Implementation of the Health Promoting Schools Framework – A policy analysis in Victoria, Australia

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Abstract

Introduction School based obesity prevention initiatives underpinned by the World Health Organisation Health Promoting Schools framework have been shown to have positive impacts upon adolescent health behaviours and outcomes. Yet little is known of why this framework is not uniformly implemented. This PhD explored implementation of the Health Promoting Schools framework in secondary schools.

Methods Underpinned by social constructionism, this research included a systematic literature review and three studies informed by Yanow's interpretive policy analysis approach. The systematic literature review identified the impacts of multi-strategy school based interventions encompassing nutrition education on adolescent health and nutrition outcomes. In Study One documentary analysis of six government curriculum and school health and wellbeing policies was undertaken to explore support for implementation of the Health Promoting Schools framework in Victorian secondary schools as the Achievement Program policy. In Study Two 11 semi-structured interviews were conducted with policymakers representing government and non-government agencies to elicit considerations and perspectives of policymakers in designing the Achievement Program policy, based upon the HPS framework, for implementation in secondary schools, using thematic analysis. In Study Three a pilot case study was conducted in a regional Victorian secondary school to explore why and how the Achievement Program policy was being implemented and factors contributing to school success, using framework analysis.

Results The systematic literature review revealed multi-strategy school based interventions can have significant impacts upon anthropometric and dietary intake measures in adolescents. Intervention components contributing to success were identified as parental involvement, delivery of nutrition education by teachers and staff, changes in school canteens and vending machines and using theory to guide intervention development. Study One revealed policies currently provide little guidance or support for Victorian secondary schools in implementing the Health Promoting Schools framework. References to the constructs of the Health Promoting Schools framework were implicit and more likely to be identified by practitioners with extensive experience and knowledge of health promotion. In Study Two the findings suggested that policymakers believed their approach to policy development would improve adoption and adhesion to the Achievement Program policy in Victorian secondary schools through consideration of strategic collaborations and good governance, including stakeholders in

positions of power, and incorporating evidence based best practice and real-time feedback. Study Three attributed one secondary school's successful recognition as a Health Promoting School to alignment of the Achievement Program policy with existing school curriculum requirements and health and wellbeing focus, policy flexibility and timely introduction to the school. The ability to select easier health priority areas and draw upon a skilled local liaison, as well as access to school financial resources and a passionate and dedicated team to drive implementation were also highlighted as contributing factors.

Implications and Conclusion This study has identified policy and policymaker support for the Health Promoting Schools framework in Victorian secondary schools, and the findings offer insights into policy translation by policy implementers in secondary schools. Whilst impacts of the Achievement Program policy were not explored with ongoing government support the Achievement Program policy may contribute to reducing overweight and obesity in Victorian adolescents. Future research should aim to explore ongoing policy implementation and resourcing needs in secondary schools to identify what they need to achieve optimal health outcomes and academic achievement for adolescents.

Publications during enrolment

Publications arising from thesis work

Meiklejohn S, Ryan L, Palermo C. A Systematic Review of the Impact of Multi-Strategy Nutrition Education Programs on Health and Nutrition of Adolescents. *Journal of Nutrition Education and Behavior*. 2016;48: 631-646. doi: 10.1016/j.jneb.2016.07.015.

Conference and invited presentations arising from thesis work

2016

Meiklejohn S, Peeters A, Ryan L & Palermo C. Adolescents, Achievement Programs and an ambitious curriculum. Monash University School of Clinical Sciences 3MT Symposium. Melbourne, Australia. August, 2016 (Oral presentation)

Meiklejohn S, Peeters A, Ryan L & Palermo C. Adolescents, Achievement Programs and an ambitious curriculum – a policy document analysis. Monash University School of Clinical Sciences PhD Symposium. Melbourne, Australia. November, 2016 (Oral presentation)

2017

Meiklejohn S, Peeters A, Ryan L & Palermo C. Adolescents, Achievement Programs and an ambitious curriculum. 34th Dietitians Association of Australia National Conference. Launceston, Australia. May, 2017 (Oral presentation)

2018

Meiklejohn S, Peeters A, Palermo C. Implementation of the Achievement Program Policy in Victorian secondary schools - A Study Protocol. Cancer Council Victoria Evaluation and Research Advisory Group Meeting. Melbourne, Australia. June 2018 (Oral presentation)

Meiklejohn S, Peeters A, Ryan L & Palermo C. Policymakers' perspectives on designing secondary school-based health and wellbeing initiatives. Emerging Health Policy Research Conference. Sydney, Australia. July, 2018 (Oral presentation)

Meiklejohn S, Peeters A, Ryan L & Palermo C. Policymakers' perspectives on designing secondary school-based health and wellbeing and nutrition initiatives. Public Health Association of Australia (PHAA) Food Futures Conference. Brisbane, Australia. November, 2018 (Oral presentation)

Meiklejohn S, Ryan L & Palermo C. Impact of multi-strategy nutrition education programs on adolescents' health and nutrition – a systematic review. Monash Health Translational Precinct Research Symposium. Melbourne, Australia. November, 2018 (Poster presentation)

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2019

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Published conference proceedings from thesis work

Meiklejohn S, Peeters A, Ryan L & Palermo C. Adolescents, Achievement Programs and an ambitious curriculum. *Nutrition & Dietetics.* 2017; 74 (Suppl 1): 13.

Other publications and conference presentations arising during candidature

Browne J*, Coffey B*, Cook K, **Meiklejohn S**, Palermo C. A guide to policy analysis as a research method. *Health Promotion International*. 2018. doi: 10.1093/heapro/day052.

Gibson S, Porter J, Anderson A, Bryce A, Dart J, Kellow N, **Meiklejohn S**, Volders E, Young A, Palermo C. Clinical educators' skills and qualities in allied health: a systematic review. *Medical Education*. 2018. doi: 10.1111/medu.13782.

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Meiklejohn S, Dart J, Gibson S, Courtney J & Palermo C. Developing a systems-based approach to competency-based assessment. 33rd Dietitians Association of Australia National Conference. Melbourne, Australia. May 2016 (Oral presentation)

Meiklejohn S, Barbour L and Palermo C. FoodMate by SecondBite: Creating food independence through an eight-week nutrition education intervention. 31st Dietitians Association of Australia National Conference. Brisbane, Australia. May 2014 (Poster presentation)

Thesis including published works declaration

I hereby declare that this thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

This thesis includes one original papers published in peer reviewed journals and two submitted publications. The core theme of the thesis is implementation of the World Health Organisation (WHO) Health Promoting Schools (HPS) Framework. The ideas, development and writing up of all the papers in the thesis were the principal responsibility of myself, the student, working within the *Department of Nutrition, Dietetics and Food* under the supervision of *Associate Professor Claire Palermo, Professor Anna Peeters and Dr Lisa Ryan*.

(The inclusion of co-authors reflects the fact that the work came from active collaboration between researchers and acknowledges input into team-based research).

In the case of Chapters Three, Five and Six my contribution to the work involved the following:

Thesis Chapter	Publication Title	Status	Nature and % of student contribution	Co-author name(s) Nature and % of Co-author's contribution*	Co-author(s), Monash student Y/N*
3	A Systematic Review of the Impact of Multi-Strategy Nutrition Education Programs on Health and Nutrition of Adolescents	Published in Journal of Nutrition Education and Behavior	Led conception and design of the study, conducted literature searches, conducted majority of data extraction and analysis, drafted and prepared manuscript (80%)	Lisa Ryan – conceptualised the study, assisted data extraction and analysis, assisted drafting of manuscript (10%) Claire Palermo – conceptualised the study, assisted data extraction and analysis, assisted drafting of manuscript (10%)	No
5	An interpretive policy analysis of Australian government health and education policy	Submitted to Journal of School Health	Led study conception and design, conducted data collection and analysis, drafted and prepared manuscript (80%)	Anna Peeters – assisted drafting of manuscript (5%) Lisa Ryan – conceptualised the study, assisted drafting of manuscript (5%) Claire Palermo – conceptualised the study, assisted data analysis, assisted drafting of manuscript (10%)	No
6	Policymakers' perspectives on designing school-based health initiatives for Victorian adolescents	Submitted to Health Promotion International	Led study conception and design, sought ethics approval, conducted data collection and analysis, drafted and prepared manuscript (80%)	Tammie Choi – assisted data analysis (2.5%) Anna Peeters – assisting drafting of manuscript (2.5%) Lisa Ryan – conceptualised the study, assisted drafting of manuscript (5%) Claire Palermo – conceptualised the study, assisted data analysis, assisted drafting of manuscript (10%)	No

I have renumbered sections of submitted or published papers in order to generate a consistent presentation within the thesis.

Student signature: **Date:** 18th April 2019

The undersigned hereby certify that the above declaration correctly reflects the nature and extent of the student's and co-authors' contributions to this work. In instances where I am not the responsible author I have consulted with the responsible author to agree on the respective contributions of the authors.

Main Supervisor signature: **Date:** 18th April 2019

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Upon commencement of my PhD I read a lot about how to 'survive' my PhD. It was forecast to be 'a test of mental endurance not intelligence' so much like my peers before me I drew upon the wisdom and support of what now feels like an army of people to help me.

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Abbreviations

ACARA	Australian Curriculum, Assessment and Reporting Authority
BMI	Body mass index
DEECD	Department of Education and Early Childhood Development
DET	Department of Education and Training
DHHS	Department of Health and Human Services
HEOH	Healthy eating and oral health
HPA	Health priority area
HPS	Health Promoting Schools
HPSE	Health Promoting Schools Ethos
HWB	Health and wellbeing
IUHPE	International Union for Health Promotion and Education
KGFYL	Kids Go For Your Life
NHPSI	National Health Promoting Schools Initiative
VCAA	Victorian Curriculum and Assessment Authority
WHO	World Health Organisation

Researchers mentioned in this thesis

SM	Sarah Meiklejohn
CP	Claire Palermo
AP	Anna Peeters
LR	Lisa Ryan
TC	Tammie Choi

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Foreword

Who am I? Introducing the researcher and reflexive quilting

A personal experience of implementing school based health and wellbeing initiatives

School based health and wellbeing interventions are a particular passion of mine. From as early as primary school I can recall being involved in the planning and implementation of activities to improve the health of my peers through the student representative council. This included organising lunchtime physical activity opportunities and reviews of canteen menus for specialised events, as well as organising mindfulness sessions in class. This passion only grew in secondary school where I immersed myself in similar volunteer roles. What struck me most at this time was how often my learning in the classroom and observations of my school environment were contradictory. For example, vending machines and the school canteen were dispensing sugar laden soft drinks and energy drinks, despite repeated warnings of the dangers associated with high and regular consumption in health and home economics classes. The importance of physical activity for mental and physical health, as well as academic achievement, was highly valued by teachers particularly as we progressed towards completion of Year 11 and 12. Yet opportunities within the curriculum and during break times to engage in meaningful physical activity or exercise gradually declined over my six years of secondary schooling.

By the time I started my nutrition and dietetics undergraduate degree I was driven to pursue a career in community and public health nutrition roles. I wanted to immerse myself in the real world applications of nutrition prevention where schools were of particular interest. I quickly learnt through my role as student representative on the Nutrition Australia – Victorian Committee of Management that schools were a complex place when it came to implementing health and wellbeing interventions. Even with a substantial evidence base, schools were challenged to accept and implement assistance provided by services such as Nutrition Australia

to improve student health and wellbeing through whole of school approaches. This only became more apparent in my first role after graduating.

Employed as a 'community dietitian' my first role in community health included responsibility for health promotion. It was within this part of my role that I first came to work with early childhood settings and primary schools to implement school based health and wellbeing interventions based upon the World Health Organisation Health Promoting Schools framework. My role was to assist schools in achieving recognition for the program criteria and to help them to identify changes they may wish to implement within their school environment. My role was to also look for opportunities to leverage existing partnerships to work with schools to run curriculum based activities, to support campaign messages.

Eventually this role diversified from early childhood centres and primary schools into two local secondary schools that had volunteered to participate. Whilst secondary schools were not discouraged from participating, program resources had not been designed to support secondary schools or accommodate the structural and operational differences which existed between secondary schools and early childhood or primary school settings. Through working with early childhood and primary school settings I had already witnessed a variety of challenges associated with implementing and achieving recognition for the program. This included linking curriculum based activities to the required syllabus and overarching nutrition or physical activity policies of the setting, staff capacity to complete the necessary documentation, or initially even receiving support from senior management to engage with the program. These were challenges that had proven difficult to overcome in settings which had an in-built integrated curriculum, engaged parents and local community, and generally small numbers to accommodate. Implementation of the Health Promoting Schools framework in secondary schools was going to be an additional challenge, not only due to the larger student numbers, but due to the differences in how integration in the curriculum was implemented and how parents were typically involved with school based activities.

As someone whose experience in secondary schools was limited to that of the role of a 'student' I felt completely out of my depth when entering the secondary school setting. I had no idea about the 'operations of a secondary school' or inner workings of subject or 'learning area' specific teams. Secondary schools appeared to operate completely differently to the other settings with which I had worked. The challenges associated with program implementation, despite the best efforts of an enthusiastic 'champion' or health and wellbeing team, seemed to not only be more complex than in early childhood and primary school settings, but were particularly challenging.

For example, secondary schools had several hundred enrolments and the issue of 'competing' priorities for teachers as well as students' academic success were much more pronounced. 'Where' the program should sit within the curriculum and broader school objectives often remained fluid, which would later result in a multitude of issues when documentation and evidence was required for recognition. Or alternatively only some of the students in particular year levels or classes would be exposed to activities that in fact became 'class room based' rather than 'school wide'. Staff at these schools often sited 'competing curriculum priorities' and the absence of clear guidelines for the program or how it could be delivered within existing health and wellbeing policy initiatives as underlining causes of the issues faced.

It was these experiences that led me to wonder not just about the value of health and wellbeing interventions based upon the Health Promoting Schools framework in secondary schools, but on the role of policies and the political environments in which I was expecting schools to implement these programs. I started to question how easy it was for secondary schools to use the Health Promoting Schools framework. Was I sending mixed messages to schools about what their priorities should be and therefore setting them up to fail? Was adequate information being provided to secondary schools on how this could be implemented successfully, without sacrificing student academic performance or teacher performance? This is what led me to undertake this topic for my PhD research.

