School leaders reflections on their school's engagement in a program to foster health literacy development

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ABSTRACT

Many health attitudes and behaviors formed during childhood are sustained through to adulthood, therefore childhood is a critical time to develop health literacy. Primary schools provide an ideal environment to equip children with lifelong health skills, understanding and knowledge. Through semi-structured interviews, this study gathered primary school leaders' reflections on the implementation of a program (HealthLit4Kids) designed to foster health literacy development in their schools. The aim of this study was to determine how school leaders experienced the HealthLit4Kids intervention. The results showed that leaders perceived the program had a positive effect on health literacy knowledge and understanding within the school community, as well as improved health behaviors. School leaders' statements indicated that key barriers such as parental engagement and an overcrowded curriculum would need to be navigated to ensure successful program sustainability.

1. Introduction

Population health and wellbeing outcomes rely on enabling children to thrive across the early years, adolescence and into adulthood. The Shanghai Declaration on promoting health in the 2030 Agenda for Sustainable Development identified health literacy (HL) as a critical determinant of health and urged for global investment to enhance HL throughout the life-course and in all educational settings (World Health Organisation, 2017). Critically, HL supports health and wellbeing across people's lives, the foundation of which begins optimally in childhood (Australian Commission of Safety & Quality in Health Care, 2014; Kilgour, Matthews, Christian & Shire, 2015). Despite this, few HL programs exist in the primary school context (Bröder et al., 2017; Nash, Patterson, Flittner, Elmer & Osborne, 2021).

In addition to being defined as both a social and relational construct, HL is also a personal asset that enables people to access, understand, appraise, remember, and use information to form health related decisions (Batterham, Beauchamp & Osborne, 2017). Distinct from HL, health education (HE) can be defined as consciously constructed opportunities for learning related to health. This involves some form of communication designed to improve HL, improve health related knowledge, and develop life skills which are conducive to individual and community health (World Health Organisation, 1998). While HL should be developed throughout the life course, childhood is the most important time to begin development of this asset, as many health attitudes and behaviors are formed during this period (Velardo & Drummond, 2017). For children, HL is observable in their interaction and practices with health-related information, knowledge, and messages in any given environment (Bröder, Okan, Bauer, Schlupp & Pinheiro, 2019). Implementing strategies to improve HL can reduce health disparities for children and their communities (Paakkari & Paakkari, 2012; Volandes & Paasche-Orlow, 2007). Further, if HE is taught in a manner that fosters individual HL asset development, future generations will be equipped to respond to pandemics and the growing burden of non-communicable diseases (Batterham et al., 2017). These outcomes can be achieved through interventions that support teachers to 'teach for HL' (Nash et al., 2020; Spencer, Kemp, Cruickshank, Otten & Nash, 2021).

The aim of this study was to determine how school leaders experienced the HealthLit4Kids intervention, a program designed to promote HL in five Australian primary schools for Kindergarten to Year 6 (chil-

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dren four to 12 years of age). School leaders included principals, assistant principals, advanced skills teachers, and specialist health and physical education (PE) teachers. HealthLit4Kids was developed with the aim of increasing the HL of teachers, children, and their communities (R. Nash et al., 2018). The program included three teacher professional development sessions (workshops) over twelve months which supported the co-design of a HL action plan tailored for each school's needs, and the provision of HL resources via an open access education portal. At workshop one, teachers developed a shared understanding of HL and what a health literate school might "look like, feel like, and do". They were invited to complete an organizational HL responsiveness checklist, which along with other workshop activities informed the development of a school specific action plan. At workshop two, with facilitator and peer support, teachers developed lesson plans with the school-wide action plan in mind. Teachers were encouraged to consider the HL content knowledge and pedagogy most appropriate for developing HL. Students then participated in a term of learning (with a HL development focus) and were invited to demonstrate their HL by creating 'artefacts,' such as mental health (egg) cartons of calm, food plates, podcasts, videos, and posters. These were exhibited at a whole-of-school Health Expo at the end of the program. The lesson plans and artefacts highlight that the teachers employed cross curriculum integration, student centered learning approaches and inquiry-based strategies (MacDonald, Cruickshank, Nash & Patterson, 2021).

Each school was encouraged to revisit their action plan to embed HL into the school and curricula on an annual basis. The Health-Lit4Kids program logic model (R. Nash et al., 2018) outlines the expected short, medium, and long term program outcomes. These include: greater awareness of HL in schools, improved stakeholder HL knowledge, skills and practices, co-designed HL Action Plan in each school, HL embedded across the curriculum, improved school HL awareness, leadership, competencies and partnerships, better use of HL resources, greater understanding of childrens' HL and greater insight into how HL can be assessed or profiled, as well as more HL content in teacher training and professional development. Ultimately, the long-term goals are to have HL responsive schools and improved health outcomes and educational attainment for children, their families, and their communities. Whilst other program findings have been published elsewhere (e.g., Nash, Cruickshank, Flittner, et al., 2020; Nash, Cruickshank, Pill, et al., 2020) here we report how primary school leaders experienced the program and their perspectives of the impact it had on the teaching practice in their schools.

