

**Title:** Health promotion competencies for promoting child-oral health: Victorian multidisciplinary workforce perspectives

Short running title: Health promotion competencies - child-oral health

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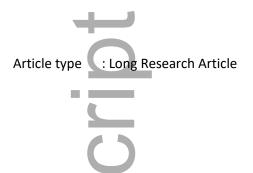
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# Health promotion competencies for promoting child-oral health: [State] multidisciplinary workforce perspectives

**Note:** The manuscript has been anonymised to meet journal requirements. Any potentially identifying information or citations have been removed and replaced by explanatory text in square brackets e.g. [Program name], [Reference removed for blinding].

## ABSTRACT

**Issue addressed:** Population oral health (OH) improvements depend on successful, coordinated execution of oral health promotion (OHP) programs by both oral and general health professionals with key competencies (skills, abilities, knowledge and values). This study explored multidisciplinary professionals' perspectives of the competencies required for successful implementation of a community-based OHP program called [Program name] in early childhood settings in [the state], Australia.

**Methods:** Convenience sampling was used to recruit multidisciplinary professionals working in the [Program name] early childhood health promotion program in [the state]. Semi-structured focus groups were conducted with program managers/coordinators (n=26) from 21 [Program] sites and the state-wide program coordination team (n=5). Focus groups explored OHP competency needs, capacity to promote child OH and strategies for enhancing OHP competencies. The competencies identified through focus groups were then compared to the International Union for Health Promotion and Education (IUHPE) competencies framework.

**Results:** Strategies to enhance individual and organisational OHP competencies included intersectoral collaborations; working in multidisciplinary teams; support networks and partnerships; sharing skills and expertise between health professionals. The OHP competencies identified by the participants were consistent with key IUHPE domains including: ethical values and health promotion

knowledge base underpinning, enabling change, advocacy for health, mediating through partnerships, communication, leadership, assessment, planning, implementation, evaluation and research.

**Conclusion:** A multidisciplinary workforce based in community settings can play key and complementary roles in OHP and widen avenues for oral disease prevention.

**So what?** Integrated collaborative workforce models involving multidisciplinary professionals beyond the OH sector can more effectively support efforts to address the burden of oral disease.

**Key words:** oral health, community-based intervention, early childhood, intersectoral collaboration, qualitative research

# BACKGROUND

Oral health (OH) is fundamental to general health and wellbeing. Oral disease not only causes pain and discomfort but can affect general wellbeing, quality of life, speech, eating, sleep, self-esteem and self-confidence.<sup>1, 2</sup> Oral disease is a significant global public health issue that is largely preventable.<sup>3</sup> In Australia, early childhood caries (decay in children's teeth) is among the most common chronic diseases experienced by children. In 2012-2014, 42% of Australian children aged 5-10 years experienced dental decay in their primary teeth, over a quarter of which (27%) was untreated.<sup>4</sup>

OH can be influenced by multiple interacting factors from genetic and biological influences to education, geographic location, income, culture, accessibility and affordability of dental services, diet, oral hygiene practices and behaviours.<sup>5, 6</sup> Population level studies have noted that clinical treatment strategies alone will not halt the initiation and progression of oral disease.<sup>7, 8</sup>

# Taking a health promotion approach to improve OH

In Australia, prevention and health promotion concepts have been included in the Australian Dental Council competencies for dentists, dental hygienists, dental therapists and OH therapists. However, oral health promotion (OHP) by dental professionals continues to be largely siloed and narrowly confined to individualised education in clinical settings. 10, 11

The literature widely encourages the adoption of OHP approaches, guided by the Ottawa Charter for health promotion, <sup>12</sup> to address the broader social determinants and common risk factors for oral and general health. <sup>8, 13-16</sup> The Ottawa Charter recognises inter-sectoral collaboration, partnership and integrated roles as central to disease prevention strategies. <sup>12, 15</sup> Research has shown that health and early childhood practitioners outside the OH profession are well placed to support and integrate OHP messages within diverse practices and settings, such as hospitals, early childhood services and well-child visits. <sup>17-21</sup>

A paradigm shift towards prevention using a multidisciplinary health workforce can reduce the siloing of OH, bringing down the burden of oral disease and addressing the broader determinants impacting OH.<sup>8, 10, 11, 22</sup> In particular, health promotion practitioners, whose profession is guided by the Ottawa Charter principles and the International Union for Health Promotion and Education (IUHPE) global accreditation body,<sup>23</sup> offer the ideal complementary skill set to support OHP within their scope of practice. These include expertise in community engagement, advocacy, inter-sectoral collaboration and partnerships, which are integral for extending individual treatment-focussed approaches to enable collaborative community-based prevention of oral and general disease.<sup>10, 13, 14, 18, 23, 24</sup>

# [Program name]

The [Program] in [the state], Australia is one such example of a community-based child OHP strategy where multidisciplinary professionals collaborate and use their skills to implement the program and embed OHP in early childhood services.