Reflexivity, quilting and crystallisation

Researcher reflexivity is considered a key component of providing rigour and enhancing trustworthiness, transparency and accountability to research (Finlay, 2002). There are various definitions and accounts of reflexivity in the literature, however most revolve around a researcher's self-awareness and acknowledgement of their intimate role in the process and production of research (Finlay, 2002). Pillow suggests that reflexivity requires the researcher to be critically conscious of their own location within the research and how their interests may have influenced the research (Pillow, 2003). She argues that reflexivity involves an ongoing process of self-awareness to make knowledge construction visible. This definition aligns with my interpretivist epistemological stance, (discussed in detail later in this thesis in Chapter Four) where knowledge is believed to be generated by research through human interactions and using researchers as interpreters (Weaver & Olson, 2006).

In this thesis I have chosen to explore reflexivity through the use of two metaphors, quilting and crystallisation. I have chosen to use these metaphors as metaphors help to create vivid imagery

(Boulaire, 2004) and are a figure of speech in which phrases or words that ordinarily mean one thing are used for another, in order to suggest a likeness between the two things (Collins, 2006).

Quilting was proposed as a metaphor for scientific inquiry by Flannery (Flannery, 2001). Quilts conjure up images of pieces of fabric sewn together in a distinctive, or perhaps haphazard way, to create a single cohesive piece. Much like in scientific inquiry, quilting requires a set of skills and knowledge that must be acquired over time. In quilting there are rules, steps and traditions that should be adhered to however quilters are also encouraged to be creative and innovative. The same can be said for scientific inquiry. There are various methods and techniques considered to be best practice juxtaposed with the need to be novel and innovative. I have therefore used reflexive quilting as an opportunity to explore reflexivity in an innovative way. Reflexive quilting has been incorporated into this thesis as a method of weaving or 'quilting' researcher reflexivity throughout the thesis. This involved drawing together my researcher reflexivity in each of the studies to create one cohesive piece. As will be described in Chapter Four, Studies Two and Three in this research incorporated qualitative interviews and focus groups to explore the experiences of policymakers and secondary schools in the design and implementation of the Achievement Program policy. I therefore generated knowledge through human interactions and acted as an interpreter of these experiences.

In addition to the quilting metaphor I have drawn on 'crystallisation' in this thesis. Crystallisation was originally proposed by Richardson as a postmodernist deconstruction of triangulation (Richardson & Pierre, 2005). The central image of triangulation is a two dimensional object. Triangulation assumes that if two or more sources of data, types of data collection or researchers converge on the same conclusion then the conclusion is more credible. Triangulation assumes a single reality or truth (Richardson & Pierre, 2005). However the central image in crystallisation is a crystal – a three dimensional object with various shapes and angles. In crystallisation the metaphor of a crystal is used to encourage researchers to explore multiple sources of data from multiple angles and perspectives to uncover a more complex and in-depth, yet still partial, understanding of an issue. The creation of a crystallised text is not dissimilar to the creation of a quilt (Ellingson, 2009). A crystallised text requires the author to carefully and creatively weave together data from various sources to create their story.

In this thesis I have used crystallisation to explore design and implementation of the Achievement Program policy through multiple angles using government policies, policymakers' perspectives and the lived experiences of a secondary school engaged in the Achievement Program policy. Not all policymakers involved in the Achievement Program policy design process could be included

in this research. Nor could all of the secondary schools that have successfully achieved recognition for the Achievement Program policy. Thus because this thesis can only present a partial understanding of the design and implementation of the Achievement Program policy to date crystallisation was a better methodological fit for this research compared to triangulation. Crystallisation was also used to facilitate inclusion of drawings and images as part of data and reflexive quilting pieces included in this thesis.

Ellingson (2009) also proposes that reflexivity is a central principle of crystallisation. She proposes that a crystallised text includes thoughtful consideration of the researcher and their role in the research design, data collection and data presentation. Tracy also argues that 'one way to deal with the ambiguity of how much self-reflexivity is to *show* rather than *tell* by weaving one's reactions or reflexivity considerations throughout' (Tracy, 2010, pp. 842). To create my 'reflexive' quilt I have chosen to 'weave' my reflections into each results chapter. Table i summarises the reflexive quilting pieces I have presented. Each of these chapters contains the traditional sections of an introduction, results, brief discussion and summary in addition to a section titled 'reflexive quilting'. Within these sections I have reflected on methodological challenges, decision making processes and my personal reflections and interpretations of results, weaving together data from various sources to create the thesis story.

Table i: Reflexive quilting plan

Chapter	**Reflexive quilting pieces**
Chapter 3: Systematic literature review	Qualitative synthesis and surprises in the review results
Chapter 5: Policy document analysis	Constructs of the HPS framework
Chapter 6: Policymaker interviews	Evidence based HPS policy development
Chapter 7: Secondary school case study	What is a 'whole of school' approach

I have used reflexive quilting and crystallisation to carefully stitch together the sections of this research in the hope of creating a seamless 'crystallised' thesis for my reader, with insights into my research journey weaved throughout to support interpretation of the data. I have also endeavoured to use reflexive quilting to reveal my insights and thoughts into methodological decision making processes (Finlay, 2002) as well as results that may have surprised me as a way of linking phases of this research.

Chapter One – Introduction

1.1 Introduction

This thesis explores implementation of initiatives based upon the World Health Organisation (WHO) Health Promoting School (HPS) framework (hereafter referred to as the 'HPS framework') in secondary schools in Victoria, Australia.

This introductory chapter outlines the context and structure of this PhD thesis. Sections 1.2 outlines the context and setting of the research. Section 1.3 outlines the research aims and objectives before a summary of how this 'Thesis including Published Works' is organised in Section 1.4. This is followed by a short summary of the chapter in Section 1.5.

1.2 Health Promoting Schools framework to support obesity prevention

It is well established that obesity is a significant health problem in Australia contributing to much of the burden of chronic disease (Bleich et al., 2018; Walls et al., 2009). Poor dietary intake and physical inactivity are key contributing factors to the increasing prevalence of obesity (Waters et al., 2011). Interventions aimed at treating the current obesity epidemic and preventing the predicted increases in prevalence are imperative. Evidence based prevention programs have previously been shown to be cost-effective, improve productivity and reduce demands on primary health care services (Lehnert et al., 2012; Waters et al., 2011). Multi-strategy prevention interventions aimed at obesity prevention have been implemented in communities across Australia and have included strategies aimed at building community capacity, developing healthy public policies, encouraging community action, as well as building individuals health skills and knowledge through the provision of health and nutrition related education (de Silva-Sanigorski et al., 2008; de Silva-Sanigorski et al., 2010a; Mathews et al., 2010; Millar et al., 2011).

One of the ways obesity is being prevented is with settings based approaches. Settings based approaches aim to recognise the importance of the context and environments in which populations work and live. They have shifted focus from an individual, their health problem and 'risk factors' to the system, organisation or settings of health related behaviours (Dooris et al.,

1998). Such approaches may be implemented in a range of settings such as early childhood centre, schools, workplaces and hospitals. One example of a settings based approach is the HPS Framework.

The HPS Framework was developed in the 1980s underpinned by core elements of health promotion highlighting the importance of considering the wider political, environmental and social influences on health and people's individual lifestyle choices (Nutbeam, 1992). The framework focuses on three areas of intervention within the school and local community: 1) school curriculum, teaching and learning (for example, implementation of nutrition education in the curriculum), 2) school ethos, environmental, and organisation (for example, school food service policies to support healthy food availability), 3) school-community partnerships and services (for example, partnerships with local community health services and organisations) (Nutbeam, 1992).

The HPS framework has been implemented across Europe, the United Kingdom, Canada, South Africa, China, Hong Kong, Taiwan, New Zealand and Australia (Langford et al., 2014; Lee et al., 2006; Liao et al., 2015; Preiser et al., 2014). Recent reviews have identified positive effects of the HPS framework on health and nutrition outcomes for children and adolescents. A 2014 Cochrane Review found positive effects of HPS interventions on body mass index (BMI) as well as health behaviours such as physical activity and fitness levels, and fruit and vegetable intake (Langford et al., 2014). Another review identified improved healthy eating habits such as increased consumption of high-fibre foods, healthy snacks, and fruits and vegetables following participation in school based nutrition promotion programs based upon the HPS framework (Wang & Stewart, 2013). The review also identified a reduction in primary and secondary school students reported skipping of breakfast, and consumption of sweet drinks and fatty foods (Wang & Stewart, 2013). The potential impacts of the HPS framework on health outcomes for young children engaged in early childhood settings and primary schools are well documented. However the majority of the available HPS evidence is focused on young children under 12 years (Langford et al., 2014). Evidence related to adolescents engaged in secondary schools is lacking. Since obesity prevalence is increasing in both child and adolescent populations in Australia and globally, this lack of evidence in adolescents has resulted in calls for more evaluations of interventions aimed at adolescents (Langford et al., 2014; Langford et al., 2017).

Active policy implementation and support is essential to successful implementation of the HPS framework (Parsons et al., 1996; Samdal & Rowling, 2011). HPS policies help to ensure commitment, prioritisation and accountability from all stakeholders, and may include school

based policies as well as local or national policies (Parsons et al., 1996; Rowling & Samdal, 2011; Samdal & Rowling, 2011). However to our knowledge little is known about the role and potential impact of policy on implementation of the HPS approach, despite substantial investments across various countries. Little is also known of how HPS policies may translate into action and if these policies are translated as intended by policymakers or interpreted differently by those responsible for implementation at a local level. Understanding of the role and translation of the HPS framework in policy is important for informing potential future design and government investments in the HPS framework.

Recently the HPS framework has been used in Victoria, Australia as the underlining framework of the Achievement Program policy (hereafter referred to as the 'Achievement Program'). The Achievement Program was launched by the Victorian State Government in 2012 as part of a multi-strategy, systems-based approach to address increasing rates of overweight and obesity in Victoria, Australia (Department of Health and Human Services, 2019a). The Achievement Program was implemented as a voluntary policy within early childhood settings, schools and workplaces to support the development of policies, education and community partnerships to create healthy places for people to work, learn and live (Clarke et al., 2018). The Achievement Program was designed as an award based program where settings progress through a series of eight steps to achieve recognition as a 'health promoting settings'. As part of the program settings are encouraged to establish a working group, develop a school charter and work towards achieving benchmarks for self-selected health priority areas. The health priority areas include: alcohol and other drug use, healthy eating and oral health (HEOH), mental health and wellbeing, physical activity, safe environments, sexual health and wellbeing, sun protection, and tobacco control. Settings are encouraged to develop action plans before applying for recognition for their chosen health priority areas. Further details of the Achievement Program will be described further in Chapters Two and Four. Introduction of the Achievement Program offered a unique and timely opportunity to explore localised implementation of the HPS framework in Victorian secondary school settings in my PhD research.

1.3 Research aims and objectives

This research aimed to examine implementation of initiatives based upon the HPS framework in secondary schools with a particular focus on nutrition. More specifically this research had the following objectives:

- To explore the impacts of multi-strategy interventions in schools that encompassed nutrition education on adolescents' health and nutrition outcomes and behaviours
- To explore how government curriculum and school based health and wellbeing policies support implementation of policies based upon the HPS framework
- To explore how policymakers designed a policy based upon the HPS framework intended for implementation in secondary schools
- To explore the experiences of secondary schools implementing the Achievement Program.

To achieve the research objectives the research comprised of four main parts with separate research questions:

1.3.1 Part One - Systematic literature review

This study was designed to systematically review the available peer-reviewed evidence to explore the impacts of multi-strategy interventions in schools that encompassed nutrition education on adolescents' health and nutrition outcomes and behaviours. Specifically this review was designed to answer the following research questions:

- What impacts can multi-strategy nutrition education interventions have on adolescent anthropometric and dietary intake measures?
- What intervention characteristics are necessary to facilitate adolescent behaviour change?

1.3.2 Part Two - Study 1: Policies

This qualitative study was designed to explore how government curriculum and school based health and wellbeing policies support implementation of policies based upon the HPS framework. This study was designed to answer the following research question:

- To what extent are government curriculum and health and wellbeing policies likely to support secondary schools to improve health and wellbeing using the HPS framework in Victoria, Australia?

1.3.3 Part Three - Study 2: Policymakers

This qualitative study was designed to explore how policymakers designed a policy based upon the HPS framework intended for implementation in secondary schools. This study was designed to answer the following research question:

- What considerations underpinned policymakers' decisions for the design and implementation of a policy based on the HPS framework in secondary schools?

1.3.4 Part Four - Study 3: Policy implementers

This qualitative study was based upon case study methodology. It was designed to explore the experiences of secondary schools implementing the Achievement Program. This study was designed to answer the following research questions:

- How and why secondary schools are progressing through the Achievement Program?
- What factors are contributing to secondary schools achieving 'recognition' as a 'health promoting school'?

1.4 Thesis overview and structure

This thesis describes a program of research designed to explore the development and implementation of the HPS framework in Victorian secondary schools. This thesis commenced with a foreword to identify my position as the researcher and approach to reflexivity throughout this thesis. This chapter (Chapter One) provides an orientation to the context of the research and its aims.

Chapter Two provides the background and rationale for the research. It includes exploration of obesity prevention models and the development and implementation of the HPS framework. This is followed a detailed description of the Achievement Program.

Chapter Three includes a systematic literature review (in the form of a published paper) on the impacts of multi-strategy school based interventions on adolescent anthropometric and dietary outcomes.

Chapter Four outlines the methodology underpinning the research. The methodology applied in the individual studies are then described.

Chapters Five, Six and Seven detail the results of the three research studies presented as submitted manuscripts where appropriate.

Chapter Eight is the final chapter of the thesis and summarises the research. The chapter draws together the work from the results chapters to discuss the findings and develop recommendations for future implementation of school based health and wellbeing interventions in secondary schools for adolescents, implications for practice and future areas for investigation.