Primary schools are expected to implement strategies to promote teaching that supports HL and primary school classroom teachers are well placed to teach HL within the school context, because of their in-depth knowledge of their students' lives, needs and abilities (Bröder & Carvalho, 2019; Otten, 2020; Paakkari & Paakkari, 2012). The Australian Curriculum: Health and Physical Education (AC:HPE) (ACARA, 2016) is organized into two content strands: (1) personal, social and community health and (2) movement and physical activity. Within personal, social and community health the sub strands are: (1) being healthy, safe and active, (2) communicating and interacting for health and wellbeing and (3) contributing to healthy and active communities. The focus areas (e.g., food and nutrition, health benefits of physical activity, mental health and wellbeing, relationships and sexuality, alcohol and other drugs) have been mapped to these to assist teachers with their planning. In Australia, it is a requirement to teach HE (which is a sub-component of HPE) in primary schools for the development of knowledge, understanding and skills related to the three dimensions of HL: functional, interactive and critical (ACARA, 2016). As described by Nutbeam (2000), functional HL involves the transmission of factual information on health risks and health service utilization. Interactive literacy builds on this to provide opportunities for individuals to develop the requisite personal skills to manage their health. Critical HL involves advocacy for self and communities' health needs. However, a range of factors such as perceived and actual lack of time,

confidence, or an inability to teach HL lead to HL being under-taught in many primary school curricula (Bröder & Carvalho, 2019; Cruickshank & Nash, 2021; Otten, 2020).

School leaders are central figures within schools and act as gatekeepers to school innovations and priorities, and whether their school will be a health promoting organization (Dadaczynski, Kotarski, Rathmann & Okan, 2021; Gugglberger, 2021). The HPE learning area is required for all children within the compulsory ages of schooling in Australia, yet there is a paucity of information about principal's beliefs, attitudes, intentions, and behaviors about its enactment (Dadaczynski et al., 2021; George & Curtner-Smith, 2017; McCuaig, Carroll & Macdonald, 2014). There is also limited research on the principal (or school leader's) role in promoting HE for HL development, and the school as a health promoting context (Rizzo, 2020). Research has noted that HPE can be marginalized within schools because subjects such as mathematics and science are considered more academically rigorous and more centrally aligned to the academic priorities of schools (Cruickshank, Hyndman, Patterson & Kebble, 2021; Richards, Gaudreault, Starck & Mays Woods, 2018). Within Australia the relative importance of HPE has been confounded by the National Assessment Program for Literacy and Numeracy (NA-PLAN) which requires all Year 3, 5, 7 and 9 students to undertake annual standardized tests in literacy and numeracy and has narrowed the curriculum to increasingly focus on testable content (Bleazby, 2015).

Enablers of school-wide health program implementation and sustainability include quality leadership, strong organizational capacity, an established school health climate, and collective support from school staff, parents, and community (Lucarelli et al., 2014). School leaders with relatively low knowledge, understanding, and strategic awareness of how to promote HE programs to enhance school social environments and school community relationships, may be a barrier to the sustainability of HL program adoption (Liu et al., 2019). Further, school leadership are integral to promoting a culture of collegial supportiveness that can enhance engagement and energy levels of teachers and promote a positive caring school climate (Lester, Cefai, Cavioni, Barnes & Cross, 2020). As part of the evaluation of the HealthLit4Kids program and its impact on the school health climate, teacher practice, and sustainability, this study analyzed the school leaders' reflections of their school's involvement with the HealthLit4Kids program.

2. Material and methods

The aim of this study was to determine how school leaders experienced the HealthLit4Kids intervention. Consistent with a pragmatist worldview (real world, problem centered, and action orientated) (Creswell, 2013), the authors used an approach that would enable them to understand the problem, as well as the "what" and the "how". Collaborative reflexive thematic analysis has been described as both an approach and a data analysis technique (Braun & Clarke, 2019) and was chosen for its suitability to the research aim. The authors acknowledge their role as an instrument in the research process (Creswell, 2013). Author 1 and Author 5 co-founded the program and delivered it to a number of schools. They discussed the potential that they may influence the interpretation of the data, however, they were critically aware of this potential bias. For this reason, three researchers (Authors 1, 2 and 3) independently coded the data. Authors 2 and 3 were not involved in the program design or delivery and provided subjective critical voices in the discussion of the findings. This is referred to as collaborative and reflexive thematic analysis (Braun & Clarke, 2019). Ethics approval was obtained from the Social Sciences, Human Research Ethics Committee of Author 1′s University (approval number H16289 and H17189). Data collection occurred following ethics approval.