[The Program] ([Website link removed for blinding]) is implemented by [the organisation] the lead public oral health agency in [the state], and was funded by the [Funding Body] in 2003/2004 in response to the identified need for OHP in the early years. Based on the World Health Organisation's Health Promoting Schools Framework, <sup>25</sup> [The program] operates in early childhood services (preschools/kindergartens) state-wide and aims to improve the OH of children and families in communities with high-risk of oral disease.<sup>26</sup> The program is implemented across [the state] by [the organisations] state-wide health promotion team and at local community sites (organisations) by a multidisciplinary workforce of site managers and local coordinators (with varied qualifications such as OH, health promotion, community development, dietetics and speech pathology). The role of the site coordinators includes: identifying early childhood services with the highest OH needs; providing OHP training to the staff; developing and implementing a responsive OHP plan; supporting services to include curriculum activities around three key OH messages ([Removed for blinding]); codesigning or updating healthy eating and OH policies; encouraging and supporting educators in family engagement and provision of HP resources; completing and collating settings evaluation surveys and lunchbox content surveys; and local advocacy and media submissions (Figure 1, Program structure, key roles and activities). The program exemplifies the importance of oral and general health promotion practitioners working together in the prevention of oral disease. Since inception, participation in [The program] has increased annually. In 2019, [The Program] reached >46,200 [of the state's children in 740 early childhood services across 33 program sites in 57 (of a possible [number removed for blinding]) [State] local government areas.

# [Insert - Figure 1. Program structure, key roles and activities]

Internationally there has been some research examining the relevance and application of oral and general health promotion competencies. <sup>18, 24, 27</sup> These studies support the importance of a multidisciplinary unified workforce including a range of health professionals and community members to successfully improve OH. In Australia however, there is limited research examining the workforce competencies needed for effective OHP, beyond clinical settings, and how the competencies differ or align with those for general health promotion.

To address the gaps in the literature, using the example of [The program], this study explored the perspectives of multidisciplinary professionals regarding the competencies required for successful implementation of the community-based OHP program in early childhood settings.

### METHODS

# Ethics approval

Ethics approval was obtained from [Ethics details removed for blinding]. Informed consent was obtained from all participants prior to data collection. This study was part of a larger evaluation project.

# Study design

Given the exploratory nature of the research, a qualitative method was employed to capture the perspectives of the multidisciplinary workforce. Results of the qualitative method were initially analysed to identify competencies and subsequently compared to the globally recognised IUHPE competencies framework.<sup>23</sup>

# **Data collection**

# **Recruitment and participation**

A convenience sample of all past and present [Program name] program managers and local coordinators (n=70) from 32 program sites across [the state] were invited, as well as the available state-wide program coordination team (n=5). All participants were invited via email, letter and phone calls to participate in semi-structured focus groups in 2012. Each focus group included three to six participants and ran for approximately 1-1.5 hours. Participants were asked to complete a brief background information form at the start of each focus group. Given the geographic distribution and part-time nature of the workforce, to maximise participation, focus groups were conducted using a

variety of approaches such as face-to-face, teleconference and a combination of face-to-face and teleconference.

A schedule of approximately 25 broad questions was used to guide general discussion on the experiences of implementing [The program] from the perspectives of program managers, coordinators and the state-wide program coordination team. Focus groups explored: the reasons for organisational involvement in [The program]; other OHP activities they already were implementing; the impacts of their involvement in [The program]; processes and strategies for recruiting early childhood services into [The program]; the approaches used to optimise program implementation (considering the program components, resources and support - both the challenges and successes of these aspects); descriptions of coordinator and manager roles as well as the challenges and enablers to fulfilling these roles within the program; the key skills needed to effectively coordinate and implement [The program]; the characteristics of an OH champion; the capacity of community organisations to promote OH of children; the most significant changes observed in implementing [The program]; considerations for sustainability and the future of the program. This paper reports on three main sub-themes derived from broad participant discussions including: the characteristics of an OH champion; the core competencies (skills, abilities, knowledge and values) required for effective OHP; and strategies for enhancing OHP skills. It was from these sub-themes that a core set of competencies emerged that were then compared with the nine core health promotion competencies identified in the established IUHPE framework.<sup>23</sup>

All focus groups were facilitated independently by the lead researcher [Initials removed for blinding]. Focus groups were conducted until data saturation was observed and when no new themes emerged.<sup>28</sup> A reflective journal was used to detail notes and thoughts throughout the process of data collection and analysis to enhance confirmability.<sup>29</sup> Discussions were digitally recorded, transcribed verbatim, anonymised by a researcher and verified by a second researcher.

## Data analysis

# Qualitative focus groups

Iterative inductive content and thematic analysis was performed concurrently while focus groups were taking place to elucidate emerging codes and themes. The lead researcher listened to the focus group audio and read the transcripts several times to become immersed in the data. Data were initially coded and categorised manually and then refined through a process of re-coding and re-categorising using Nvivo 10 software (QSR International).<sup>30</sup> Triangulation of two experienced qualitative investigators was performed where interpretations were verified and reviewed by the research team to enhance credibility, trustworthiness of interpretations and confirmability.<sup>29</sup>

# Comparative analysis

Comparative analysis was performed by mapping and comparing alignment of the competencies identified by participants during focus groups to the domains in the established IUHPE health promotion competencies framework (https://www.iuhpe.org/images/JC-

Accreditation/System\_handbook\_Full\_LinkA.pdf).<sup>23</sup> The IUHPE Health Promotion Framework was selected, as this was the most widely recognised accepted set of competencies. These formalised global consensus IUHPE competencies for health promotion were officially employed by the Australian Health Promotion Association (AHPA) for the accreditation of Australian Health promotion practitioners in 2017.<sup>31</sup>