The thesis is concluded with an afterword which summarises my journey as the researcher and draws upon the reflexivity pieces woven throughout the thesis. This is followed by a reference list and appendices. References listed in published or submitted manuscripts were not included in the overall thesis reference list, but rather are referenced as part of their inserted manuscripts.

1.5 Summary

Chapter One has introduced the topic of focus for this thesis and the specific research questions. I now present more detailed background literature related to the HPS framework and Achievement Program and rationale for this PhD research.

Chapter Two – Background

2.1 Introduction

This chapter follows on from the thesis introduction provided in Chapter One to outline the background literature and rationale related to the prevalence of obesity in Australia, the HPS framework and Achievement Program.

2.2 Obesity in Australia

It is well established that obesity is a significant health problem in Australia and indeed the world, contributing to much of the burden of chronic disease (Bleich et al., 2018; Walls et al., 2009). Obesity is increasing in Australian children and adolescents (Department of Health and Human Services, 2008). Data from the Future prevalence of overweight and obesity in Australian children and adolescents, 2005-2025 report predicts that the prevalence of overweight and/or obesity will increase between 0.4% and 0.8% per year, which means that by 2025 37% of males and 33% of females aged 5-19 years will be overweight or obese, compared to 21% in both males and females in 1995 (Department of Health and Human Services, 2008). This equates to an additional 6.7 million overweight and/or obese Australian children and adolescents in 2025 compared to 2005. Xu et al. (2018) examined changes in prevalence of obesity in Australian school aged children from 1985 to 2014 and found that obesity tripled between 1985 and 1995 from 1.6 to 4.7% before plateauing between 1995 and 2014. Xu et al. also identified that the percentage of morbidly obesity children increased from <1% to 2% between 1985 and 2014 (2018). Hardy et al. (2016) studied overweight and obesity rates in New South Wales, Australia and found that one in five (22.9%) of primary school aged children were overweight or obese in 2015 whilst 27.4% of secondary school adolescents were overweight or obese. Overweight increased by 5% among adolescents between 2010 and 2015 (Hardy et al, 2016). This is of great concern as obese children have been found to be 25- 50% more likely to be obese in adulthood (Must & Strauss, 1999). In Australia Indigenous children and adolescents are more at risk of being overweight or obese than non-indigenous children and adolescents. A national health profile conducted by Azzopardi et al. (2018) identified that approximately 45% of indigenous adolescents were overweight or obese. Those living outside of major cities and from lower socio-economic groups are also more likely

to be overweight or obese than others (Australian Institute of Health and Welfare, 2017). There is an urgent need for action to address obesity in children and adolescents.

Poor dietary intake and physical inactivity are key contributing factors to the increasing prevalence of obesity. Dietary risk factors include high intakes of sugar sweetened beverages and low intakes of fruits, vegetables and whole grains (Waters et al., 2011). Individual and environmental factors such as having limited personal finances to access nutritious foods or engage in physical activities, and high concentrations of fast food outlets in lower socio-economic areas have been proposed as potential contributing factors (Bambra et al., 2012; Beauchamp et al., 2014; Frederick et al., 2014; O'Dea & Dibley, 2010; Wang & Lim, 2012; Wang & Zhang, 2006). According to Ecological Systems Theory interactions between these factors can also lead to overweight and obesity (Davison & Birch, 2001). Interventions aimed at treating the current obesity epidemic and preventing the predicted increases in prevalence are therefore imperative and need to address these contributing factors. Interventions need to be targeted to meet the specific needs of the Australian population and its subgroups.

2.3 Approaches to tackle obesity

To achieve sustained reductions in obesity there is a need to improve sociological environments in which people live, learn, work and play, in order to both promote and enable people to have healthy lifestyles. Evidence based prevention programs have previously been shown to be cost-effective, improve productivity and reduce demands on primary health care services (Lehnert et al., 2012; Waters et al., 2011). Prevention programs may include targeted environmental changes such as the introduction of safe walking paths and groups, school nutrition policies and gardening projects to increase access to healthy food options (Kumanyika et al., 2002). There is also growing evidence and support worldwide that when designing interventions to improve environments multi-strategy approaches are needed (American Dietetic Association, 2006; Kumanyika et al., 2002). Multi-strategy approaches address both individual and societal factors, have multiple focal points and levels of intervention (i.e. individual, community, regional and national) and include both policies and programs which may build links between sectors (Bleich et al, 2018; Kumanyika et al., 2002). When compared with single strategy approaches, multi-strategy approaches have been found to be more likely to have long term effects on improving population health (American Dietetic Association, 2006). In essence, to make significant impacts in obesity rates, prevention

initiatives must deal with multiple determinants. Targeting multiple determinants through multiple strategies and stakeholders at one time is therefore necessary (Prosser et al., 2010).

2.3.1 Evidence for multi-strategy prevention interventions

Multi-strategy prevention interventions can be defined as prevention interventions that simultaneously deliver a variety of strategies and actions which consider the social, political and environmental factors that may be impacting on health and wellbeing (Prosser et al., 2010). This typically occurs within multiple settings (e.g. schools, community organisations, workplaces) and across multiple population sub-groups acknowledging the important connections individuals have in communities (Bleich et al, 2018). They exclude one-off events and education programs with individuals or small programs which in isolation may have limited capacity to result in changes in health behaviours (Swinburn et al., 2005).

Multi-strategy prevention interventions offer opportunities to simultaneously implement prevention interventions not only according to life stages but according to settings and sectors where specific action can take place. In Australia multi-strategy prevention interventions have been implemented across different communities and lifestages. Examples of interventions conducted in Australia have included strategies aimed at building community capacity, developing healthy public policies, encouraging community action, as well as building individuals health skills and knowledge through the provision of health and nutrition related education (de Silva-Sanigorski et al., 2008; de Silva-Sanigorski et al., 2010a; Mathews et al., 2010; Millar et al., 2011). Whilst multi-component interventions delivered in Australian schools have combined peer support and classroom teaching and curriculum activities with teacher development and modifications to the school environment (Dudley et al., 2018; Sutherland et al., 2016)

To date multi-strategy approaches to obesity prevention have focused upon primary school children aged six to 12 years in school settings. Unfortunately most have been short term (12 months or less) and have not been sustained (Bleich et al, 2018; Waters et al., 2011). To address the shortage of long term program evaluations and outcome measures new approaches to interventions and greater focus on the needs of other at risk sub-populations has been recommended (Waters et al., 2011).

Current evidence also supports the need to focus on health behaviours such as dietary intake and physical activity as well as socially driven mediating structures or 'risk regulators'. These risk regulators include cultural norms, food availability, work conditions as well as laws and policies

(Minke et al., 2006). Population based interventions cannot attempt to influence individual health behaviours without addressing some of these risk regulators.

2.3.2 The role of policy in multi-strategy prevention interventions

Successful population obesity prevention strategies need to include a portfolio of initiatives including policies (Peeters & Backholer, 2017). Policy as a strategy plays a key role in providing a vision and direction for preventing obesity (Lawrence & Swinburn, 2010; Peeters & Backholer, 2017). Broadly speaking policies are statements that capture an organisations beliefs, values and intentions towards an issue (Lawrence, 2007). In relation to obesity prevention, policy may include high level population based government policies through to more localised school or workplace policies. For example, the regulation of no Goods and Services Tax on fresh fruit and vegetables or taxation on sugar-sweetened beverages are examples of high level policies, whereas healthy school canteen policies are an example of more localised policies (Browne et al., 2018; Driessen et al., 2014; Jaime & Lock, 2009).

Government policies can help to demonstrate the government's commitment to obesity prevention and provide guidance for planning, implementation and evaluation of policy (Lawrence & Swinburn, 2010). These types of policies have also been referred to as 'hard' policies, where strong regulatory measures may be identified as being less politically feasible but more likely to be effective for obesity prevention (Lang & Rayner, 2007; Milio, 1990; Swinburn et al., 2015). Conversely 'soft' policies such as funding for programs, monitoring and evaluation, and research may be considered to be more politically feasible but likely to have less impacts on obesity prevention (Lang & Rayner, 2007; Milio, 1990; Swinburn et al., 2015). More localised policies, for example school based policies, also have the potential to demonstrate this same commitment and guidance on a smaller scale (Bell & Swinburn, 2004; Foster et al., 2008; Lawrence & Swinburn, 2010; Uauy et al., 2010). Governments therefore play a key role in obesity prevention by creating policies that protect and promote healthy lifestyles through provision of a healthy food system and physical environment. This means governments could take a leading role in driving population-level policy development and implementation. Whilst a range of strategies are required to prevent further increases in obesity, policies have the potential to prevent excess weight gain in healthy or high risk populations and are also likely to prevent further weight gain in those who are already overweight or obese (Peeters & Backholer, 2017).

Uauy et al. (2010) further argue that government policies should provide the backbone for health promotion activities aimed at reducing obesity. This ensures that all government and non-government actions are working towards a common goal or direction with 'rules' to follow.

Actions may include program funding and service delivery. They also suggest that ministries of health in particular play a crucial role in bringing together other ministries that will inform effective policy design and implementation. Governments should also endeavour to ensure sustainability of policy implementation by bringing together key stakeholders such as academics, consumer groups, health professional bodies and other non-government bodies (Uauy et al., 2010).

Policies also play a crucial role at a more detailed and micro level, for example in schools or workplaces, where food and nutrition policies contribute to shaping individuals' food choices. However it is important to note that Lawrence and Swinburn (2010) suggest that we must not only focus on the specific details of evidence based practice when considering government policy. Evidence based practice is often just one of many factors considered during the policy making process. For this reason we must look more broadly to the political settings in which policies are made and the influences on policymakers to truly understand and improve obesity prevention policy processes and outcomes.

2.3.3 Theoretical frameworks underpinning multi-strategy prevention interventions

Evidence suggests that multi-strategy prevention interventions should be underpinned by theoretical frameworks or models to guide and strengthen intervention development, as well as discussion and understanding of the results (Gibbs et al., 2011). Theoretical frameworks also assist development of measurable program outcomes and may increase the likelihood of successful replication (Glanz & Bishop, 2010). The importance of considering frameworks when developing interventions to prevent childhood obesity has been highlighted previously in the literature (Waters et al., 2011). Behavioural frameworks that have been used in childhood obesity prevention research include the Trans-Theoretical Model, Theory of Planned Behaviour, Health Belief Model, Social Cognitive Theory and socioecological models (Jones et al., 2014; Zenzen & Kridli, 2009). These frameworks focus upon individual decision-making processes and factors and therefore may be limited in their ability to consider the influence of environmental factors.

Socioenvironmental frameworks are also essential for population-based obesity prevention interventions to address environmental, as well as individual factors, influencing obesity. These frameworks align with the Ottawa Charter for Health Promotion where 'creating supportive environments' is an area of focus (Gibbs et al., 2011). Flynn et al. (2006) suggested that multi-strategy obesity prevention interventions aimed at children and adolescent should be developed using an integrated chronic disease prevention model with a community-based participatory research framework. The Ecological Systems Theory has also been proposed as a suitable

theoretical framework for conceptualising the complex set of factors contributing to children and adolescents risk of developing overweight or obesity and therefore inform preventative approaches (Davison & Birch, 2001). However the HPS framework is arguably the most important and well-established theoretical framework to underpin obesity prevention interventions aimed at children and adolescents (Jones et al., 2014). The HPS framework aligns with the principles of the Ottawa Charter and involves multi-level strategies to address changes in individual skills and behaviours as well as the school environment (Jones et al., 2014). Moreover, similar to other theoretical frameworks, the HPS framework draws upon policy as a key strategy to support and improve implementation and sustainability of prevention interventions, whilst remaining cognisant of the broader school setting and existing school policies and responsibilities.

2.4 The Health Promoting Schools framework

The HPS framework was developed in response to the need for a more holistic approach to health promotion in schools. The framework was underpinned by the Ottawa Charter which highlights the importance of considering the wider political, environmental and social influences on health and people's individual lifestyle choices (Nutbeam, 1992).

Within the HPS framework schools are encouraged to promote health and wellbeing throughout the whole school environment, not simply through the curriculum. The framework is based upon the premise that education and health are inseparable; health supports successful learning and successful learning supports health (Langford et al., 2014; Nutbeam, 1992).

A health promoting school strives to improve the health of the entire school community by empowering students, families, school personnel as well as community members, with health information. The framework focuses on three areas of intervention within the school and local community: 1) school curriculum, teaching and learning, 2) school ethos, environmental, and organisation, 3) school-community partnerships and services (Figure 2.1).

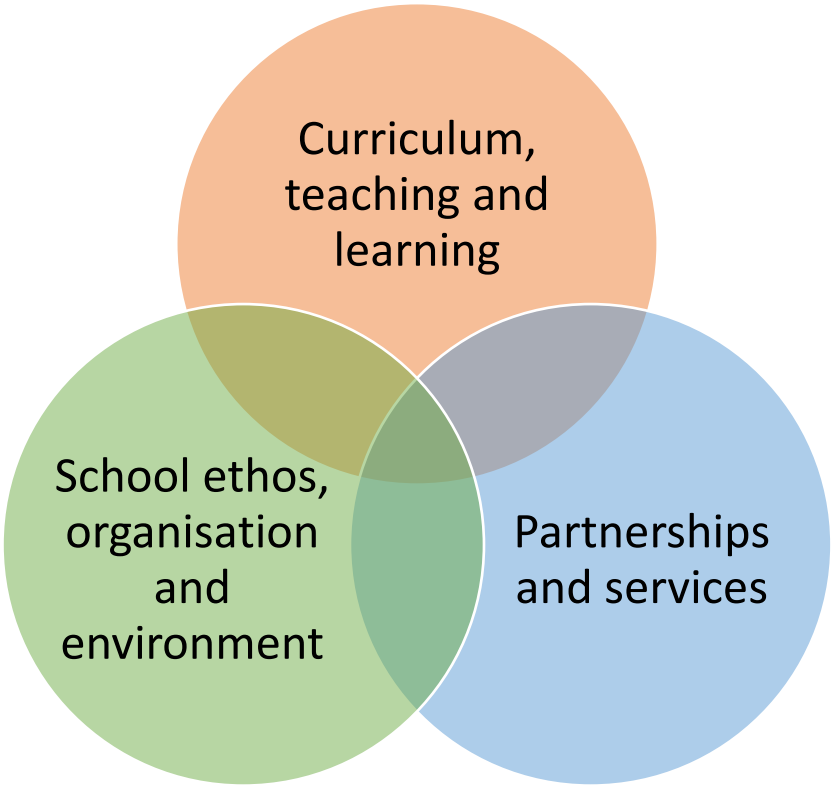

Figure 2.1: World Health Organisation Health Promoting Schools Framework (adapted from Deakin University and Department of Education, Employment and Training, 2000)

The HPS approach aims to achieve healthy lifestyles in whole school populations through developing supportive environments that are conducive to the promotion of health (Burgher et al., 1999). In order to achieve this aim a HPS will use its internal and external partnerships, management structures, teaching and learning styles, and methods of establishing synergy between its pupils, teachers and those involved in school life, to improve emotional and physical health (Burgher et al., 1999). As such, it provides a policy framework from which to improve the health of school communities.