2.1. Data collection

At six months and 12 months following the initial project implementation year, each school principal or a member from their leadership

team was invited to participate in an interview. Informed consent was obtained prior to each interview. As these interviews formed part of the wider evaluation of the program, the interview guide was based on the program logic model which articulates the short, medium, and long term outcomes expected for HealthLit4Kids (R. Nash et al., 2018). Two research assistants (RAs) completed the interviews, which were semi-structured (question guide provided - Supplementary file 1), audio recorded and later transcribed verbatim. Interviews were conducted between (22/11/2017 –13/5/2020) with eight school leaders from five schools. Each school leader was provided with the opportunity to review their transcripts and requested changes were minimal.

2.2. Data analysis

Three researchers (Authors 1, 2 and 3) analyzed the data independently. Thematic analysis was inductively employed to identify semantic themes within the data (Braun, Clarke & Weate, 2016). Semantic themes are consistent with the interpretivist nature of this study and given the small number of participants ($N = 8$) going beyond the surface meaning of the data (latent themes) would not be appropriate (Braun et al., 2016). The thematic analysis process included familiarization with the transcript, followed by individual codes added to the transcript, leading to individual codes being grouped into sub codes and sub codes grouped into codes, and finally parent themes. The parent themes, codes, and subcodes suggested by all three researchers were considered and points of agreement and disagreement were discussed.

The authors employed a number of strategies to ensure rigor in the research process. These included: 1. Interviews were carried out by RAs who were not involved in the program delivery and the data was de-identified by one RA (participants were given a unique identifier) before being shared with the researchers. 2. Participants were given the opportunity to read transcripts and final themes were shared with school leadership, otherwise known as member checking. 3. Researchers acknowledged their role in program design and delivery and the potential associated bias this may have introduced. 4. Consistent with collaborative reflexive thematic analysis three researchers independently coded the data. They met and shared their coding and any common codes were identified and retained. Others were discussed and discarded. 5. All three researchers kept reflexivity journals. 6. Peer debriefing was carried out with all other authors on the team. The three researchers (Authors 1, 2 and 3) sought critical questioning and inquiry from the other authors prior to finalization of the parent themes.

3. Results

The eight school leaders shared their observations and learnings, from which the researchers identified three parent themes: (1) Health Literacy Knowledge and Understanding, (2) Health Literacy Behaviour and Practice and (3) Program Sustainability. The themes, codes, sub codes, and example quotes are provided in Table 1.

4. Discussion

The findings from the interviews with the school leaders will be discussed in relation to the three parent themes. The first part of the discussion will consider participants' reflections on the program's impact on knowledge and understanding of HL, health behavior and teaching practice and will conclude with consideration of its sustainability.

4.1. Health literacy knowledge and understanding

HL was previously an unfamiliar term to the leadership in the five participating schools. Further, members of the school leadership observed that their teachers were unsure how to incorporate HL into their teaching prior to participation in the HealthLit4Kids program. Post implementation, they stated that teachers better understood the concept

of HL and that their teachers were more confident in their classrooms to promote the children's development of HL as a personal asset. For example:

"…. the teachers are now feeling more confident to be able to teach health in their classroom and looking at all the different aspects of health, and even just to see their conversations in regards to parts of the health curriculum that they didn't realize that they should be teaching." Participant 2, 6-month interview

Participants also acknowledged the important role of parents in the child's HL development, specifically, the importance of parents reinforcing key messages learnt at school in the home. This is illustrated by this quote:

"But it was really nice to see the whole school taking on the same sort of theme, because it promoted it more throughout the school and the community… Children were bringing it home. Parents were talking about it." Participant 1, 12-month interview

Despite the varied complexities of the five schools involved in this study, it appeared that participation in the HealthLit4Kids program made positive changes to the school leaders' and teachers' HL knowledge and understanding.

4.2. Health literacy behavior and practice

4.2.1. Individual behavior and practice

Following implementation of the HealthLit4Kids program, the school leaders believed that student and teacher engagement in HL development increased. They reflected that their staff who personally valued health, or were more aligned to health, were more likely to recognize the importance of HL. In addition, the leaders observed that their teachers were more likely to choose to teach the health topics they were familiar with prior to the project, especially if they had the support of the principal. This is illustrated by the following quotes:

"(Health) is in the forefront of teachers' planning nowadays, rather than it being an add on." Participant 4, 12-month interview

"(HealthLit4Kids) looks like it's embedded in the weekly teaching, in the planning, it's embedded… we made everybody report on health last year, which was the first time, and that worked well, and obviously everything's changed this year, but it was going to be part of our reporting as well." Participant 2, 12-month interview

These findings are consistent with previous research that found principals and the school leadership team influence the school culture, teacher effectiveness and motivation, and curriculum implementation (Lee & Li, 2015; Lester et al., 2020; Liu et al., 2019).