# **RESULTS**

# Participant characteristics

Seven focus groups were conducted overall. Six focus groups were held with 26 of the 70 local site managers and coordinators that were invited (37% response rate). Participation included representation from 21 [Program] sites (66% of the 32 program sites invited). One additional focus group was conducted with the state-wide program coordination team (n=5, 100% response rate). Local site managers and coordinators were from a range of professions (e.g. dental, health promotion, dietetics and speech pathology), management levels and organisations, and had varying amounts of health promotion and OH knowledge and experience. Nineteen of the 26 local site managers and coordinators completed the brief background information form including details of their position title or professional background, the approximate number of years they had been working in their position and the approximate number of years their employing organisation had been involved in [The Program]. Of these approximately 53% (n=10/19) of participants had a health promotion background and 21% (n=4/19) were OH professionals. The remaining 26% (n=5/19) had professional backgrounds in dietetics, early childhood, speech pathology and nursing. The number of years participants had been working in their role varied, with the majority working ≤2 years (42.1%) or 3-5 years (42.1%) in their current position and 15.8% ≥6 years. Most participating organisations (58.0%) had been delivering [The Program] for 3-5 years. Table 1 presents the characteristics of focus group participants.

[Insert - Table 1. Table 1: Focus group participant characteristics – [Program] local implementers (n=26) and state-wide coordinators (n=5)]

# **Qualitative focus group findings**

This paper reports on two key themes that arose from participant discussions: 1) OHP competencies; and 2) Strategies for enhancing OHP competencies.

# 1. Health promotion competencies relevant to oral health promotion

A set of core competencies for effective OHP emerged though focus group discussions (with program managers, coordinators and the state-wide program coordination team), particularly in relation to discussions surrounding the key skills needed to effectively coordinate and implement [The program], strategies for enhancing these OHP skills and the characteristics of an OH champion. Competencies substantiated with illustrative quotes are described in Table 2. Pertinent quotes which lead to the core set of competencies are presented (Table 2).

Focus group participants commonly identified [The program] coordinators as OH champions who displayed many of the required health promotion competencies. OH champions were described as individuals who placed a great emphasis on OH, OHP and prevention of oral disease in the local community or organisation. They were recognised as innovative and passionate individuals, 'Advocating all the time for those [oral health] messages to be incorporated', and trying to raise awareness of OH issues broadly in communities, among professionals, settings and families. They were described by participants as 'Someone who believes in the [oral health] messages and promotes them widely'. Furthermore, participants noted that their cooperation and enthusiasm was a major facilitator of effective program implementation, despite constraints of program funding and time.

# Professional training and background relevant to oral health promotion

Managers and coordinators consistently expressed that formal training and understanding of the principles of health promotion and practice were core to the role of the [Program] coordinator to ensure the smooth running and successful implementation of the program.

"A reasonable understanding of health promotion principles is required, because I think it could very easily turn into a health education process [agreement voiced by others in group] without focussing on the capacity building of the setting." (Manager)

"Health promotion skills and experience...I think that's a real must." (Coordinator)

"[The] focus for coordinators [needs to be] around capacity building... so they're building the capacity of the kindergarten taking on and owning the program." (State-wide coordination team member).

Although participants preferred coordinators with a background in health promotion, program implementers were from a variety of professional backgrounds (e.g. dental professionals, dietitians and speech pathologists), with different competencies and skills, some with limited formal health promotion training. Participants noted that each professional brought their own unique perspective to implementation of the OHP program. For example, qualifications such as dietetics or OH were found to provide a complementary knowledge base, skill-set, credibility and perspective.

"Speech pathologists, dietitians, each [profession]... has their strengths and weaknesses in terms of oral health... knowledge... They approach it differently... Dental professional[s]... probably have better links to dental services but maybe not as good at doing some of the policy stuff for example or looking at the whole setting... our health promotion professionals are generally much better at planning than clinical people...." (State-wide coordination team member)

Participants expressed that having some knowledge and understanding of OH would be advantageous and that obtaining OH knowledge, for example, through training or integrated work with dental professionals, was needed.

"I've got a Masters of Public Health... it would be difficult [for those] who don't have any oral health background to implement a program or I guess be passionate about a program about oral health.... [in some [Health promotion Program] sites] the oral health program is completely isolated to your [Health promotion Program] ... I personally don't understand that, because our dental program owns [The Health promotion Program]." (Coordinator)

# 2. Strategies for enhancing oral health promotion competencies

As [The Program] coordinators did not always have health promotion or OH training, participants discussed opportunities to enhance the competencies of these professionals to effectively support OHP activities in early childhood settings. A key strategy identified to enhance OHP capacity (including OH knowledge) was fostering inter-sectoral collaborations both within organisations and externally with other organisations. An example was provided by a participant who identified the importance of organisational collaborations that had been established between the clinical OH and health promotion teams within their health service. Working within a multidisciplinary team, sharing skills and expertise in nutrition, OH or health promotion was highlighted as an ideal foundation to foster this approach and obtain the required knowledge and skills in OH and health promotion. In addition, establishment of networks, working groups and peer support were identified as key strategies to enhance OHP competency.