2.4.1 Implementation and effectiveness of the Health Promoting Schools framework

The HPS framework has previously been to shown to be effective in creating environments that are supportive of health related curriculum and policy change. A 2014 Cochrane Review identified 67 studies of children and young people aged four to 18 years using an HPS intervention that included input into the curriculum, changes to the school environment or ethos, and engaged communities and families. The review found some positive effects of interventions targeting BMI, physical activity, physical fitness, and fruit and vegetable intake, in addition to tobacco use and bullying (Langford et al., 2014). However the evidence was found to be of low to moderate quality.

A review by Wang and Stewart (2013) identified twenty school-based nutrition promotion program studies which used the HPS framework. The review showed improved eating habits such as increased consumption of high-fibre foods, healthy snacks, fruits and vegetables, reduced skipping of breakfast and reduced consumption of sweet drinks and fatty foods in primary and secondary school students (Wang & Stewart, 2013). The findings of this review are limited as only studies that had explicitly identified the HPS framework were included and studies of similar programs that had utilised the underlining principles of the HPS framework, or multi-strategy prevention approaches that included environmental and policy changes, may have been excluded. The review also reported on improvements in children and adolescents together so the impacts on adolescent populations only were difficult to identify.

2.4.2 Essential components or enablers of the Health Promoting Schools framework

Following publication of the Cochrane review on the HPS framework (Langford et al., 2014), Langford et al. (2015) explored the process data related to the included trials to explore elements deemed essential for success. Essential elements included aligning interventions with core school aims, working with teachers to develop programs which increased ownership, providing ongoing support and training, and tailoring the program to individual school needs.

These findings were consistent with a recent systematic review and narrative synthesis of qualitative studies adopting the HPS framework (Hung et al., 2014). Hung et al. (2014) sought to identify factors that facilitated delivery of the HPS framework (the enablers) and strategies for better supporting health promoters in delivering HPS framework. Enablers identified included: provision of ongoing training and education in school-based health promotion; adopting a multidisciplinary and collaborative approach to implementation; establishing professional networks and relationships; seeking commitment from school staff, management, government authorities and other stakeholders; and following a framework or guidelines for implementation. The review also highlighted the importance of developing school-based policies that meet local health needs (Hung et al., 2014).

Eight theory driven components of how the HPS approach can best be implemented have also been defined (Rowling & Samdal, 2011; Samdal & Rowling, 2011). The components include: preparing and planning for school development; policy and institutional anchoring; professional development and learning; leadership and management practices; relational and organisational support context; student participation; partnerships and networking; and sustainability. Peralta and Rowling (2018) proposed that these components may be useful in guiding whole of school approaches to adolescent health literacy and developing health literate organisations. Many of

the components are similar to those already mentioned in this chapter and could be categorised into the three core strategies for change processes in schools previously identified 1) school leadership, 2) establishing readiness and 3) organisational facilitation (Daft, 1999; Hargreaves et al., 2001; Hopkins & Jackson, 2003). The importance of recognising the time required to achieve changes in accordance with the HPS approach and the pivotal role of teachers in pursing the HPS approach have also been identified (Inchley et al., 2007).

The HPS framework has been implemented in many countries however it has been successfully implemented widely across schools in Hong Kong, Taiwan, North America and Europe (Hung et al., 2014; Inchley et al., 2017; Langford et al., 2014; Lee et al., 2007; Liao et al., 2015; McIsaac et al., 2017). Implementation has excelled in these countries due to the establishment of health promoting school networks and allocation of dedicated support centres and coordinators. Government policies and support at regional and national levels through congruent health and education sector leadership have also played a key role as identified by Langford et al. (2015) and Wang and Stewart (2013) (explored further in section 2.4.4).

This body of evidence has emphasized the importance of aligning interventions based upon the HPS framework with the core business of schools (i.e. the curriculum) and anchoring interventions within government and school based policies with strong leadership support as key components to successful implementation. The role of health promoting schools as a policy mandate is becoming clearer. The documented challenges and barriers to implementation and effectiveness of the HPS framework will now be considered.

2.4.3 Potential challenges or barriers of the Health Promoting Schools framework

Langford et al. (2015) explored challenges to successful implementation and effectiveness which should be considered for new HPS initiatives. High levels of acceptability among teachers and students were reported, however implementation fidelity varied considerably. Although a key component of the HPS approach, engaging families in implementation was highly challenging. Reasons identified included parents misunderstanding of the purpose of the program and the family events offered, time constraints and conflicts with work schedules, and practical issues such as lack of transportation or babysitting. Further identified barriers to implementation include a lack of institutional support and the low value placed on health initiatives in preference for academic subjects (Langford et al., 2015). Hung et al. (2014) also identified pursuit of academic achievement as a higher priority than health, and thus a barrier to effective implementation.

Whilst it is suggested that the HPS framework be tailored to individual schools' needs, another challenge for schools is the varied interpretations of the framework by health promoters. The literature suggests that for some health promoters the guidelines provide autonomy and flexibility in implementation, whilst others see the guidelines as being vague and unclear, thus impacting upon implementation and motivation of health promoters (Hung et al., 2014).

Keshavarz et al. (2010) proposed viewing schools as complex adaptive systems. At their core complex adaptive systems comprise of a population of diverse rule-based agents within a multi-level and interconnected system. Using the complex adaptive system framework Keshavarz et al. (2010) identified poor understanding of the diversity and complexity of schools, inadequate feedback and information between schools, and with the health sector, about the HPS approach, and inadequate roles and resourcing to facilitate HPS in schools as barriers to implementation and sustainability of HPS interventions. The absence of professional development for teachers in health, in addition to teachers' fears and stress that the HPS was an additional intervention or project which would add to their workload in an already crowded curriculum, were also identified as potential barriers during development of a national HPS framework in Australia (Rissel & Rowling, 2000). The extent to which HPS initiatives are considered to be aligned with the core business of schools and supported by all levels of the education sector, including policy level support, have also been identified as potential barriers to implementation and sustainability (Langford et al., 2015; Rissel & Rowling, 2000).

This evidence reiterates the evidence presented in Section 2.3.2 related to the importance of ensuring interventions based upon the HPS framework are designed in consideration of school curriculum requirements in addition to being supported by government and school based policies to enhance implementation and adherence.

2.4.4 The role of policy in the Health Promoting Schools framework

The importance of aligning HPS initiatives with the overall aims of schools, integrating into their 'core business' of educating students, and the important role of policy have been explained above. Implementation of school based HPS policies is clearly defined as a key aspect in the 'school environment' component of the HPS framework. School based policies ensure leadership and support related to resource allocation (Rowling & Samdal, 2011; Samdal & Rowling, 2011). Policies also ensure commitment and accountability from all stakeholders including school leadership, staff and parents (Langford et al., 2015; Parsons et al., 1996; Samdal et al., 2010). Policies supporting HPS initiatives also help to anchor the approach within the school ethos (Samdal et al., 2010).

State and national policy support for the HPS framework, in addition to HPS networks, have the potential to promote or constrain successful implementation of the HPS approach (Deschesnes et al., 2003; Inchley et al., 2007; Lee et al., 2007; Parsons et al., 1996; Turunen et al., 2017). As stated earlier, schools are driven by their core business of educating students and academic achievement. National and local policies incorporating and supporting implementation of interventions based upon the HPS approach play a vital role in assisting to increase prioritisation and success of the approach within schools. What remains unknown is why the HPS approach is not consistently implemented across countries where the HPS framework has been recognised as best practice and incorporated into national policies and supported by localised networks.

For example, in Australia the National Health Promoting School Initiative (NHPSI) developed a national HPS policy in 2000. The policy was never endorsed due to a change in national government (Rissel & Rowling, 2000; Rowling & Rissel, 2000). Australian national and local government investment in various policy initiatives based upon the HPS framework has continued, but implementation remains inconsistent even with strong supporting evidence (de Silva-Sanigorski et al., 2010; Wyn et al., 2000). In the absence of a national HPS policy, exploring existing government health and education policies' contents and how they may be aligned with or supporting implementation of the HPS framework is needed to help us identify potential reasons for this inconsistent implementation.

2.4.5 What remains unknown about the Health Promoting Schools approach – the need to focus on adolescents and secondary schools

Much of the current evidence related to the HPS approach focuses on the prevention of obesity in young children in early childhood and primary school settings. Despite the equally rapid increase in obesity prevalence in adolescent populations, and that obese children and adolescents are at increased risk of becoming obese adults, there is little evidence related to adolescents and secondary schools (Prosser et al., 2010). The 2014 Cochrane review found that whilst some included studies focused on 'older' students of 12-14 years old, few targeted later years (Langford et al., 2014). This review suggested that this may be due to the later years of secondary, middle or high school (hereafter referred to as 'secondary') being dedicated to exams, giving the perception of limited time to participate in health initiatives (Kann et al., 2014, Langford et al., 2014). They identified the need for more evaluations of interventions that promote nutrition and physical activity in adolescents.

The current literature provides little reasoning to account for why so few HPS initiatives are aimed at adolescents and secondary schools. This is particularly concerning when current evidence suggests that school driven initiatives implemented with supporting policies are the most effective in changing eating habits and physical activity patterns in children and adolescents and may help to reduce overweight and obesity (Prosser et al., 2010). Exploring the design and implementation of HPS initiatives aimed at adolescents may assist in understanding why policy adoption is not common place.

2.5 The Achievement Program

The Achievement Program was launched in 2012 by the State Government of Victoria, Australia and aimed to improve Victorian's health by focussing on addressing the underlying causes of poor health in workplaces, communities and children's settings through policies and locally led strategies. The Achievement Program formed part of a broader initiative, Healthy Together Victoria which was launched by the State Government of Victoria in 2011. Healthy Together Victoria was a state-wide multi-strategy systems based approach which included multiple initiatives across a variety of settings to address increasing rates of obesity and obesity-related chronic disease. Initiatives included delivery of high-level policy and leadership in health promotion, providing support for creating healthy canteens, menus and vending machines in children's settings, workplaces and hospital, working with food growers, producers and sellers to map the local food system and increase access to fresh and healthy food, and influencing community planning and transport to increase walkability of neighbourhoods to support active transport (Department of Health and Human Services, 2015).

Healthy Together Victoria was designed using a complex adaptive systems approach which presented a unique and unprecedented approach to health prevention and promotion in Victoria. Traditional approaches to health promotion are project based and reach fewer people. Tackling the state of Victoria's increasing rates of obesity and obesity-related chronic disease required understanding of the complex connections between the range of individual and environmental factors influencing risk factors for chronic disease. Healthy Together Victoria was therefore designed to draw upon theories of complexing and systems to consider the systems influencing Victorian's health. Unlike previous government initiatives Healthy Together Victoria was designing to more away from small-scale and short term approaches to provide a framework for long-term sustainable action across multiple settings to address systemic drivers of chronic

disease (Department of Health and Human Services, 2015). The Achievement Program formed part of this approach within workplaces and school settings.

Based on the HPS framework, the Achievement Program was an award based program eventually adopted as a voluntary ('soft') policy for implementation across a number of settings including: early childhood services, primary and secondary schools, and workplaces (Department of Health and Human Services, 2019a). Its implementation followed a Parliamentary inquiry (the Inquiry) into the potential for developing opportunities for schools to become a focus for promoting healthy community living by the Victorian Parliament Legislative Assembly of Australia's Education and Training Committee. The Inquiry recommended that a formal recognition and award based program be implemented by the Department of Education and Early Childhood Development (DEECD) (Bruce et al., 2012). The Achievement Program was developed by the Department of Health and Human Services (DHHS) in partnership with the Department of Education and Training (DET) (previously known as the DEECD) and implemented in an initial funding period from July 2012- June 2015 (Department of Health and Human Services, 2019a). The program supports registered settings to progress through a series of steps in a three phase cycle of *Coordinate, Create* and *Celebrate* (Figure 2.2).

Figure 2.2: Achievement Program cycle for primary and secondary schools (Department of Health and Human Services, 2019b)

During the first phase, *Coordinate*, settings are encouraged to establish a health and wellbeing team, develop a health promotion charter and explore or review their current health and wellbeing practices. Settings then progress to *Create* where they select two health priority areas to work towards based upon the review they conducted. The eight health priority areas include: alcohol and other drug use, healthy eating and oral health (HEOH), mental health and wellbeing, physical activity, safe environments, sexual health and wellbeing, sun protection, and tobacco control.

Schools are supported to develop action plans that will address the identified benchmarks for their selected priority areas. Once completed, schools are encouraged to submit evidence of their work in order to be recognised as 'Health Promoting Settings' or 'Health Promoting Schools' before being encouraged to re-enter the cycle and select new health priority areas to work towards (Department of Health and Human Services, 2019b).

The Achievement Program commenced in secondary schools in 2013, after implementation started in early childhood services and primary schools in 2012 (Department of Health and Human Services, 2019a). The cycle and benchmarks were designed in consideration of the current curriculum requirements for Victorian government secondary schools. During the initial implementation phase project officers in funded communities collected data related to each school that registered for the program (Brooks et al., 2018). Data included demographic information related to the school location, school sector it belonged to, enrolments and which health priority areas were selected.

