of the hat-wearing policy as a punishment, which reportedly caused anxiety among students.

A notable instance of withholding information was evident at Site B, whereby the principal purposefully refrained from sharing information regarding NSWDE requirements so that the school community would be more supportive of hat-wearing behaviours enforced by the school. However,

while this may seem counterintuitive given the importance of community partnerships, evidence has shown state government mandates can be highly effective. When a similar policy (no shirt, no swim) was mandated by the Queensland education department, initial reviews suggested the policy item resulted in 95.8% of students wearing protective clothing.<sup>20</sup>

In addition to the inconsistencies associated with policy enforcement, there were also inconsistencies among role modelling. All stakeholder groups believed teachers should role model hat-wearing behaviours if they were to enforce the hat-wearing policy requirements of the school. However, students reported inconsistencies among staff role modelling, which caused frustration as they perceived staff were exempt from hat-wearing policy. The inconsistency among adult role modelling is evident in other studies. While Turner et al. (2014) found that 89% of adult role models wore hats while outside during school hours, Dudley et al. (2017) found that only 46% of adult role models wore hats while outside during school hours.<sup>18</sup> These variations highlight the discrepancies among adult role modelling behaviour.

Lastly, the recognition of triggers for sun protection behaviour, such as high temperature, school swimming carnivals and sport events, was promising as it indicated the school communities involved in this study wanted to improve their sun protection behaviours. However, Turner et al.<sup>20</sup> found that students' hat-wearing behaviours at school swimming carnivals to be poor, and their use of protective clothing had declined between 2009 and 2015. While Sharplin and Roth<sup>12</sup> found that NSW primary schools were 20% more likely to make sunscreen available at special occasions, i.e. sport excursions, than in all classrooms, the findings of this study and Dudley et al.<sup>18</sup> indicate that sunscreen consumption in NSW SunSmart schools is minimal. These findings suggest that while triggers activate an intention to engage in sun protection behaviours, the basic provision of resources is not sufficient in facilitating sun protection behaviours for all individuals. Including incentives for sun protection behaviour was recommended by participants, and has been identified by other researchers as a potential adjustment to the SSP to improve its effectiveness.<sup>20</sup>

The study design was strengthened by the use of the HPS framework as it supported

the identification of students, parents and school staff as key stakeholders of health promotion efforts within a school community. The integration of all three of these key stakeholder groups provided an insight into the SunSmart practices of school communities that hadn't been addressed by other qualitative studies. However, the convenience recruitment methods of the schools and participants could be considered a study limitation as the sample may not have been representative of the population. Given this limitation and the small sample of schools used for the research, it is necessary to indicate that these results may not be generalisable to all SunSmart school settings. However, as established in the introduction, the school setting is complex due to the multitude of interacting factors that influence practices and procedures.<sup>21,22</sup> Due to the depth required to investigate how key stakeholders interact with these factors, this study was only designed to provide insight into these specific school communities, and to act as a pilot for a larger study encompassing more diverse geographical regions of NSW or Australia. Future research studies should consider using a randomised recruitment strategy, or recruiting a higher number of participants to reach theoretical saturation.

## Conclusion and recommendations

While this research found that stakeholders were aware of the risks associated with sun exposure and the appropriate measures to reduce these risks, their understandings of the SSP were limited. Misconceptions associated with policy requirements and staff expectations were evident within and across all five school sites.

The awareness of No Hat, No Play and their advocacy for sun protection suggest teaching staff, students and community members support promoting sun protection behaviours within the school community. An important component of school health promotion is the development of a shared vision across the school community.<sup>23,31</sup> This requires collaboration among students, staff and broader community members.

As it has been almost a decade since the SSP was established in NSW, it may be pertinent to adopt a strategy to re-engage school communities. Given that sun safety is embedded in the Health and Physical

Education syllabus of the Australian Curriculum, which sets the expectations for educational content in all Australian schools,<sup>32</sup> the development of a strategy to increase consistency among the practices and policies of schools is necessary. The following recommendations were devised from the findings of this research, other relevant studies and principles of health promotion:

- Staff training could improve their understanding of policy and the importance of their role modelling behaviours. Other studies have highlighted the improvement of staff role modelling.<sup>19,20</sup>
  - It would be worthwhile for the Cancer Council to investigate how it could further support schools to implement the SunSmart Program using a HPS approach.
  - It could be argued that schools could potentially benefit from government policy that mandates the use of sun-safe hats to make enforcement easier in school communities.
  - Expanding on the identification of special events and high temperatures as a trigger for sun protection behaviour, school communities could also be educated to be mindful of the UV Index; specifically, how it determines the level of adequate sun protection to be used.
  - A reward/incentive-based strategy may be effective, as also suggested by other researchers.<sup>16,19</sup> Such a strategy could be used to target settings that provide a trigger for sun protection behaviour.
  - Adjusting the No Hat, No Play policy item to one that facilitates play activities rather than inhibiting play could result in students viewing the policy item more positively.
  - Given that sunscreen usage is also low, the integration of this sun protection practice is necessary. A sunscreen application monitoring strategy, which has already been applied in some schools,<sup>20</sup> may be worthwhile to investigate on a larger scale.
- Future studies should be completed on a larger scale, and should integrate self-reporting and objective evaluative methods to increase the validity of the findings and develop a more generalisable understanding of school-based sun protection strategies. More specifically, it would be beneficial to integrate a regional focus as research into health promotion efforts in regional schools is limited.

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