The school leaders confirmed in the interviews that the HL development of the students was supported by tangible evidence of the learning experience through the artefacts (creative pieces) they produced. They believed that artefacts were a useful mechanism to engage the students in their learning and provided tangible evidence of their learning:

"The artefacts that were developed in the program last year were really, really authentic way of engaging the students, we luckily had a school fair that year, so that then linked in to the school fair, so the artefacts were a great way of showing, highlighting the kids' learning to the community." Participant 3, 6-month interview

The participants confirmed that stories, videos (including student insights/voice), specific examples or experiences, and the artefacts were all essential to supporting the HL development of students. They agreed these activities provided the students with opportunities to develop their interactive and critical HL, as well as functional HL skills (Nutbeam, 2008). Members of the school leadership team recognized the artefacts were pertinent to student engagement, the learning process, and provided the children with a vehicle to communicate their learning to others.

"If we've got a chance to talk about it or if we need to follow it up, then we can, it gives the children a voice, so student voice is really important with us this year as well, we need to listen to what the kids are telling us and

Table 1
Principal data parent themes, code, sub code and example quotes.

Parent theme	Code	Subcodes	Example quotes
Health Literacy Knowledge/ Understanding	Familiarity	HL Mental Health	"…we haven't considered the term or the concept of health literacy." *Participant 1, 6-month interview* "The health aspect as far as food and exercise has been a part of school land forever, so that just continues normally. I think (HealthLit4Kids) …has given us … a green light to really pursue the mental health side." *Participant 3, 12-month interview*
	Teacher confidence	Understanding/ Confidence	"We didn't use it (the term HL) at all prior to health lit for kids…but now, yep. Totally embedded across the school, teachers are very comfortable with the term." *Participant 3, 12-month interview* "I think the greatest thing, though, is that now that the health curriculum is turning into reporting phase next year, the teachers are now feeling more confident to be able to teach health in their classroom and looking at all the different aspects of health, and even just to see their conversations in regards to parts of the health curriculum that they didn't realize that they should be teaching." *Participant 2, 6-month interview*
	Student/parent knowledge	Students/ Parents	"With the 3/4 s, we did a nutrition unit, looking at packaging and that sort of thing. And I've noticed a lot since then, I'll have, kids will come up to me, or I hear them speaking about looking at packages that they've brought to school and just reading them." *Participant 4, 12-month interview* "But it was really nice to see the whole school taking on the same sort of theme, because it promoted it more throughout the school and the community… Children were bringing it home. Parents were talking about it." *Participant 1, 12-month interview*
Health Literacy Behavior/ Practice	Increased HL teaching	Planning/ Reporting/ Collaboration	"(Health) is in the forefront of teachers' planning nowadays, rather than it being an add on." *Participant 4, 12-month interview* "(HealthLit4Kids) looks like it's embedded in the weekly teaching, in the planning, it's embedded… we made everybody report on health last year, which was the first time, and that worked well, and obviously everything's changed this year, but it was going to be part of our reporting as well." *Participant 2, 12-month interview* "Yeah, there is (collaboration amongst teachers). In the staffroom I hear (conversations), and then I've had teachers come and ask me certain things like last year remember we did this, this and this, where did you find that from, which website? And I've actually got a folder set up on our computer system where teachers can access all the stuff that we had last year, so they can go to it and get resources." *Participant 2, 6-month interview*
	Improved health behaviors	Students/ Staff/ Parents	"But overall there is a lot more fruit, a lot more made muffins and things like that, which is great for our school community because it wasn't something that was really happening before. So that can be attributed the increased teaching in the kitchen, when they are learning to make healthy snacks." *Participant 5, 6-month interview* "Certainly here, it's the classroom teachers who have taken it on board and that's the thing as well. Doing it really happily and it's good for staff, too. We do a mindfulness activity at the beginning of every staff meeting and it's lovely." *Participant 3, 12-month interview* "Yeah. And we've got like one of our teachers is a Zumba instructor and so she's running Zumba after schools and there are - the staff obviously, but there are some parents that come along to that, which if you'd asked me three, four years ago if we'd have Zumba classes at the Primary School, I'd have laughed at you, in that laughed ha but that parents would be at - no way. But they are." *Participant 5, 6-month interview*
	Engagement	Staff/ Parents/ Students/ Whole school involvement	"The biggest highlight for the whole program was the initial buy in from staff, there was absolutely no resistance at all from staff which is pretty incredible really, because our lives are so busy, our curriculum is pretty crowded, if we have something new, the first thing, teachers will go back to a default mechanism and just go, gosh, not another thing, this is going to be really hard, how am I going to fit it in? There was absolutely nothing like that, they really, really engaged with the program, they knew that it fitted really well alongside what we would normally do." *Participant 3, 6-month interview* "A lot of the parents did take it (healthlit4kids) on board." *Participant 1, 12-month interview* "I just love the expo. I thought that was great…Yeah, just a highlight was just seeing the kids showcase their work. They were so proud at that expo when they could show it to their parents, and I think we had in the end – I think we had about 80 families come through." *Participant 5, 6-month interview* "We used our big hall (for the expo). Yep. So we displayed work from kinder all the way through to Grade 6." *Participant 5, 6-month interview*