The Achievement Program continues to be implemented across Victorian secondary schools with a significantly reduced workforce. Progression and uptake of the Achievement Program and factors influencing secondary schools' progression remains unclear and in need of exploration.

2.6 Summary

Obesity is increasing rapidly in children and adolescents. Evidence suggests that multi-strategy prevention interventions inclusive of policy and based upon theoretical frameworks are needed to facilitate changes in behaviour and the environments in which children and adolescents are living and learning. The HPS framework is one of the most established and researched theoretical frameworks to underpin obesity prevention interventions aimed at children and adolescents.

This framework has been used to guide and underpin government policies related to school based health and wellbeing interventions. Policy is a key component of the framework for ensuring schools achieve successful implementation.

Evidence to date has focused upon successful implementation of HPS interventions in young children and early childhood and primary school settings, with little evidence related to adolescent populations in secondary schools. Moreover there is growing government support for interventions based upon the HPS framework both internationally and in Australia, however implementation in Australia remains inconsistent.

In recent years the State Government of Victoria, Australia implemented the Achievement Program based upon the HPS framework in secondary schools. There is currently limited evidence related to implementation of the Achievement Program in Victorian secondary schools. Moreover there is little evidence available related to the potential impacts of state based government and curriculum policies on successful implementation of the HPS framework and Achievement Program in Victorian secondary schools. This research provides an in depth exploration into the current policies and practices surrounding implementation of the HPS framework in Victorian secondary schools as represented by the Achievement Program, with findings proposed to assist and inform potential policy change for this population.

Chapter Three – Systematic Literature Review

3.1 Introduction

Chapter One introduced the context and structure of this thesis and Chapter Two summarised the background literature and rationale related to the HPS framework and Achievement Program. This chapter presents a systematic literature review (in the form of a published paper) and first study completed for this PhD research. The published review is presented in section 3.2. Section 3.3 presents the first reflexive quilting piece where I include my reflections on part of the literature review methodology and its findings. A summary of this chapter is then provided in section 3.4.

3.2 A systematic literature review of the impacts of multi-strategy school based nutrition interventions of adolescent health outcomes

At the time this review was conducted, little evidence related to multi-strategy interventions that encompassed nutrition education and engaged adolescents in schools had been published, with the exception of a systematic literature review by Hoelscher et al. (2002) which focused upon multi-strategy nutrition interventions in adolescent populations in schools, clinics or community settings. This review was therefore designed to systematically update and review the available peer-reviewed evidence to explore the impacts of multi-strategy interventions in schools that encompassed nutrition education on adolescents' health and nutrition outcomes and behaviours. Specifically this review was designed to answer the following research questions:

- What impacts can multi-strategy nutrition education interventions have on adolescent anthropometric and dietary intake measures?
- What intervention characteristics are necessary to facilitate adolescent behaviour change?

The review had a specific focus upon nutrition education due to my personal interest and experience in facilitating nutrition education in secondary schools and nutrition education being an underlying theme throughout the thesis. Nutrition education had also been a key focus in previous Victorian government school based initiatives. Moreover unlike previous reviews this

review did not explicitly seek to include studies that included interventions across the three constructs of the HPS framework (Langford et al., 2014; Wang & Stewart, 2013). Instead exploring the literature for multi-strategy interventions that encompassed nutrition education was deemed to be more appropriate for this research given the Achievement Program's beginnings as a policy response to increasing rates of overweight and obesity in Victoria, Australia and the existing body of literature supporting use of multi-strategy interventions to prevent overweight and obesity.

This paper was published in the Journal of Nutrition Education and Behaviour in 2016 and is presented in its published format within this thesis.

- Meiklejohn, S., Ryan, L., & Palermo, C. (2016). A systematic review of the impact of multi-strategy nutrition education programs on health and nutrition of adolescents. *Journal of Nutrition Education and Behavior*, *48*(9), 631-646. doi:10.1016/j.jneb.2016.07.015.

A Systematic Review of the Impact of Multi-Strategy Nutrition Education Programs on Health and Nutrition of Adolescents

Sarah Meiklejohn, BND(Hons), APD[1]; Lisa Ryan, PhD, RN[2]; Claire Palermo, PhD, APD[1]

ABSTRACT

Objective: To update evidence on the impact of multi-strategy nutrition education interventions on adolescents' health and nutrition outcomes and behaviors.

Design: Systematic review of randomized controlled studies of multi-strategy interventions encompassing nutrition education published from 2000 to 2014 guided by the Preferred Reported Items for Systematic Reviews and Meta-analyses statement.

Setting: Secondary schools in developed countries.

Participants: Adolescents aged 10–18 years.

Main Outcome Measures: Anthropometric and dietary intake.

Analysis: Systematic search of 7,009 unduplicated articles and review of 11 studies (13 articles) meeting inclusion criteria using qualitative comparison.

Results: Four studies reported significant changes in anthropometric measures and 9 showed significant changes in dietary intake. Type of nutrition education varied. Components of the interventions that showed statistically significant changes in anthropometric and dietary intake included facilitation of the programs by school staff and teachers, parental involvement, and using theoretical models to guide the intervention's development. Changes in canteens, food supply, and vending machines were associated with significant changes in dietary intake.

Conclusions and Implications: Multi-strategy interventions can have significant impacts on nutrition of adolescents when the nutrition education is theoretically based and facilitated by school staff in conjunction with parents and families, and includes changes to the school food environment.

Key Words: adolescents, dietary intake, nutrition education, school, healthy eating, overweight, fruit, vegetable, sugar-sweetened beverage (*J Nutr Educ Behav*. 2016;48:631-646.)

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INTRODUCTION

Adolescence is a critical period of development when optimal nutrition to maximize growth and establish healthy eating habits is crucial for transition into adulthood.[1] As the social environment for adolescents diversifies and they become more independent, the key influences on their eating practices begin to change. Social norms, friends, and peers as well as the accessibility of food start to have a greater influence on their nutrition-related behaviors.[2]

Previous evidence-based reviews identified key components that contribute to the effectiveness of nutrition education interventions for school-aged children.[3-8] The most effective components were found to have a behavioral focus and use theory-based instructional strategies, adequate dose, peer involvement, self-assessment and feedback, and environmental interventions that complemented the behavioral lessons and community involvements. The findings of these reviews were consistent with the growing body of evidence related to whole-school approaches. The evidence recognized the importance of extending beyond just the classroom curriculum to include the school community, its members, and the environment to affect students' health and well-being outcomes.[9,10] The use of multiple strategies and activities was inherent in this approach. Much of this evidence existed only for younger children.

In 2002, Hoelscher et al[5] reviewed nutrition interventions aimed specifically at adolescents. The reviewers identified 14 population-based studies conducted in schools, clinics, or

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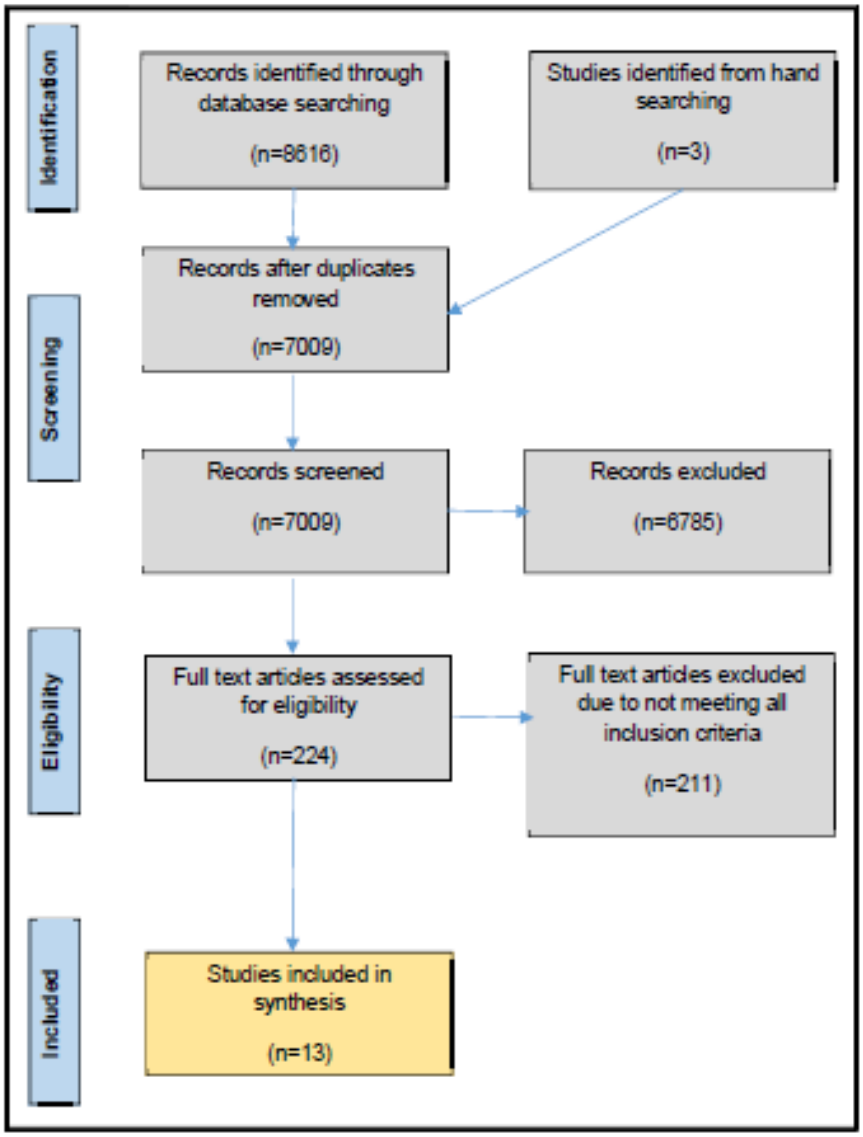

Figure. Flowchart depicting selection process undertaken according to preferred reporting items for systematic reviews and meta-analyses.

communities published between 1994 and 2000 targeted at adolescent populations aged 11–18 years. Intervention components previously identified were echoed in that review; the more successful studies included multiple strategies such as having a behavioral focus, as opposed to a knowledge-based focus, using theory-based instructional strategies, focusing on individual and environmental behaviors related to diet and physical activity, and using appropriate dose (duration and intensity) and educational strategies.[1,3] This was in line with a review of reviews conducted by Roseman et al[9] related to school-based nutrition interventions, 2 of which included only adolescent populations.[5,11] Hoelscher et al suggested that intervention components such as coordination for nutrition and physical education interventions, policy changes, use of technology such as CD-ROMs, and dissemination of effective programs would be future trends in developing effective nutrition interventions for adolescents.[5]

These reviews need updating to reflect increasingly complex challenges in the environments to which adolescents are exposed across the world. The aim of this systematic review was to update and build upon the review by Hoelscher et al[5] by exploring the impact of multi-strategy interventions that encompass nutrition education on adolescents' health and nutrition outcomes and behaviors.

METHODS

Literature Search

No institutional review approval was required for this study as humans were not involved. The first author conducted a search in September, 2014 using the following key terms: "nutrition education interventions," "adolescents," and "developing" countries. The databases CINAHL Plus, EMBASE, ERIC, OVID Medline, PsycINFO, and Web of Science were searched with limits to studies published in English and conducted in humans. An example of the search term strategy is provided in the Supplementary Material.

Inclusion and Exclusion Criteria

Criteria for inclusion in the review were: (1) randomized control studies published from 2000 to 2014 designed to evaluate multi-strategy interventions that encompassed nutrition education, (2) studies investigating adolescent populations in developed countries, and (3) studies that reported on relevant health and nutrition-related outcome or behavioral measures. For the purposes of the review, adolescents were defined according to the World Health Organization definition of people aged 10–19 years and developed countries were identified using the World Bank's definition.[12]

Outcome measures included changes in at least 1 of the following: anthropometric measures (weight, body mass index [BMI], BMI z score, skinfolds, waist circumference, or percent body fat), biochemical markers, or dietary consumption data (using tools such as a food frequency questionnaire, 24-hour dietary recall, or 3-day food record). Changes in dietary consumption data recorded included changes in dietary intake of fruits and vegetables, snack foods, fat (total, saturated, polyunsaturated, and monounsaturated), sucrose, sugar-sweetened beverages, and soft drinks. Multi-strategy interventions were identified as interventions in which nutrition education was delivered in conjunction

with complementary strategies designed to reinforce key nutrition messages such as parental involvement, school fruit and vegetable programs, establishing nutrition policies, and developing working groups.

Studies that reported on nutrition outcome and behavior measures related to changes in attitudes, body image, knowledge, self-confidence, self-esteem, and skills only were excluded. Studies were also excluded if they were treatment programs or were designed for specific adolescent subgroups (eg, overweight teenagers) because the authors were interested in preventive approaches.

Selection Process

All search results retrieved were exported into an EndNote X7.1 Library (Thomson Reuters, Toronto, Canada, 2014) for eligibility screening. The review followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses systematic review process.[13] The first author initially screened all titles and abstracts independently to identify and remove duplicates. In addition, the first author screened and coded all remaining titles and abstracts according to the inclusion criteria. Ineligible articles were removed and their reason for exclusion (not a study or randomized control study; not the correct population of adolescents aged 10–19 years living in developed countries; not a multi-strategy nutrition education intervention in schools; or not the correct outcome measures) was noted. The coauthors independently screened a 10% sample of the remaining titles and abstracts. Any discrepancies were resolved among the 3 reviewers via discussion to ensure consistency (Figure). In addition, citation searching was undertaken on reference lists of articles that were included in the review after titles and abstracts were screened.

Data Extraction and Analysis

Full copies of all studies included for further review were retrieved and assessed according to the selection criteria by the first author. When only abstracts were available, the corresponding authors were contacted for full data. Two authors independently conducted systematic data extraction for all included studies. All data extraction was cross-checked and differences were discussed until consensus was reached by all authors. When available, extracted data included author name, journal, year of publication, study aims and location, participant and study characteristics, nutrition education intervention characteristics, outcome measures, and key findings (Table 1).