"It's been fantastic...to build those partnerships and links with the health promotion team...It has been really good for the capacity building of my dental team and it makes their work a bit more diverse, because they've been able to go out and do these things and learn additional skills." (Manager)

"I think it works better when there are good partnerships between health promotion and dental....support from the organisation, [and when you] have a good working group." (State-wide coordination team member)

"I agree with the partnerships. I think it's surprising how I had no background, because I'm a speech pathologist. I had some understanding obviously of early childhood...I had relationships with the centres and I'd done a short course in health promotion... I had no background in oral health and I certainly haven't had any...training...I feel like I've been quite competent in the amount of information that I've been able to share with centres so I don't think you necessarily need... to have an oral health background." (Coordinator)

# Comparative analysis

The OHP competencies identified through focus groups with [The Program] coordinators, managers and state-wide team described key knowledge, skills, abilities and values that broadly align with the fundamental IUHPE domains for general health promotion (Table 2). For instance, this included having a foundation in ethical values such as equity, exemplified by participants implementing [The Program] in early childhood services within communities identified as having high-risk of oral disease (see Table 2, IUHPE competency Underpinning: Ethical values and health promotion knowledge base). Applying the principles of health promotion was also identified as a critical competency, for example, ensuring [The Program] followed a capacity building approach. For example, participants recognised the importance of empowering and building the capacity of kindergarten staff to ensure that the key OH messages were soundly embedded into the culture of the service before coordinators could reduce their presence and the program could function independently (see Table 2, IUHPE competency domain 1: Enable change). Partnerships were also a key element of [The Program], being able to establish strong collaborative relationships across community, OH and early childhood sectors (see Table 2, IUHPE competency domain 3: Mediate through partnership). Similarly mediating through partnerships was a domain reflected in the IUHPE competencies for effective general health promotion. Other competencies included: enabling change, advocating for health, communication, leadership, assessment, planning, implementation, evaluation and research.

The full list of summarised participant-identified competencies together with substantiating illustrative quotes are aligned with the nine IUHPE competencies, presented in Table 2.

# [Insert - Table 2. Alignment of participant-identified competency domains for community-based child oral health promotion in [the state] with the IUHPE framework]

# **DISCUSSION**

[The Program] is a long standing OHP program designed to be multi-levelled, settings based and community-based. The competencies needed for effective implementation of [The Program] were identified through focus groups with local program managers/coordinators and the state-wide program coordination team, listed in Table 2. These competencies covered a range of skills and expertise that are transferrable to other health promotion areas and accord with the internationally accepted IUHPE competencies for health promotion. These competencies were identified by the participants as ideal for successful OHP. While not all professionals working with [The Program] held the full range of competencies, participants emphasised that OHP knowledge and expertise could be obtained through training and inter-sectoral collaboration between OH and multidisciplinary professionals.

# Oral health promotion competencies align with general health promotion competencies

The core competencies identified in the current study for OHP were consistent with key domains identified by international frameworks for both oral 18,24 and general health promotion. 23 For example, they concur with the attributes described in prior research among diverse professionals developed by Benzian, Greenspan (18) which comprise: knowledge (OH, oral disease, risk factors and determinants); skills and abilities (disease prevention and health promotion, disease management, advocacy, research monitoring and evaluation); and supporting competencies and principles (interprofessional, inter-sectoral competencies, cultural and social competencies and professional ethics). These findings further support the role of multidisciplinary professionals, including health promotion practitioners, in OHP, particularly in light of the common risk factors and shared skills required for promoting oral and general health. 18, 24, 32-34 The complexity and challenging nature of the role of the health promotion practitioner is often under-recognised, for example, working with communities experiencing high-level disadvantage, co-morbidities or from culturally and linguistically diverse backgrounds. Health promotion research has identified that having a set of agreed competencies can support the establishment of a competent, skilled, formal and well-developed workforce capable of effectively addressing and sharing responsibility for the prevention of disease.<sup>23</sup> Formal competencies have been deemed useful for defining health promotion practice; substantiating arguments for the relevance of health promotion as a profession; clarifying job roles; managing performance; providing a framework for developing health promotion capacity; guiding tertiary courses; informing job descriptions; and credentialing.35,36

The literature also promotes the integration of OHP principles into OH professional education (e.g. curriculum in OH degrees) and day-to-day professional practices. <sup>18, 24, 37</sup> Research by Watt, Williams (8) suggests practical ways in which the dental team can take action on the social determinants of health and promote OH within their scope of practice. Examples include: workforce education and training; understanding the needs of the population; taking a focus on the early years; address accessibility and affordability of dental services; supporting and employing local dental professionals; advocating for action on the social determinants; taking an evidence-based team approach; forming local partnerships; and linking with other services. In light of our study findings, further exploration of the application of health promotion competencies in the context of the prevention of oral disease is warranted.

# Strategies for enhancing oral health promotion competencies

This study has found that OHP skills and OH knowledge can be developed through education and training, and supported and enhanced through collaborative inter-sectoral partnerships. Professionals engaging in OHP activities in this study came from varied professional backgrounds. There is a growing body of literature that supports the integrated roles of dental and non-dental professionals in OHP. 10, 18, 24 Participants in this study were experienced in OHP with 57.9% reporting more than 3 years of experience in their role. They felt professionals with an interest in prevention, and passion for OHP, or working in a health or related field (such as dietetics, maternal and child health) possessed unique and complementary skills which add value to OHP and program implementation. 17-21 As such multidisciplinary health promotion and non-dental professionals are well placed to undertake OHP as they hold much of the required knowledge and skills which can be complemented through training in OHP and collaborations with dental professionals.<sup>18</sup> In [the state], efforts continue to be made to increase the capacity of a range of health and early childhood professionals to promote OH through government funded policy and programs such as [The Program] and [A second program], another state-wide health promotion program.<sup>26</sup> These programs provide professional development and strategies to build and support the capacity of a range of professionals to incorporate OHP into their practice. The impact of these programs is promising and further supports the role of non-dental professionals in provision of OH information, risk assessment and referral to dental services.<sup>20, 21</sup>