Table 1 (*continued*)

Parent theme	Code	Subcodes	Example quotes
Program Sustainability	Evolving HL needs	Revision Changing focus	"I think we should, I think we should. (revisit the action plan)… we'd be mad not to bring it back on to the table and revisit, renew and maybe - I don't know if we rebadge it or whether we just resell it." *Participant 5, 6-month interview* "A lot of these parents would be smokers but our children don't - our upper primary students in particular, there's no indication of any - in fact, it's more the other way, that they're very anti those things, they're very land care focused, they're very recycle, reuse, all of that stuff is a very big push because of our garden, kitchen garden program, we do a lot of recycle, reuse all sorts of stuff like that. But times gone by it would be smoking and alcohol you'd be talking about when you're talking about children's health." *Participant 5, 6-month interview*
	Accountability	Teachers Reporting Strategic plan	"Last year when we first took on the project, we had the health literacy expo which we ran at school, so that basically forced the teachers – I shouldn't say the word 'forced' – but it made them really look at the curriculum and decide upon an aspect of the curriculum that they were going to deliver in their classroom to begin with." *Participant 2, 6-month interview* "But to actually report against it would probably bring it (HL) back up to people's minds." *Participant 1, 6-month interview* "So, last year health literacy was put into the strategic plan… the teachers really don't have any way out, really, because it's part of your strategic plan." *Participant 2, 6-month interview*
	Leadership impact on sustainability	Change of leadership/ HL Professional Development should be ongoing	"I'm not sure what the other teachers have done so far this year. And it hasn't been reinforced, because like I said, we've got a new principal, who probably don't know the whole system of what we went through." *Participant 1, 12-month interview* "(It is beneficial) for the teachers to see that it's not just a one-off thing." *Participant 2, 12-month interview*
	Barriers	Ethics/ Parents/ Overcrowded curriculum can be a barrier to implementing HL/ Communication	"Just from an admin perspective, it's probably (worth) looking at the sustainability of the paperwork side of it early on in the process. So, all the ethics paperwork was quite challenging to get on top of." *Participant 4, 12-month interview* "I think the Healthlit4Kids facilitator might have tried to have a session with some of our parents and I know from other things that we have at our school, trying to get our parents to come into sessions, we don't get a very big population of them coming in." *Participant 1, 12-month interview* "We have to get it to tie in to our normal health and PE as much as we can, because there's just not enough hours in the day." *Participant 4, 6-month interview* "What would be really good would be to incorporate the community, parent community in what we're doing at school in getting the message out there, that this is a really important part of what we're doing. Communication from schools is an issue that we always hear about, I didn't know that happened, I didn't know that's happening, we put it in the newsletter every week, we do this, we do that, we do this as far as communication, but you still don't get everybody." *Participant 3, 6-month interview*
	Artefacts	Learning/ Student voice	"The artefacts that were developed in the program last year were really, really authentic way of engaging the students, we luckily had a school fair that year, so that then linked in to the school fair, so the artefacts were a great way of showing, highlighting the kids' learning to the community." *Participant 3, 6-month interview* "If we've got a chance to talk about it or if we need to follow it up, then we can, it gives the children a voice, so student voice is really important with us this year as well, we need to listen to what the kids are telling us and the kids need to know that they've got that capacity to talk." *Participant 3, 12-month interview*
	Integration	Curriculum/ Integration	"Year 3, 4 did movement and physical activity and they combined the health curriculum with digital technologies and that's where you actually get things sticking, is when you can get that cross curricular activity, because the curriculum is meant to be delivered in a way that's not isolated." *Participant 1, 12-month interview* "And the breadth of health lit means that you've got so many topics that you can cover. It's not narrow, so it's really easy to integrate." *Participant 3, 12-month interview*
	Positive change	Change/ Embedded	"So, what we've done is we have introduced a 10-minute eating time, both recess and lunch time, where the whole school sits down at the same time. Now, that was a massive, it had a massive impact on learning for the good, but a massive impact on timetabling, too. But it's working." *Participant 2, 6-month interview* "It's (HealthLit4Kids) basically embedded definitely embedded, yeah, it's basically a throwline that covers everything." *Participant 3, 12-month interview*

the kids need to know that they've got that capacity to talk." Participant 3, 12-month interview

Further, they suggested that sharing and discussing the artefacts schoolwide supported other teachers to introduce HL into their own teaching. The artefacts, in combination with the Health Expos held at each school, provided the students with opportunities for both reflection and action awareness.