Because of the diversity of outcome measures, meta-analyses of the results were not attempted. The data synthesis was based on content analysis, "an observational research method that is used to systematically evaluate the symbolic content of all forms of recorded communications."[14] Studies reporting at least 1 statistically significant result were identified and included in the content analysis. Tables 2 and 3 list intervention characteristics that were consistent with those previously identified as essential to the provision of effective nutrition education for adolescents. The frequency of intervention characteristics was calculated and analyzed according to whether anthropometric or dietary intake changes were observed. Outcomes were included in the content analysis only if they reported a statistically significant value ($P < .05$ unless otherwise specified by the study) or stated that the results were statistically significant.[14] For example, all 3 studies that showed statistically significant impacts on BMI or BMI z score involved parents and the nutrition education was facilitated by school teachers or staff (Tables 2 and 3).

Quality Assessment

Two authors conducted quality assessment of all included studies independently using a validated quality criteria checklist for primary research.[15] The checklist followed a yes–no question structure; it included 4 relevance questions to address applicability to practice and 10 validity questions to address scientific soundness. Any variations were discussed and resolved by consensus between the authors. Through the use of the checklist each study was classified as positive (≥6 yes), neutral (4–5 yes), or negative (0–4 yes) (Table 1) as per instructions. Studies with a positive or neutral rating were included in the synthesis.

RESULTS

A total of 8,616 articles were retrieved by the database search and 3 from the hand search (Figure); 224 articles were retrieved for full text review. The researchers excluded 6,785 articles because they: (1) were not a study or randomized control study (n = 2,548); (2) were not conducted in adolescent populations in developed countries (n = 2,833); (3) were not a multi-strategy nutrition education intervention (n = 1,350); or (4) did not report on anthropometric, biochemical, or dietary intake measures (n = 54). Thirteen articles met the selection criteria. The most frequent reasons articles were excluded in the second pass were that: (1) the study was not conducted in a developed country or focused on primary school children aged <10 years (n = 89), (2) the study was not of randomized control design (n = 43), (3) the study intervention did not include a school-based multi-strategy nutrition education intervention (n = 64), and (4) the study did not report on anthropometric or dietary intake outcome measures (n = 15).

The 13 articles reported on 11 different studies (Table 1).[16-28] Participant numbers ranged from 191[25] to 3,503[17] and included adolescents aged 10[28] to 18 years.[26] All multi-strategy approaches involved the school environment.

The majority of studies were conducted in European countries including Belgium (n = 1),[21,22] Greece (n = 1),[25] Finland (n = 1),[23] Norway (n = 2),[16,18] and Sweden (n = 1).[27] One study was conducted across Norway, Spain, and The Netherlands.[28] The remaining 4 studies were conducted in the US (n = 2)[17,24] and Australia (n = 2).[19,27] Of the 11 studies, 9 were rated as positive[17,19-28] and 2 were neutral.[16,18] Statistically significant results were reported in 10 of the included studies according to the results of the content analysis (Tables 2 and 3).[17-28]

Table 1. Studies Included in Systematic Literature Review

Author, Year	Theoretical Basis; Quality	Participant Characteristics (Sample Size), Country	Intervention Characteristics	Outcome Measures; Follow-Up	Results
Bere et al, 2005[16]	SCT; neutral	Sixth graders (n = 369), Norway	Classroom component: 7 sessions (3 45-min lessons) over 7 mo were facilitated by home economics teachers. Teachers were encouraged to include topics including recommended dietary intake and health benefits of eating FV into the regular curriculum. Small-group activities included taste testing, food preparation, and general information about FV use and availability. Parental component: Meetings were held to inform parents about the project. Six themed newsletters were distributed (berries; vegetables; fruits; potatoes; salads; and fruits, berries, and vegetables) that included health-related information, recipes, and activities for parents to do with their children. School fruit program: National FV subscription program in Norway. Parents paid about €0.30/d/child for a piece of fruit or a carrot each school day at participating schools.	Changes to FV intake; upon completion and 1 y after intervention	No statistically significant effect of intervention was observed on FV intake upon program completion or 1 y after intervention
Birnbaum et al, 2002[17]	SCT; positive	Seventh graders (n = 3,503), US	Students were allocated to 1 of 4 exposure groups: (1) control (lowest exposure), (2) school environment intervention only, (3) classroom curriculum plus school environment intervention, or (4) peer leaders plus classroom curriculum plus school environment intervention (highest exposure). Classroom curriculum intervention: 10 nutrition education lessons facilitated by regular classroom teacher with assistance of trained peer leaders, on self-monitoring, goal setting, hands-on snack preparation, skills for choosing healthy foods, and overcoming barriers to making healthful choices. 3 Parent Packs were distributed that included newsletters with lead articles on how parents could help their children	Changes to FV and fat intake; immediately after intervention	Significant increase in FV intake at follow-up in peer leaders group compared with classroom curriculum plus school environment group ($P = .01$) No significant changes in control group or school environment intervention–only group Significant increase in food choice scores (indicative of making lower-fat choices) in peer leaders plus classroom room curriculum plus school environment exposure group ($P = .002$) and classroom

			eat more FV and reduce fat, behavioral tips, and quizzes. Families received a $10 gift certificate if they completed 10 behavioral activities such as Serve a fruit or vegetable with dinner tonight. School environment intervention: 6 of the 8 intervention schools developed a school nutrition advisory council consisting of school staff, parents, and students to develop policies to limit sweets and nonnutritious foods as rewards for students and increase availability of fruits, vegetables, and lower-fat foods at school events. Activities included increased availability and taste testing of healthy options, displaying posters and table tents in the lunchroom, and vending machines comparing fat and sugar in snack choices. Peer leaders intervention: Students were elected by their peers and assisted teachers to deliver classroom interventions by leading small-group activities and discussions. Students received full-day training giving hands-on practice in leading intervention activities and problem-solving activities in small groups.		curriculum plus school environment group ($P < .001$) No significant changes in food choice scores for control group ($P = .49$) or school environment intervention–only group ($P = .06$)
Bjelland et al, 2011[18]	Not stated; neutral	Sixth graders (n = 1,465), Norway	5 monthly lessons were covering 5 topics: diet and physical activity, meals, 5-A-Day, sugar-rich beverages, your choice. Children brought FV from home for weekly FV breaks in class. Physical activity breaks were conducted in classrooms and sports equipment was provided at recess. Active transport was also encouraged by physical education teachers. Posters were displayed and parent fact sheets/brochures were distributed targeting behaviors and topics such as Cutting fruit and vegetables and Meals—a value worth fighting for.	Changes to SSB intake; mid-interventions at 8 mo	Significantly less SSB consumed on weekends by IG girls than CG girls ($P = .004$) No significant effects observed in boys
Dewar et al, 2013[19]	SCT; positive	Female eighth graders (n = 237), Australia	Teachers facilitated the program with the assistance of the research team. Participants were sent text messages weekly throughout the second and third terms and biweekly throughout the fourth term to reinforce targeted behaviors.	Changes in BMI and % body fat; 12 mo after intervention	No significant change observed at 24 mo in BMI in CG or IG (P not reported) Significant group × time interaction for percent body fat in favor of IG after 24 mo ($P = .006$)

(continued)

Table 1. Continued

Author, Year	Theoretical Basis; Quality	Participant Characteristics (Sample Size), Country	Intervention Characteristics	Outcome Measures; Follow-Up	Results
			Nutrition education intervention: 3 practical nutrition workshops were facilitated by accredited practicing dietitians on the benefits of healthy eating as well as key behavioral messages to assist students in becoming confident in selecting, preparing, and consuming healthy low-cost food. Physical activity intervention: Enhanced school sport sessions included a 10- to 15-min education session facilitated by teachers and lunchtime sessions. Pedometers and handbooks were provided to all students for self-monitoring. Parent involvement: 4 newsletters were distributed throughout the study period.		
Foster et al, 2008[20]	Not stated; positive	Fourth through sixth graders (n = 844), US	School self-assessment: Schools completed the Centers for Disease Control and Prevention School Health Index and formed advisory groups including administrators, teachers, nurses, coaches, and parents. Advisory groups developed action plans. Staff training: Staff offered 10 h of nutrition education training per year and received curricula and supporting materials with theme packets designed to integrate classroom lessons with cafeteria promotions and parent interventions. Nutrition education: Schools aimed to provide 50 h of food and nutrition education per student per school year and integrated education across classroom subjects to show how food choices and physical activity are tied to personal behavior, individual health, and the environment. Nutrition policy: All soda, chips, and other drinks and snacks sold in vending machines and à la carte in the cafeteria were removed and	Changes in BMI and changes in energy, fat, and FV intake; end of first and second year of program	Significantly fewer children in IS (7.5%) than in CS (14.9%) became overweight after 2 y ($P < .001$) After controlling for gender, age, and race/ethnicity, the predicted odds of incidence of overweight were approximately 33% lower for the IG ($P < .05$) At 2 y: odds of overweight and obesity were approximately 15% lower for the IG ($P < .05$) After controlling for gender, age, race/ethnicity, and baseline prevalence, the predicted odds of overweight prevalence were 35% lower in the IG ($P \leq .001$). No differences between IS and CS in prevalence of obesity No significant difference between IS (10.7%) and CS (7.6%) with

			replaced with items that met the Dietary Guidelines for Americans. Social marketing: Raffle tickets were offered to students who purchased healthy snacks and beverages or brought in snack items from home that met nutritional standards. Prizes included bicycles, indoor basketball hoops, jump ropes, and calculators. Easily recognizable characters were paired with sayings or slogans designed by students to reinforce messages. Parent/family involvement: Parents were invited to school association meetings, report card nights, parent education meetings, and weekly nutrition workshops. Unhealthy parent fundraisers were discouraged. Parents were encouraged to assist their children with the 2-1-5 challenge (to participate in < 2 h/d of sedentary activity, participate in > 1 h/d of physical activity, and eat > 5 servings/d of FV).		respect to the remission of overweight ($P = .40$) or rates of obesity ($P = .50$). Odds of remission of overweight or obesity were significantly higher for the IG ($P < .01$) There were no significant differences in dietary intake
Haerens et al, 2006[21]	TPB; positive	Seventh and eighth graders (n = 2,287), Belgium	School staff facilitated the intervention under the guidance of research staff. Working group: Composed of the principal, physical education teacher, and other teachers to oversee implementation. Nutrition intervention: Focused on 3 behavioral changes: (1) increase fruit consumption to at least 2 pieces per day, (2) reduce soft drink consumption and increase water consumption to 1.5 L/d, and (3) reduce fat intake. Schools were asked to sell fruit at school at very low prices or for free at least once per week and provided free water from drinking fountains or at lower prices than soft drinks. Children received information through folders and posters about health benefits of consuming fruit and water instead of snack items and soft drinks. Children used a computer-tailored intervention to learn about fat and fruit intake. Teachers were encouraged to organize healthy breakfasts and educational games in addition to developing extra activities to support the intervention. Parent involvement: Parents attended interactive meetings on healthy food, physical activity, and	Changes in fat, fruit, water, and soft drink intake; end of second year of program	No significant intervention effects on eating behaviors were found as a result of the second intervention year No significant differences in fat intake in girls were observed between the IG with parental support and the intervention-alone group ($P = .60$) as a result of the second intervention year No significant 2-y post-baseline intervention effects on eating behaviors in boys were found Significantly higher decreases in IG girls' fat (20 vs 10 g; $P < .05$) and percent energy from fat compared with CG girls (9% vs 5%; $P < .001$) were observed 2 y after baseline

(continued)

Table 1. Continued

Author, Year	Theoretical Basis; Quality	Participant Characteristics (Sample Size), Country	Intervention Characteristics	Outcome Measures; Follow-Up	Results
			the relationship with overweight and health. Information was distributed in school papers and newsletters 3 times per year. Parents received a free CD with the adult computer-tailored intervention on fat intake. Physical activity intervention: Schools were encouraged to create more varied opportunities for physical activity during breaks, at noon, and after school. Schools were provided with extra sports materials (ropes, balls, and beach ball sets) and encouraged to encourage active transport. Students completed a personal computer-tailored intervention to measure physical activity levels once per year.		
Haerens et al, 2007[22]	TPB; positive	Seventh and eighth graders (n = 2,840), Belgium	Intervention replicates study of Haerens et al (2006)	Changes in fat, fruit, water, and soft drink intake; end of first year of program	No significant increases in self-reported fruit intake and water consumption or positive effects on soft drink consumption (*P* not reported) Significant decrease in fat intake and percent energy from fat in girls of the IG with parental support compared with the IG alone ($P < .005$) or CG ($P < .001$)
Hoppu et al, 2010[23]	SCT; positive	Eighth graders (n = 659), Finland	Food environment: Target groups were headmasters, teachers, and school catering personnel. Drama workshops covered topics of eating and school meals. Discussions and information sessions were held with school personnel to discuss how they could improve school food environments. Parents received a magazine covering healthy eating topics and attended meetings where a school meal and information on the school intervention were provided. Vending machines containing sweets and soft	Changes in sucrose, fiber, FV intake; immediately after intervention	Significant increase in rye bread consumption of IS girls compared with the CS girls ($P = .03$) and significant decrease in sweets consumption ($P = .006$) No significant differences between IS and CS boys in rye bread or sweets consumption Daily consumption of vegetables decreased among boys but not

			drinks were removed and fresh bread and snacks for sale in selected schools were improved to include sandwiches, fruit, and milk instead of sweet cakes. Nutritional education: Implemented by teachers during lessons using posters, pictures of typical snacks, informative brochures, games, and tests covering topics such as sugar, FV, and fiber. Teachers were offered ready-planned lessons and were encouraged to use these materials during their normal lessons.		girls in both the IS and CS (results not significant) Fruit consumption remained stable in IS boys and decreased among CS boys (results not significant) Significant decrease in sweet consumption in IS girls compared with CS girls ($P = .03$) Sugary soft drink consumption remained constant among IS boys but increased significantly in CG boys ($P = .02$) No differences in consumption of bread and fruit as snacks between CS and IS IS consumption of fruits remained constant (when energy-adjusted) whereas consumption decreased significantly in CS ($P = .04$) Sucrose intake in IS fell significantly from 12.8% to 10.5% of total energy intake ($P = .01$) Folate intake increased significantly in IS ($P = .04$)
Lytle et al, 2004[24]	SCT; positive	Seventh and eighth graders (n = 2,883), US	Intervention replicates study of Birnbaum et al. (2002)	Changes to FV and fat intake; 1 y after intervention completion	IS students had slightly higher food choice scores indicative of making lower-fat choices (6.15 vs 5.78; confidence interval [CI], 0.038–0.713) Significantly higher food choice scores were found among high-dose students (6.38), low-dose students (5.84; CI, 0.16–0.93), and control students (5.89; CI, 0.19–0.80). No significant changes in FV intake were observed in CS or IS
Mihas et al, 2009[25]	SCT; positive	12- and 13-y-olds (n = 191), Greece	Classroom component: Facilitated by home economics teachers supervised by a health visitor or family doctor. 12 h of classroom material in 12 wk adapted from American Health	Changes in dietary intake and BMI; 15 d and 12 mo after intervention	Short-term (15-d) effects: Significant decrease in daily energy intake ($P < .001$), red meat consumption ($P = .03$),