It is clear that dental professionals, with their OH expertise, have a critical role as core participants and leaders in OHP. Participant responses reflected the responsibility of the dental team to become further involved in supporting prevention and health promotion, addressing the broader social-determinants of OH, beyond the traditional individual, chairside clinical education and behaviour change. <sup>8, 10</sup> The importance of dental professionals in OHP has already been identified in other parts of Australia. For example, the [another state] Dental Service developed the Australian Health

Promotion Practice Guidelines which encourage OH and public health professionals to engage with, and build skills and expertise in OHP.<sup>38</sup> Based on our findings, we recommend embedding the principles of health promotion and public health approaches more strongly and practically into the training, competencies and practices of all dental professionals.

In this study, those implementing a community-based OHP program identified the importance of inter-sectoral collaborations, working in multidisciplinary teams, and strong networks and partnerships for developing and increasing the OH and health promotion competencies of professionals responsible for OHP. These factors will assist to reduce the tendency for siloing OH and can further enhance organisational capacity, continuity and sustainability for oral and general health promotion, which in turn will promote widespread, long term outcomes and OH improvements. 10, 18, 39, 40 Inter-professional collaboration is considered vital to the success of community-based OHP. 15, 18, 41 Many clinicians do not have the time and scope to deliver extensive OHP at the chairside. A more integrated approach to health promotion and healthcare could be achieved by implementing programs and policies which encourage and facilitate opportunities for health promotion and OH practitioners to collaborate with organisations such as community health services.

# **Strengths and limitations**

This study provides a unique, in-depth insight into the experiences of a cohort of multidisciplinary professionals implementing a state-wide community-based OHP program in [the state], Australia.

Whilst the main purpose of the focus groups were to elicit experiences and details of the implementation of [The Program], insights from the participants provided us with an in-depth understanding of the key skills, abilities, knowledge and values required for successful implementation of child OHP programs. A strength of this study was that through these insights a set of key OHP competencies emerged, which provided added value to the study. We were unable to explore and delve deeper to elaborate on the details of competencies that participants identified, however future studies have the opportunity to explore this further. Though this study provides rich qualitative insights, the findings come from one specific OHP program and may not be generalisable to other OHP programs. Future studies need to be specifically designed with these limitations in mind to further elaborate on, confirm and strengthen the evidence for the breadth of key OHP competencies. This should be explored from the perspectives of a wide range of multidisciplinary professionals working on different OHP strategies and activities in Australia and internationally.

# **CONCLUSION**

There is a need to shift beyond solely treatment-focused activities to adopting community-based OHP and preventive approaches to address oral diseases. Oral and general health promotion professionals play critical complementary roles widening the avenues for OHP and the prevention of oral diseases.

Multidisciplinary, integrated and collaborative workforce models can more effectively contribute to efforts to tackle the burden of oral and general diseases. Further studies are needed to confirm the competencies in this study with respect to their appropriateness and completeness.

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[Removed for blinding]

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# List of figure and table captions (Full figures and tables are attached in separate files)

Figure 1: Program structure, key roles and activities

Table 1: Focus group participant characteristics – [Program name] local implementers (n=26) and state-wide coordinators (n=5)

Table 2: Alignment of participant-identified competency domains for community-based child oral health promotion in [The state] with the IUHPE framework

# TABLE 1

Table 1. Focus group participant characteristics – [Program name] local implementers (n=26) and state-wide coordinators (n=5)

Characteristics	n (%)
Local managers and coordinators	n=26
Organisational Role	n=26
Manager	11 (42.3)
Coordinator	13 (50.0)
Manager and Coordinator	2 (7.7)
Area	n=26
Metropolitan	13 (50.0)
Regional/Rural	13 (50.0)
Program Status	n=26
Current	23 (88.5)
Past	3 (11.5)
Approximate number of years	<i>n</i> =19 <sup>b</sup>
participating organisation involved in	
[Program name]	4 (21.0)
<u>≤2</u> 3-5	4 (21.0)
6-7	11 (58.0)
	4 (21.0) n=19 <sup>b</sup>
Participant identified position title/ professional background	n-19°
Health promotion professional	10 (52.6)
Oral health professional	4 (21.1)
Other <sup>a</sup>	5 (26.3)
Approximate number of years	<i>n</i> =19 <sup>b</sup>
participants worked in their respective	
positions <sup>c</sup>	0 (42.1)
<u>≤2</u> 3-5	8 (42.1) 8 (42.1)
≥6	3 (15.8)
State-wide coordination team	n=5
Organisational Role	n=5
Manager	2 (40.0)
Coordinator	3 (60.0)
Program Participation Status	n=5
Current	4 (80.0)
Past	1 (20.0)
Professional background	
Oral health	1 (20.0)
Non-oral health	4 (80.0)

<sup>&</sup>lt;sup>a</sup>Dietitian (n=2), Early childhood professional (n=1), Speech Pathologist (n=1), Nurse (n=1) <sup>b</sup>Data was missing for n=7 participants.

cParticipants reported the number of years employed in their current position. In some cases this may not equal to the number of years participants were involved in [Program name] as part of their role.