The school leaders reflected upon their teachers' understanding and knowledge and how it influenced their behavior and the practice of teaching health. Our findings provide evidence of an improvement in health behaviors of students, staff, and the wider school community through engaging in the program. The participants shared their belief that the program increased the likelihood that teachers would focus on HL beyond the program implementation year. They also reported that the program encouraged collaboration, curriculum integration, and production of tangible evidence of learning; each leading to high levels of engagement by students, parents, and teachers which have been shown to be critical for creating a positive school climate (Lester et al., 2020). The participants' positive understandings of these benefits of the Health-Lit4Kids program, suggest a modification in their understanding and appreciation of HL.

4.2.2. Whole school approach

Here we take a whole school approach to mean a focus on HL embedded in a school's culture in addition to teaching and learning in the classroom (Rowe, Stewart & Patterson, 2007). The importance of a collegial and collaborative school environment, as well as the involvement of children, parents, teachers, and other key staff, were recognized by the school leaders as key factors for the implementation and continuation of the HealthLit4Kids program. The participants expressed that the success of the program was dependent upon a supportive leadership team or dedicated committee along with support from others, including the school nurse, HPE specialist teacher or the advanced skills teacher assisting the classroom teacher. Importantly, the leadership provided a legitimizing (authorizing) environment, time for planning and discussion, resources and dedicated time in the classroom to enable teachers to enact HL. In this way, the supportive leadership and engagement of the teachers became mutually reinforcing:

"The biggest highlight for the whole program was the initial buy in from staff, there was absolutely no resistance at all from staff which is pretty incredible really, because our lives are so busy, our curriculum is pretty crowded, if we have something new, the first thing, teachers will go back to a default mechanism and just go, gosh, not another thing, this is going to be really hard, how am I going to fit it in? There was absolutely nothing like that, they really, really engaged with the program, they knew that it fitted really well alongside what we would normally do." Participant 3, 6-month interview.

The school leaders observed that a whole school approach and collaborative practice provided their teachers with an opportunity to work together on a common goal. These findings were consistent with Lucarelli et al. (2014) who advised that facilitators of school-wide health programs include leadership, strong organizational capacity, an established school health climate, and the ability to capitalize on collective support from school staff, parents, and community. The concept of a whole of school approach is consistent with the aim of the Health Promoting Schools (HPS) framework (Nutbeam, 1992), which was considered in the original design of the HealthLit4Kids program (R. Nash et al., 2018) and has recently been incorporated into the Australian Council for Health, Physical Education and Recreation (ACHPER) Active and Healthy Schools Committee (ACHPER, 2021) to encompass a breadth of school environment enablers to promote health (O'Dea & Maloney, 2000).

School leaders described how a whole school approach was important for enabling the HealthLit4Kids program, as HL development opportunities occurred inside and outside the traditional classroom. For example, in the school garden, canteen and playground. The Health-

Lit4Kids EXPO was a key design element that supported interactive and critical HL, whereby students could share their learnings from the classroom with other students, teachers, parents, and community members. This is reinforced by the following statements:

"I just loved the expo. I thought that was great…Yeah, just a highlight was just seeing the kids showcase their work. They were so proud at that expo when they could show it to their parents, and I think we had in the end – I think we had about 80 families come through." Participant 5, 6-month interview

"We used our big hall (for the expo). Yep. So we displayed work from kinder all the way through to Grade 6." Participant 5, 6-month interview

Others have highlighted that this interactivity and dialog can increase comprehension of HL content (Bruselius-Jensen, Bonde & Christensen, 2017; Paakkari & Paakkari, 2012). Further, if we provide children with opportunities to critique, question, and form links to personal experience and familial, contextualized understandings, this can promote HL development (Bröder et al., 2019).

4.3. Program sustainability

School leaders provided several key insights into how programs such as HealthLit4Kids can be embedded and sustained within schools. Given HL is continually evolving and is context dependent (Aghazadeh, Aldoory & Mills, 2020; Bröder et al., 2017), the needs of each of our schools differed. This variance reinforces the importance of not taking a 'one size fits all' approach to HL programs in schools, as this approach is inadequate in meeting the diverse needs of our students (McCuaig, Quennerstedt & Macdonald, 2013). The school leadership evidenced their commitment through additional staffing resources, or movement of resources to support the program's continuation beyond its implementation year. Participants reported an intention to continue to teach HL and focus on health topics in the classroom within their schools. However, many reported they no longer referred to the term HealthLit4Kids specifically, rather it is integrated into curriculum content and teaching practice. Some school leaders stated that they were currently planning for their next health focus area (third year of the program) such as planning to promote HL development through a focus on mental health; a topic many teachers were not previously comfortable to address. Other participants shared that the EXPO had become an annual event at their school.

The co-design of each school's HL action plan was an important mechanism for supporting a tailored approach to HL development and established a shared understanding of HL schoolwide. Some schools implemented a one-page policy to complement their Action Plan. Peralta and Rowling (2018) also suggested a HL checklist to support school leadership to evaluate their school's commitment to HL through its mission, practices, and policies. However, as described by the participants, some elements of the Action Plan did not continue beyond the first year (implementation).