(continued)

Table 1. Continued

Author, Year	Theoretical Basis; Quality	Participant Characteristics (Sample Size), Country	Intervention Characteristics	Outcome Measures; Follow-Up	Results
			Foundation *Know Your Body* program and health promotion activities and materials developed by the Greek Ministry of Education and the National Foundation for the Youth. Classroom modules aimed to develop behavioral capability, expectations, and self-efficacy for healthy eating and foods selection. Teachers participated in 2 3-h seminars to familiarize them with the objectives of the program and their roles and increase awareness of the significance of incorporating health and nutrition into curriculum. Parental component: Parents of IG participants attended 2 meetings and received files containing their child's baseline results and information related to the dietary habits of children to prevent the development of chronic diseases. Parents of CG participants received an envelope (via postal mail) with all medical screening results for their child in addition to some brief comments. CG parents did not receive health education and no parental educational sessions took place.		total fat ($P < .001$), and saturated fat ($P < .001$) in the IG Significant increase in daily consumption of protein in the IG ($P < .001$) No significant differences in the CG in energy intake or nutrient components Significant increases in weekly consumption of poultry ($P = .04$), ready-to-eat breakfast cereals ($P = .005$), and fruit ($P = .04$) in the IG No significant difference in consumption frequencies observed in the CG No significant changes in BMI in IG (23.9 vs 24.0; $P = 0.50$) or CG (24.5 vs 24.3; $P = 0.23$) Long-term (12-mo) effects: Significant decrease in daily energy intake compared with baseline in IG ($P = .05$) Significantly lower total fat ($P < .001$) and saturated fat ($P < .001$) intake and higher protein intake ($P < .001$) than at baseline in IG Significant increase in daily monounsaturated fat intake in the CG ($P = .002$). No other significant differences in energy or nutrient intake Significant increase in poultry ($P = .03$), ready-to-eat breakfast cereals ($P = .001$),

					and fruit ($P = .05$) consumed weekly than at baseline in IG Significant decrease in weekly consumption of red meat ($P = .02$) and non-homemade meals in IG ($P = .02$) No significant differences were found in the frequency of consumption of any food categories for the CG Mean BMI decreased significantly in the IG from baseline (23.3 vs 24.0; $P < .001$) but not in the CG (24.8 vs 24.3; $P = .36$)
Millar et al, 2011[28]	Community-based capacity building approach; positive	12- to 18-y-olds (n = 2,054), Australia	Education implemented by school project officers within multisite community intervention with 10 overall objectives. Objectives and key strategies related to nutrition education: to decrease the consumption of high-sugar drinks significantly and to promote the consumption of water through school canteen and vending machine policies, curriculum activities, and parent information; to increase the proportion of young people eating breakfast significantly through parent information and promotion of time management skills for young people; to increase FV consumption significantly through canteen availability and pricing of FV, programs and activities, and parent information about FV; and to increase the healthiness of school food significantly through school food policies and canteen availability, promotion, and pricing. Programs and activities included breakfast programs, one-off healthy eating days, sweet drinks displays, and a parent evening with a leading nutritionist. Infrastructure and equipment changes included installation of new water foundations, construction of vegetable gardens, reduction or removal of vending machines, as well as the introduction of whole-school food and water policies.	Changes in dietary intake and BMI; 12 mo after intervention	IG gained significantly less weight (740 g; $P = .04$) and less BMI z score (0.08 units; $P = .03$) than did students in the CG (when clustered by school) No significant differences or improvements in breakfast consumption, home lunches, or FV consumption; or limiting soft drinks, cordials or snack foods, observed for intervention students over comparison students (results not reported)

(continued)

Table 1. Continued

Author, Year	Theoretical Basis; Quality	Participant Characteristics (Sample Size), Country	Intervention Characteristics	Outcome Measures; Follow-Up	Results
			Physical activity initiatives included school physical activity policies, school walking programs, lunch programs, parent education sessions, and partnering with local sporting clubs.		
Prell et al, 2005[27]	TPB; positive	Eighth graders (n = 228), Sweden	IS eighth graders received more fish in canteen lunches and some received additional home economics classes focused on fish consumption. School lunch component: Intervention focused on the preparation and appearance of fish meals, extending choices and marketing. Canteen personnel were trained to provide additional fish dishes, either smoked mackerel or pickled herring, and improved accompaniment variety. School lunchroom was decorated with fish-related objects. Home economics component: 5 classroom cooking experiences instead of the usual 3 were implemented on topics including: cooking fish dish voted for by the pupils, nutrition and fish, how to fillet fish, and cooking fish.	Changes in fish intake; immediately after intervention	Significantly more SL + HE group tasted and/or ate fish after intervention compared with CG (results not reported) SL + HE group did not differ significantly from SL group Proportion of eaters in the SL + HE group increased from 56% at baseline to 71% at follow-up. In the SL group eaters increased from 59% to 69%. In the CG there was a decrease from 77% to 69% At baseline, for boys, 4% were non-eaters, 20% were tasters, and 76% were eaters. For girls, 4% were non-eaters, 42% were tasters, and 54% were eaters. This difference was significant ($P < .01$)
Te Velde et al, 2008[28]	Not stated; positive	Fifth and sixth graders (n = 1,472), Norway, Spain, and The Netherlands	16 lessons guided by worksheets and a Web-based computer-tailored feedback tool were facilitated by teachers. Parental component: Parents were encouraged to become involved in homework assignments and received newsletters and a modified version of the Web-based computer-tailored tool to provide parents with personalized feedback on their own FV intake. School FV program: In Norway children from both IGs and CGs were invited to participate in a national FV subscription program to receive a	Changes in FV intake; immediately after intervention and 12 mo after intervention	First follow-up: A significant increase in intake was observed for IG consuming 56.8 g/d more FV than the CG ITT analysis showed a significant intervention effect in The Netherlands for total FV intake and total fruit intake alone during school hours and for the combined Norwegian and Spanish sample outside school hours (results not shown)

							piece of fruit or a carrot during lunch or fruit break each school day. Parents paid a fee for this program. In The Netherlands all IS participants received a piece of fruit, a carrot, or a tomato for free 2 d/wk. In Spain IS participants received fruit for free during the first 2 mo of the intervention. Optional component: In The Netherlands and Norway local media were used to raise awareness, and in Spain school health services counseled students during their regular health visits.	Second follow-up: At the second follow-up the intervention effect differed by country. Significant effects were not observed in Spain or The Netherlands In Norway the intervention effect was significantly higher than at the first follow-up for total FV intake ($P = .04$) and total fruit intake alone ($P = .002$) ITT analysis showed a significant intervention effect in The Netherlands for total FV intake and total fruit intake alone at the first follow-up during school hours (results not shown) ITT analysis showed a significant intervention effect on intake at school in Norway only and outside school hours of the combined Norwegian and Spanish sample (results not shown)

BMI indicates body mass index; CG, control group; CS, control school; FV, fruit and vegetable; HE, home economics; IG, intervention group; IS, intervention schools; ITT, intention to treat; SCT, Social Cognitive Theory; SL, school lunch; SSB, sugar-sweetened beverage, TPB, Theory of Planned Behavior.

Characteristics of Nutrition Education Delivered in Included Studies

The nutrition education component of the 10 studies reporting significant results varied. The number and duration of nutrition education sessions varied. This included 3 interactive workshops with dietitians in a study conducted with girls in Australia;[19] 16 lessons in a study focusing on fruit and vegetable consumption across Spain, The Netherlands, and Norway;[28] 12 hours of classroom activities over 12 weeks;[25] and 50 hours/student/school year.[20] Three studies did not stipulate the number of sessions or time dedicated to the provision of nutrition education.[21-23,26]

Nutrition education was delivered by school staff and teachers in 9 of the 10 studies. Accredited dietitians facilitated the interactive workshops conducted in the study with girls in Australia with the assistance of classroom teachers.[19] Home economics teachers were identified as the key facilitators in 3 studies.[16,25,27] Trained student peer leaders were also used in 1 study in which eighth-grade students assisted with seventh-grade lessons.[17,24]

This review identified 3 studies that involved the use of technology. Dewar et al[19] sent text messages to participants throughout the duration of the study. Haerens et al[21,22] used an in-class, computer-tailored intervention to focus on fat and fruit intake, and Te Velde et al[28] incorporated a Web-based, computer-tailored feedback tool for students. Four studies incorporated physical education programs and activities.[18,19,21,22,27] Two of those studies showed statistically significant changes in percent body fat or weight/BMI z scores in participants.[19,26]

Included studies focused on dietary behavior changes related to consumption of fruit and vegetables,[16,17,23,24,28] fruit consumption,[21,22] water consumption,[21,22] fish,[27] fat,[17,21,22,24] sugar-sweetened beverages,[18,21,22] fiber,[23] and sucrose.[23] Two studies investigated overall changes in dietary intake behaviors.[25,26] Several studies investigating changes in anthropometric measures also focused on nondietary behaviors such as engagement in physical activity (those results were not reported).[19,20,25,26]

Table 2. Content Analysis of Interventions Showing Statistically Significant Impacts on Anthropometric Measures

Intervention Strategies	Dewar et al[19]	Foster et al[20]	Mihas et al[25]	Millar et al[26]
Theory-based instructional strategies	X		X	X
Policies developed at school		X		X
Teachers/staff facilitating		X	X	X
Parental involvement	X	X	X	X
Changes in canteen, food supply, or vending machines		X		X
Program built into existing curriculum		X	X	
Use of peer leaders and instructors				
Incorporation of student self-assessments with personalized feedback			X	
Use of innovative multimedia technology tools	X			
Physical activity component	X			X

Significant dietary changes were reported regarding the consumption of fruit,[23,25,28] fruits and vegetables,[17,28] and fat.[17,21,22,24,25] Changes were seen most frequently when parental involvement and facilitation of nutrition education by teachers and staff were present and when changes were made in the school food environment in the canteen, food supply, or vending machines (Table 3).[17,18,21-25,27,28]

Parental involvement such as the provision of newsletters, fact sheets, meetings, and shared homework tasks was identified in 6 studies.[17,18,21-25,28] Other components that contributed included theory-based instructional strategies[17,21-25,27] and incorporating changes in the canteen, food supply, or vending machines.[17,21-24,27,28] No trends were noted based on the length of the follow-up period. Nonsignificant dietary changes in sugar-sweetened beverage consumption were reported in a number of studies,[18,21-23] with the exception of 1 study that showed a significant decrease in consumption by girls on weekends.[18] These interventions did not include the development of school-based food policies or the incorporation of student self-assessments with personalized feedback.

Multi-Strategy Factors Contributing to the Success of Interventions Revealed by the Content Analysis

Components of these multi-strategy interventions that appeared most frequently in studies showing statistically significant changes on anthropometric measures were incorporating parental involvement and having teachers (classroom or home economics) or school staff members facilitate nutrition education (Table 2). Other contributing factors included the use of theory-based instructional strategies,[19,25,26] incorporating policy changes within school settings, and including changes in canteens, food supply, and vending machines.[20,26] Combining nutrition education with physical activity programs was also a key contributing factor.[19,26]

Table 3. Content Analysis of Interventions Showing Statistically Significant Impacts on Dietary Intake Measures

Intervention Strategies	Bimbaum et al[17]	Bjelland et al[18]	Haerens et al[21]	Haerens et al[22]	Hoppu et al[23]	Lytle et al[24]	Mihas et al[25]	Prell et al[27]	Te Velde et al[28]
Theory-based instructional strategies	X		X	X	X	X	X	X	
Policies developed at school	X					X			
Teachers/staff facilitating	X	X	X	X	X	X	X	X	X
Parental involvement	X	X	X	X	X	X	X		X
Changes in canteen, food supply, or vending machines	X		X	X	X	X		X	X
Program built into existing curriculum					X		X	X	
Use of peer leaders and instructors	X					X			
Incorporation of student self-assessments with personalized feedback	X					X	X		X
Use of innovative multimedia technology tools			X	X					X
Physical activity component		X	X	X					

Social Cognitive Theory was identified as the basis for 3 of the interventions[17,23-25] and the Theory of Planned Behavior was used by 2 interventions.[21,22,27] Bjelland et al[18] and Te Velde et al[28] did not identify the use of theory-based instructional strategies. Environmental changes in the canteen, food supply, or vending machines were seen in 5 of 7 studies including that of Te Velde et al, in which students were provided with the opportunity to participate in a free fruit and vegetable program (The Netherlands) or a discounted fruit and vegetable program (Spain or Norway).[17,21-24,27,28] Other contributing factors included incorporating the intervention into the existing curriculum,[23,25,27] incorporating student self-assessment with personalized feedback,[17,24,25,28] and using innovative multimedia technology tools such as sending weekly text messages to students and interactive computer-tailored fat intake interventions that provided students with normative feedback on their dietary behaviors and tips and suggestions on how to decrease fat intake (Table 1).[19,21,22]

DISCUSSION

This review builds on and updates the most recent evidence of the impact of multi-strategy nutrition education interventions specifically in school-based adolescent populations in developed countries. It supports the findings of previous reviews in children and adolescents that multi-strategy nutrition interventions can have significant impacts on anthropometric measures and dietary intake and provides evidence to suggest that some strategies may have more of an impact than others specifically when working with adolescent populations.[5-7]

This review found 11 studies that were multi-strategy in design that resulted in a change in anthropometry and/or food-related behaviors. Of the additional program components previously described by Hoelscher et al,[5] 7 identified the use of a theoretical framework such as Social Cognitive Theory or the Theory of Planned Behavior for program design. Duration and intensity of the nutrition education component varied, along with educational strategies.