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# TABLES 2

Table 2. Alignment of participant-identified competency domains for community-based child oral health promotion in [The state] with the IUHPE framework

IUHPE competency	domains <sup>a</sup>	Oral health promotion competencies identified by [The program] coordinators/managers	Illustrative participant quotes	
Underpinning: Ethical values and health promotion knowledge base	Ethical values and principles for Health Promotion include a belief in equity and social justice, respect for the autonomy and choice of both individuals and groups, and collaborative and consultative ways	Ethical values e.g. taking an equitable focus to reach high risk communities Knowledge and understanding e.g. health promotion principles, oral health, nutrition and early childhood sector	"[Our community] has one of the highest caries [tooth decay] rates in Victoria so I just targeted all of them [the local kindergartens]." (Coordinator) (Quote aligns with IUHPE competency domain 6: Assessment)  "Engagement of CALD [culturally and linguistically diverse] communities is something that would need to be strengthened particularly around poor oral health outcomes further work needs to be going into engagement of other communities." (State-wide coordination team member) (Quote aligns with IUHPE competency domain 8: Implementation)  "A reasonable understanding of health promotion principles is required, because I think it could very easily turn into a health education process [agreement voiced by others in group] without focussing on the capacity building of the setting." (Manager)(Quote aligns with IUHPE competency domain 1: Enable change)  "You have to have a strong understanding of the early childhood sector." (Coordinator) (Quote aligns with IUHPE	
1. Enable change	of working  Enable individuals, groups, communities and organisations to build capacity for health promoting action to improve health and reduce health inequities	Building capacity for health promotion  • work collaboratively and provide support to build sustainable oral health promotion capacity of local coordinators, early childhood staff and settings	"It's about making the focus for coordinators around capacity building so they're building the capacity of the kindergarten taking on and owning the program." (State-wide coordination team member)  "They've [program coordinators] got to be able to think with a sustainability lens because we have some coordinators who are fabulous but they just do it all and so as soon as they leave or something changes the whole program falls down." (State-wide coordination team member)  "In terms of it [The program] being sustainable, [it's about] that idea of empowering people within settings to take ownership, which I know is easier said than done in an environment with so many competing priorities [agreement voiced by others in group]." (Manager) (Quote aligns with IUHPE competency domain 3: Mediate through partnership)	
2. Advocate for health	Advocate with, and on behalf of individuals, communities and organisations to improve health and well-being	Advocacy  • advocate to embed oral health messages within early childhood settings and the broader community	(Quotes align with IUHPE competencies 2: Advocate for health and 8: Implementation)  "Someone that'sadvocating all the time for those [oral health] messages to be incorporated [into practice] [Who is] out there spreading the word Someone who believes in the messages and promotes them widely." (State-wide coordination team member)  "I think once you've developed the relationships [with the preschool staff] and once you've built the capacity within the preschools I think that's [when] you sort of say my job is 80% done [That's when] preschool teachers are doing all the parent engagement and teaching the children for you." (Coordinator) (Quote aligns with IUHPE competency domain 1:	

and build capacity for Health Promotion action

## 3. Mediate through partnership

Work collaboratively across disciplines. sectors and partners to enhance the impact and sustainability of Health Promotion action

Relationship building

- build strong relationships and strategic partnerships with internal and external stakeholders at different levels in community, oral health, early childhood and related sectors
- identify, recruit, collaborate with and support local partners
- · take a sustainability and capacity building approach

Enable change)

"If you really want to make an impact on children's lives then you have to get better at engaging the parents and, to get that strategy up and running you do need some local action..." (Manager)

"[In our organisation/health service, involvement in [The Program]] sort of put oral health on the map a bit more with our health promotion team, and we've been able to get oral health on the health promotion plan, and so it's just made people much more aware of how we're all linked together." (Manager)

"[Program coordinators] need to have obviously good relationship building skills being able to engage early childhood services... [agreement voiced by others in group]...communication [skills]... planning [skills]". (State-wide coordination team member)

"I think it [The program] works better when there are good partnerships between health promotion and dental [services teams], good partnerships and support from the organisation, [and when you] have a good working group. I don't know if I can generalise and say it works better with health professional-health promotion people... But then we have some really good dental people that do it really well but I think it's because they've got good support from their health promotion teams." (State-wide coordination team member)

"[An oral health champion is] someone who has lots of links... When... [the program sits in a] PCP [Primary Care Partnership], for example, they have lots of working groups that they are part of so they bring their oral health lens to a lot of the work that they are doing... If they have those links already or they can establish those kind of relationships then that actually helps to get the messages out there." (State-wide coordination team member) (Ouote aligns with IUHPE competency domain 2: Advocate for health)

"It's been very much about engaging with the local community and different early childhood centres, that we weren't engaging before, which has then allowed us to almost use [The Program] as a platform to bring in other nutrition policies and look at some of the... access to food work that we've been doing [agreement voiced by others in group]." (Manager) "Being passionate... having those good communication skills [agreement voiced by others in group]." (State-wide coordination team member)

"In terms of engaging with preschools and working well with them, coming in with sort of a strength based approach as well, saying 'I'm sure you already do a lot promoting healthy eating and healthy habits in children, so this program will give you recognition of what you're doing. Give you extra resources... [and] new ideas to do it even better'. So coming in, in a positive way, 'You know you're halfway there already... let's get a bit further together'." (Coordinator)