The school leadership reported that the HealthLit4Kids program promoted teacher accountability for facilitating HL development. For example, the EXPO required commitment and accountability to ensure that each classroom could share and evidence their learning through their artefacts. However, the school leaders highlighted that the Education Department does not have any specific AC:HPE reporting requirements, therefore, teachers may be less likely to spend time on this curriculum area. Participants shared that unless a program was incorporated into the school's strategic plan or was a requirement for external quality assessment it was unlikely to be continually implemented.

The issue of accountability is an ongoing concern for the sustainability of the HealthLit4Kids program, due to a lack of external independent inspection at the study schools. In contrast to Australia, in Britain for example, English schools are subject to Office for Standards in Education, Children's Services and Skills inspection visits with a similar function carried out by Education Scotland. As the school leadership and teachers are not subject to this kind of scrutiny, they effectively have a

greater influence on their teaching compared to their Northern Hemisphere counterparts. In other words, Australian teachers have greater scope or flexibility to 'cherry pick' content and practices that most align with their own interests and values rather than those that explicitly meet curriculum requirements.

The school leaders acknowledged their role in ensuring the sustainability of the HealthLit4Kids program, but such leadership is only effective where the staff interests and values also aligned to HealthLit4Kids. Continuity in leadership roles to ensure the HL action plan goals were achieved and a whole school focus were also important factors for program sustainability. Leadership support (especially from the principal) was an important driver of program success. Where principals did value the aims of HealthLit4Kids they helped to ensure the program was sufficiently resourced. This included facilitation of key program leaders and/or committees to oversee the program, action plan objectives and scheduled time for individual and collaborative planning. This is consistent with a study by Rizzo (2020) which highlighted the significant influence principals can have in maintaining motivation for health development through promoting a positive health culture, supporting school staff to develop the skills needed for successful change, and encouraging staff to sustain new practices and activities.

The school leaders reported barriers to implementing the HealthLit4Kids program which are important for other school health programs to consider. When Nutbeam (1992) introduced the HPS framework, significant challenges were identified including teacher resistance, financial challenges, involvement of parents, and a gap between the HPS concept and school practice (Turunen, Sormunen, Jourdan, von Seelen & Buijs, 2017). Some of these challenges continue today and were evident in our study. First, ethics and data collection processes associated with the program's evaluation created administrative challenges for the teachers. Second, engaging and communicating effectively with parents was a challenge. Third, the overcrowded curriculum was a common barrier acknowledged by both the school leaders and teachers (Nash et al., 2020). Principals with low knowledge, understanding, and strategic awareness of how to promote HL programs may also present a barrier to the sustainability of health programs (Liu et al., 2019). Other studies have also documented known barriers to school-wide health program implementation and sustainability including over-emphasis on academic subjects, lack of institutional support, low prioritization of health initiatives, low levels of parental engagement, poor teacher capability, and weak community collaboration (Langford et al., 2015, 2017).

As shown, the school leaders described the importance of addressing teacher concerns of time and an overcrowded curriculum. Rather than health being promoted as a siloed subject, the HealthLit4Kids program encouraged teachers to integrate HL development opportunities within and across existing curriculum:

"Year 3, 4 did movement and physical activity and they combined the health curriculum with digital technologies and that's where you actually get things sticking, is when you can get that cross curricular activity, because the curriculum is meant to be delivered in a way that's not isolated." Participant 1, 12-month interview

The school leaders shared that schools that had already adopted inquiry-based learning strategies or were already integrating multiple parts of the curriculum in their lessons could more readily adopt the HealthLit4Kids program. McDermott et al. (2011) and MacDonald et al. (2021)) argued that the future of health subjects in schools would be stronger, if it were better aligned to other subjects and integrated more fully into other curriculum areas. Participant comments indicated they agreed with this sentiment. For example: *"…and the breadth of health lit means that you've got so many topics that you can cover. It's not narrow, so it's really easy to integrate."* Participant 3, 12-month interview

During their interviews, the school leadership highlighted the importance of greater parental involvement and recommended that education also be directed at parents in the future. This is interesting given the parent opinions of the HealthLit4Kids program were positive, it should be noted the parents placed a high value on effective communication from schools and raised a range of health areas they valued and would like to see as a future focus, such as food and nutrition, physical activity, and mental health (Nash et al., 2020). DeWalt and Hink (2009), acknowledged the interplay between parent, caregiver, or teacher's provision of health messages to their children and how the children make sense of the dialog. Teachers participating in the HealthLit4Kids program described that parent engagement was challenging, and that they often did not feel comfortable discussing health topics with the parents (Nash et al., 2020). The established relationship between parental HL and their children's health outcomes supports the participants' concern for more direct involvement of parents (Bhagat, Howard & Aldoory, 2018; DeWalt, Berkman, Sheridan, Lohr & Pignone, 2004; Kumar et al., 2010; Pulgarón et al., 2014; Sanders, Shaw, Guez, Baur & Rudd, 2009). Optimal models to facilitate this require further consideration.