"[My role has] broadened my understanding of social determinants and public health and you know that much more broad approach to looking at children's development... for me it's mostly been about communication obviously and you know literacy and so forth. So that's been really useful for me." (Coordinator)

"But where it's been most successful is if we've had someone [coordinating the program] with some background be it in health promotion or nutrition who can answer questions but there actually more confident in doing that, so therefore the engagement with the kinders is more likely, I think they are more likely to be successful because that person's got credibility" (Manager) (Quote aligns with IUHPE competency Underpinning: Ethical values and health promotion

# 4. Communication

Communicate Communication and Health Promotion actions effectively using appropriate techniques and

technologies for

diverse audiences

- engagement effective clear
- communication in engaging diverse stakeholder in a sensitive and appropriate manner
- build the capacity of early childhood professionals to communicate in socially and culturally appropriately ways with children and families about oral health
- · communicating oral

+		health messages appropriately, simply and effectively	"To get the non-dental people on board we gave them statistics of the children that are affected by dental decay.  Because you need something to get them on board to understand it and to be passionate as you wanted them to be about it." (Coordinator)
5. Leadership	Contribute to the development of a shared vision and strategic direction for Health Promotion action	Leadership  work together with early childhood professionals to develop and action plan to promote oral health in their services  support local opportunities for collaborative partnerships between early childhood services, communities and organisations	"I think you also need some skill around joining this to the bigger picture stuff as well. So instead of coming in and asking them to do a program [explain] that there's a bigger picture These are your families who are going on into primary school this is a community wide issue, there's a waiting list [for dental services], so [providing the kindergarten with] reasons, rather than just say this is the program you've got to just implement it." (Coordinator) (Quote aligns with IUHPE competency domain 6: Assessment)  "I think they [program coordinators/managers] have to want to work with other people and have to be strategic because in order to make it work across a particular area they've got to engage with people at all different levels and they need to be able to think about the bigger picture and the strategic aspects of what they're doing." (State-wide coordination team member) (Quote aligns with IUHPE competency domain 3: Mediate through partnership)  "Because I have a bit of a passion for oral health in young people [I'm] constantly looking at the bigger picture stuff, so we're working quite closely with the [local council] oral health plan and trying to push oral health through the PCPs [Primary Care Partnership]. So I also think that when you get an opportunity to tie it in, you just, you jump on to it to tie it in with the bigger picture stuff [agreement voiced by others in group]." (Manager) (Quote aligns with IUHPE
6. Assessment	Conduct assessment of needs and assets, in partnership with stakeholders, in the context of the political, economic, social, cultural, environmental, behavioural and biological determinants that promote or comprise health	Needs assessment  • together with stakeholders conduct assessment of local oral health needs within the community context  • identify, target and include sites based upon rates of oral disease, level of disadvantage and other risk factors in the local community  • knowledge of local oral health needs and understanding of the community you are working with	"We have these pockets of disadvantage So we've really had to target it [The program] down to where a previous neighbourhood renewal site was, around some of the public housing estatesWe still [see] those issues around those families that are most vulnerable [they] still have difficulty accessing the [dental] service." (Manager)  "I had read about [poor] oral health and how it was more related to low SES [socio-economic status] I contacted the preschool field officer and KGFYL [Kids Go for Your Life] officer and I asked which preschools would they think were in the most disadvantaged areas [to determine where to implement the program]." (Coordinator)  "When you get your decayed missing and filled teeth report quarterly, it's very easy to see where your need is. And more than one in two of our pre-schoolers have decay experience." (Manager)  (Quotes align with IUHPE competency Underpinning: Ethical values and health promotion knowledge base)
7. Planning	Develop measurable Health Promotion goals and objectives based	Planning and organisation • develop and implement comprehensive intervention and achievable action plan	"Good project management skills in terms of being able to monitor [The program] because it is so isolating often, monitoring your own timelines and your progress and being mindful of your reporting requirements in advance and I guess just having a really solid project management edge is useful. [agreement voiced by others in group]." (Manager)  "Yeah exactly, planning [is important], our health promotion professionals are generally much better at planning than

	on assessment of needs and assets in partnership with stakeholders	together with early childhood services  • develop or identify appropriate resources	clinical people." (State-wide coordination team member)
8. Implementation Implement effective and efficient, culturally sensitive, and ethical Health Promotion action	<ul> <li>Implementation</li> <li>coordinate and support implementation of culturally appropriate training and activities</li> <li>apply flexibility, capacity building and</li> </ul>	"Between the group of us working together I've got the project skills and people implementing it [The program] have got more the oral health skills, between us all we can pull something together." (Coordinator)  "Being flexible too [agreement voiced by others in group] Trying to get [hold of] a preschool and it might not happen on that day so you have to be able to be flexible, [agreement voiced by others in group], with other days or after hours or swapping times." (Manager)	
INUS(	in partnership with stakeholders	sustainability focus     exercise time efficiency and innovation in implementation	"High organisational skillsit's a basic skill that you expect in a worker. But, I think with [The Program] you need to be just that little bit more organisedreally keep track of where everyone's atSo a lot of organisation, and time management, and it is hard when a worker might only have a day a week, and that day's a Tuesday, and maybe the service isn't open on a Tuesday. So there's just a lot of planning to do to roll it out." (Coordinator)  "[We need to think about] adapting the program to meet those needs of [for example] Aboriginal and Torres Strait Islander communities, I'm not sure how well they identify with the program [agreement voiced by others in group]." (State-wide coordination team member) (Quote aligns with IUHPE competency Underpinning: Ethical values and health promotion knowledge base)
9. Evaluation and research	Use appropriate evaluation and research methods, in partnership with stakeholders, to determine the reach, impact and effectiveness of Health Promotion action	Monitoring and evaluation  understanding of the impact of the strategy  administer appropriate surveys to assess reach and impact of the program	"I definitely think health promotion skills and experience, or maybe not experience but the skills, knowledge particularly around evaluation, so knowing why you're doing things and what impact it has on your kindergarten. I think that's a real must but I'm thinking the most of the coordinators have got some level of that or it sits somewhere in the health promotion. I'd think they have some support around." (Coordinator)