At six- and 12-months post implementation, the school leadership reported a positive change in the health attitudes of the children, teachers and their broader school community. They also recognized that a focus on health, HE, and HL development of the students, staff, and community had become embedded in the school culture:

"It's (HealthLit4Kids) basically embedded, definitely embedded, yeah, it's basically a throwline that covers everything." Participant 3, 12-month interview

A positive health culture critically supports sustainability of this program. Each school assessed their HL responsiveness (Elmer et al., 2020), which provided them with awareness of their responsibilities to promote HL, which may have reinforced a health culture schoolwide. This reinforcement is also consistent with the aims of HPS (Nutbeam, 1992).

4.4. Impact on teaching practice and its sustainability

School leaders who valued health and programs that support a health promoting school and HL development contributed to program success. Success was underpinned by a whole school approach, consistent collaborative practice, and the encouragement of parental involvement. School leadership may also be a major contributing factor in promoting HL education, therefore there is a clear need for uplifting the understanding of the school leadership team so they can adopt HL as part of the strengths-based educative remit of HPE. Our study contributes new knowledge and insights into how HL can be operationalized and sustained in schools. Specifically, our findings show that the leadership team play a key role as enablers of HL in their schools. These findings also highlight the importance of acknowledging schools as socially complex, adaptive systems, which can make enacting change challenging (Keshavarz, Nutbeam, Rowling & Khavarpour, 2010).

To enhance student, staff, and community HL, future programs that incorporate regular professional development opportunities for principals and teachers are advocated. Sustainability is more likely to be achieved if school leaders understand and value HL, contextualize action plans, promote accountability, support curriculum integration, inquiry-based strategies, parental engagement, and a positive health culture. Further research is required to determine how efforts to support the HL development of children and their communities can be scaled and sustained. Determining if programs such as HealthLit4Kids have an impact on academic achievement and health outcomes would support the case for a greater focus on health and HL in the school context.

4.5. Limitations

This study had a number of limitations. First, the interviewee might be neglecting to report negative elements of the program for fear of offending. This is otherwise known as courtesy bias which is a form of response bias (Liamputtong, 2013). Given that the data reflects a positive program impact, the potential for this to have occurred cannot be discounted. Second, the range of interviewers could have impacted results. Whilst a question guide was utilized, there were two different in-

terviewers involved in the data collection. This may have led to different interview styles and influenced the data that was collected.

5. Conclusion

This study examined the reflections from school leaders from five primary schools at six-and-twelve-month timepoints following the implementation of the HealthLit4Kids program. The aim of this study was to determine how school leaders experienced the HealthLit4Kids intervention. The school leaders recognized the important role their teachers play in supporting HL development amongst their students and communities (teachers, children, and families). Three parent themes were identified in the data: (1) Health Literacy Knowledge and Understanding, (2) Health Literacy Behavior and Practice, and (3) Program Sustainability. The school leaders interviewed highlighted that prior to program implementation HL was seldom taught, and HL was an unfamiliar concept within their schools. Participants believed that following program implementation the likelihood that teachers would focus on HL in their future practice had increased. Moreover, the school leaders provided evidence that health behaviors exhibited by students, staff, and the broad school community had improved as a consequence of engaging in the program. More research is required to determine if HL can be developed and assessed amongst primary school aged children. It will also be important to determine if HL does improve the academic achievement and health outcomes of our future generations. Either way, it is anticipated that HL will be key to addressing the growing burden of non-communicable diseases and future pandemics

An ethics approval statement (if relevant)

This study was approved by the Social Sciences, Human Research Ethics Committee of Tasmania (approval number H16289 (pilot school approved 20/3/2017) and H17189 (proof of concept 4 schools approved 2/5/2018).

Supplementary File 1. Semi-structured question guide for interviews with school leaders

Question 1. Had you and your staff used the term Health Literacy prior to your adoption of the HealthLit4Kids program? If so how/in what context?

Question 2. Did you adopt a HealthLit4Kids school wide action plan? Where there any specific highlights?

Question 3. Have you noticed any changes school-wide since the commencement of Healthlit4Kids? Please describe

Question 4. Which elements within the Health and Physical Education Learning Area within the Australian Curriculum became your focus in 2018? Have you got a new focus for 2019? Can you describe each?

Question 5. Is your school/school community still using the HealthLit4Kids Action Plan? If yes how? If no why?

Question 6. What does HealthLit4Kids look like in your school now?

Question 7. Please offer any other feedback and/or suggestions for improvement, engagement, alignment and sustainability.

Declaration of Competing Interest

All authors of this article declare they have no conflicts of interest.

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