<sup>a</sup>Competencies have been adapted from IUHPE core competencies and professional standards for health promotion (https://www.iuhpe.org/images/JC-Accreditation/System\_handbook\_Full\_LinkA.pdf).<sup>23</sup>
Definition of terms: IUHPE, International Union for Health Promotion and Education; [Program name]

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6. Assessment	Conduct assessment of needs and assets, in partnership with stakeholders, in the context of the political, economic, social, cultural, environmental, behavioural and biological determinants that promote or comprise health	Needs assessment  together with stakeholders conduct assessment of local oral health needs within the community context  identify, target and include sites based upon rates of oral disease, level of disadvantage and other risk factors in the local community  knowledge of local oral health needs and understanding of the community you are working with	"We have these pockets of disadvantage So we've really had to target it [The program] down to where a previous neighbourhood renewal site was, around some of the public housing estates We still [see] those issues around those families that are most vulnerable [they] still have difficulty accessing the [dental] service." (Manager)  "I had read about [poor] oral health and how it was more related to low SES [socio-economic status] I contacted the preschool field officer and KGFYL [Kids Go for Your Life] officer and I asked which preschools would they think were in the most disadvantaged areas [to determine where to implement the program]." (Coordinator)  "When you get your decayed missing and filled teeth report quarterly, it's very easy to see where your need is. And more than one in two of our pre-schoolers have decay experience." (Manager)  (Quotes align with IUHPE competency Underpinning: Ethical values and health promotion knowledge base)
7. Planning	Develop measurable Health Promotion goals and objectives based	<ul> <li>Planning and organisation</li> <li>develop and implement comprehensive intervention and achievable action plan</li> </ul>	"Good project management skills in terms of being able to monitor [The program] because it is so isolating often, monitoring your own timelines and your progress and being mindful of your reporting requirements in advance and I guess just having a really solid project management edge is useful. [agreement voiced by others in group]." (Manager)  "Yeah exactly, planning [is important], our health promotion professionals are generally much better at planning than

	on assessment of needs and assets in partnership with stakeholders	together with early childhood services  • develop or identify appropriate resources	clinical people." (State-wide coordination team member)
8. Implementation	Implement effective and efficient, culturally	<ul> <li>Implementation</li> <li>coordinate and support implementation of culturally appropriate</li> </ul>	"Between the group of us working together I've got the project skills and people implementing it [The program] have got more the oral health skills, between us all we can pull something together." (Coordinator)  "Being flexible too [agreement voiced by others in group] Trying to get [hold of] a preschool and it might not happen
5	sensitive, and ethical Health Promotion action in partnership	<ul><li>training and activities</li><li>apply flexibility, capacity building and</li></ul>	on that day so you have to be able to be flexible, [agreement voiced by others in group], with other days or after hours or swapping times." (Manager)
2	with stakeholders	<ul><li>sustainability focus</li><li>exercise time efficiency and innovation in implementation</li></ul>	"High organisational skillsit's a basic skill that you expect in a worker. But, I think with [The Program] you need to be just that little bit more organisedreally keep track of where everyone's atSo a lot of organisation, and time management, and it is hard when a worker might only have a day a week, and that day's a Tuesday, and maybe the service isn't open on a Tuesday. So there's just a lot of planning to do to roll it out." (Coordinator)
			"[We need to think about] adapting the program to meet those needs of [for example] Aboriginal and Torres Strait Islander communities, I'm not sure how well they identify with the program [agreement voiced by others in group]." (State-wide coordination team member) (Quote aligns with IUHPE competency Underpinning: Ethical values and health promotion knowledge base)
9. Evaluation and research	Use appropriate evaluation and research methods, in partnership with stakeholders, to determine the reach, impact and	<ul> <li>Monitoring and evaluation</li> <li>understanding of the impact of the strategy</li> <li>administer appropriate surveys to assess reach and impact of the program</li> </ul>	"I definitely think health promotion skills and experience, or maybe not experience but the skills, knowledge particularly around evaluation, so knowing why you're doing things and what impact it has on your kindergarten. I think that's a real must but I'm thinking the most of the coordinators have got some level of that or it sits somewhere in the health promotion. I'd think they have some support around." (Coordinator)
	effectiveness of Health Promotion action		

<sup>a</sup>Competencies have been adapted from IUHPE core competencies and professional standards for health promotion (https://www.iuhpe.org/images/JC-Accreditation/System\_handbook\_Full\_LinkA.pdf).<sup>23</sup>
Definition of terms: IUHPE, International Union for Health Promotion and Education; [Program name]

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