> Multi-strategy school-based nutrition education interventions can have an impact on anthropometric and dietary intake measures in adolescents.

The review by Hoelscher et al[5] proposed that program components such as the coordination of nutrition and physical education interventions and use of technology such as CD-ROMs would become increasing important and common in nutrition interventions aimed at adolescents. The current review identified 3 studies that included the use of technology,[19,21,22,28] 4 of which had coordinated nutrition and physical education interventions.[18,19,21,22,26] The findings also support the growing body of evidence related to the importance of whole-school approaches, which encompass a variety of strategies implemented within the curriculum and the overall school environment to affect students' health outcomes.[9,10]

A key strength of the current review was the high level of evidence and quality of the studies included. The overall review design also built on previous reviews specific to adolescents through its inclusion of articles published between 2000 and 2014 since the last review was published in this area. All of the included studies were of a randomized controlled trial design; 9 of the 11 studies were given a positive quality rating. Content analysis of the study results enabled synthesis of the most frequent interventions components that were significant in the included studies.[14] However, only studies published in peer-reviewed literature were included, which may have resulted in publication bias. Studies may have been eliminated if they did not describe a multi-strategy approach in the text but may have been of a multi-strategy design. The authors also acknowledge that studies were excluded from the content analysis if they did not show at least 1 statistically significant result at a nominal level ($P < .05$). Therefore, this may not reflect the potential clinical significance of studies that were both included and excluded from the analysis. The authors also acknowledge that included studies used a variety of measurement tools including subjective measures such as self-reported dietary intake. However, although their validity has been strongly questioned recently, they offer time- and cost-efficient methods in school-based interventions.[29,30]

> Behaviorally focused education delivered by teachers with parental involvement and school food setting changes are necessary components.

IMPLICATIONS FOR RESEARCH AND PRACTICE

This review updated the existing evidence base on multi-strategy nutrition interventions focused on adolescents. It adds to existing knowledge focusing solely on adolescents and evidence that shows improvements in anthropometric and dietary intake measures. Multi-strategy nutrition education interventions appear to have statistically significant impacts on anthropometric and dietary intake measures when they are behaviorally focused, inclusive of theory-based instructional strategies and parental involvement, and delivered by school staff members and teachers, and when changes are made to the school food setting where healthy choices become the easier choices for adolescents. Recognizing the role of combining nutrition education with other strategies to support dietary behavior change is recommended. Programs for adolescents require many key features already known for effective education in children despite the different social and environmental influences on adolescents' food related behaviors, but they must be

multi-strategy in their approach. Further research may explore the sustainability of multi-strategy approaches and their long-term impact on the health and nutritional intake of the adolescents they target as well as education that is independent of the school setting.

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SUPPLEMENTARY DATA

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.jneb.2016.07.015.

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CONFLICT OF INTEREST

The authors have not stated any conflicts of interest.

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3.3 What's new in the literature?

Since publication of this review there has been little additional evidence published on the factors or intervention characteristics that may contribute to effective multi-strategy nutrition education interventions. Murimi et al. (2017) conducted a review to identify factors associated with successful nutrition education interventions in children. Whilst the review included studies of children aged 2-19 years engaged in preschool, primary/elementary school and secondary school it identified that successful interventions engaged parents, identified specific behaviours to be modified, and included teacher training or recruitment of trained experts to deliver the intervention. These findings reiterated the importance of parental and teacher involvement in the delivery of nutrition education as identified in the review conducted for this PhD research. However Murimi et al. (2017) did not identify the presence of a theoretical framework or model in the nutrition education intervention as being a key factor.

Moreover in 2018 the Academy of Nutrition and Dietetics with the School Nutrition Association and Society for Nutrition Education and Behavior released a position statement that integrated and comprehensive nutrition programs are essential for students from preschool through to secondary school (Hayes et al., 2018). The position statement highlighted that nutrition education should be integrated in the school environment with provision of high quality food, the availability of healthy food choices, wellness policies and other food and nutrition related activities, both in the school and reinforced at home and in the community. In other words the statement reiterates the importance of multi-strategy nutrition education interventions to maximise impacts on child and adolescent health outcomes.

3.4 Reflexive quilting

As introduced in Chapter One to explore reflexivity I have chosen to weave reflexive quilting pieces throughout this thesis to reveal details of my journey as the researcher as I moved through this body of research. I also hope to engage the reader by shedding light on some of my interpretations of the data. In this chapter I will draw on my experience of using qualitative synthesis and my personal reflections on the results of the systematic literature review.

Due to the variety of outcomes measures included in the systematic literature review meta-analysis was not possible so I employed a qualitative synthesis approach. Although counting the

frequency of factors in the included studies did not elude to those that may be considered to be the 'most useful' this technique was surprisingly useful in highlighting 'patterns' that provided more of a reflection of the current literature and the factors that had been present in studies that revealed significant changes in anthropometric or dietary intake measures.

The review also changed my view of what was possible in health and wellbeing initiatives in secondary school settings. I was pleasantly surprised to find that parents *had* been involved and identified as playing a key part in studies where statistically significant anthropometric or dietary changes were observed. My personal experience and anecdotal evidence from friends and colleagues that have worked with secondary schools was that 'parents aren't involved!' The review findings were a complete contradiction. Granted the review only included 13 published studies and did not capture nutrition education programs possibly explored in grey literature, as already acknowledged in the review's limitations. However from my own experiences as a community based health promotion officer I know of the challenges and potentially limited opportunities to engage with universities and academics to pursue academic publications. This acted as a catalyst to motivate me to explore and publish the findings of this research in relation to the Achievement Program. As an emerging researcher I want to validate the efforts of my colleagues still working with schools in health promotion and community based public health nutrition roles.

3.5 Summary

The review found that school-based multi-strategy interventions encompassing nutrition education can have significant impacts on anthropometric and dietary intake measures. This was most apparent when the interventions were theoretically based, facilitated by teachers and school staff, involved parents and included changes in canteens, food supply and vending machines (Meiklejohn et al., 2016). These findings build on the existing evidence focussed on younger children (Chapter Two) and clearly identify the importance of multi-strategy obesity prevention interventions focussed on adolescents engaged in secondary schools. These findings also reiterated the importance of ensuring interventions are underpinned by a theoretical framework to optimise successful implementation. None of the included interventions were based upon the HPS framework. This therefore raised the question of why multi-strategy prevention interventions based upon the HPS framework are not more commonly implemented in secondary schools given the existing evidence. Whilst the review supported the existing

knowledge base of the importance and potential benefits of school based health and wellbeing initiatives, when exploring key intervention components the presence of school or local policies was not identified as of great importance (Meiklejohn et al., 2016). This is despite the existing evidence of the importance of policy to inform school based health and wellbeing activities. These questions informed the remainder of the research.

Chapter Four – Methodology

4.1 Introduction

This chapter outlines the methodology used across the three empirical studies of this thesis. Details of the philosophical underpinnings and methods used for each of the studies are described. The methods are presented in sequential order of how the three empirical studies were conducted. Chapters Five and Six present the first and second empirical studies conducted in this research respectively. Chapters Five and Six are presented as submitted manuscripts inclusive of methods sections. Whilst details of the methods are presented in those chapters they are also presented in this chapter in greater detail to show depth and connection between the studies. Chapter Seven presents the findings of the third study completed in this research. Unlike Chapters Five and Six, Chapter Seven is not presented as a submitted manuscript. This chapter has been presented as a traditional results chapter to allow for greater depth of reporting of the qualitative findings so does not include a methods section.

4.2 Epistemology and theoretical perspective

Crotty (1998) identifies four basic elements that inform one another in the research process: epistemology, theoretical perspective, methodology and methods. Epistemology and theoretical perspective will be discussed in this section. Methodology and methods will be explored later in Sections 4.3 and 4.4.

4.2.1 Epistemology – social constructionism

Epistemology deals with the nature of knowledge and provides a philosophical grounding for explaining how we know what we know (Crotty, 1998). This thesis is grounded in social constructionism, an epistemological stance which acknowledges that all knowledge and meaningful reality is dependent upon human contact (Crotty, 1998). Social constructionists believe that meaning is constructed, not created by people as they interact with the world they are interpreting (Crotty, 1998). These multiple interpretations or perspectives of the world result in various ways of knowing and believing in the world. Social constructionists therefore dismiss the notion of one truth or interpretation.

I chose to base this thesis in social constructionism as a central tenant of this thesis is the interpretation of policy. Whilst policies may exist and have been written by well-intentioned policymakers with a specific purpose, policy actions are based upon interpretations of policy by policy users. Policymakers and policy users will have different perspectives and interpretations of the intended outcomes of the policies, reinforcing the notion that there is no one true or valid interpretation of the world.

4.2.2 Theoretical perspective – Interpretivism

This thesis follows an interpretivist theoretical stance. Interpretivists believe knowledge is subjective, there are diverse interpretations of reality and therefore there is no one 'correct' way of knowing (Bunniss & Kelly, 2010). The methodology is characterised by the gathering of diverse interpretations, typically using various qualitative methods, to gain understanding. Interpretivism acknowledges that meaning is generated in researcher-participant interactions in the natural environment (Weaver & Olson, 2006). This aligns with my social constructionist epistemic stance in that together the epistemology and theoretical perspective seek to understand multiple meanings of policy through multiple perspectives. This theoretical stance also directly informs the research design and choice of an interpretive policy methodology, by encouraging exploration of multiple perspectives of the implementation of school based health and wellbeing initiatives based upon the HPS framework.

4.2.3 Internal coherence

Rees and Monrouxe (2010) proposed that by demonstrating alignment of theoretical perspectives, methodology and methods it is clear how research was conducted with rigour and integrity. This chapter aims to explain the links between these elements (Table 4.1).

Table 4.1: Research internal coherence

Epistemology
Social Constructionism
Theoretical perspective
Interpretivism
Methodology
Systematic literature review
Interpretive policy analysis
Data collection methods
Systematic review
Document retrieval and collation
Individual and group interviews
Drawings
Observations
Data analysis methods
Qualitative synthesis
Document analysis
Thematic analysis
Framework analysis

Internal coherence may also be demonstrated through the presentation of research findings and how they may be linked to the present research and the literature. My empirical research findings will be presented in Chapters Five, Six and Seven. Their links to the literature will be explored in Chapter Eight. The presentation of the research findings in this thesis will also substantiate the achievement of the overall aims of this PhD research and act as another indicator of internal coherence (Tracy, 2010).

So far in this section I have presented details related to the alignment of my epistemology and theoretical perspective. Details of my methodology will be presented in section 4.4 and of the data collection and analysis methods in section 4.5.

4.3 Study setting and context

As introduced in Chapter One, the Achievement Program commenced in secondary schools in Victoria, Australia in 2013. During 2012-2015 a health promotion workforce was funded in selected communities to support the Achievement Program implementation and progression (Clarke et al., 2018). Despite removal of the majority of funding for this workforce in 2015, the Achievement Program continues to be implemented across Victorian secondary schools. Progress and uptake of the Achievement Program and the experiences of secondary schools implementing the Achievement Program have not yet been explored.

As identified in Chapter Two, to truly understand the potential impacts of the Achievement Program on adolescent health and wellbeing outcomes understanding the role and influence of HPS related policies currently informing health and wellbeing practice in secondary schools and how these policies are translated in secondary schools is required. Understanding the design and implementation of the Achievement Program as intended by policymakers in order to explore if this is translated into practice in secondary schools is also needed. Interpreting the health and education policy environments in which secondary schools are operating will support understanding of the experiences of secondary schools engaged in the Achievement Program. Furthermore only once the Achievement Program policymaking process is understood can we hope to comprehend the role and potential influence of policy in supporting sustained implementation of the Achievement Program as a HPS approach.

The overarching aim of this research was to provide an in-depth exploration into the current policies and practices surrounding the design and implementation of school based approaches to health and wellbeing and nutrition initiatives based upon the HPS framework. The Achievement Program was used as an example in the context of this research.

4.4 Research methodology

This section provides an overview of the interpretive policy analysis approach applied in this research.

4.4.1 Approaches to policy analysis

Public policy analysis is still in its infancy. Understanding past policy failures and successes can assist in evaluating policy implementation and planning for future policy changes (Walt et al., 2008). There are many frameworks and theories which exist to assist policy analysts and policymakers. The role of policy analysts is to identify which framework best addresses their needs.

Some of the better known public policy frameworks include the Stages Heuristic framework (Brewer & Leon, 1983; Lasswell, 1956), Policy Triangle Framework (Walt & Gilson, 1994), Multiple Streams Theory (Kingdon, 1984) and Punctuated Equilibrium Theory (Baumgartner & Jones, 2010). These approaches to policy analysis suggest that public policy analysis should include analysis of the structural influences of time, the policymaking process and also consider

the decision making processes behind the policy development (Ham & Hill, 1993; Walt et al., 2008).

These traditional approaches are more closely aligned with a positivist-informed position. The underlining assumptions suggest that it is possible for policy analysts to make value-free and objective policy assessments from an external position. These approaches assume policy words and therefore policies are univocal and unambiguous (Yanow, 2000). As a result they may not provide clear analysis of the content of the policies or the potential meanings and interpretations by various policy stakeholders.

In this study redefining current government curriculum or policies within secondary schools was not the aim. Rather given the knowledge of the value of multi-strategy approaches to obesity prevention and nutrition education in schools, the aim was to explore how these policies were translated in practice. More specifically, exploration of what was written within the policies, how they are written, and what meaning or emphasis was given to supporting the implementation of policies based upon the HPS Framework was needed. Choosing a policy analysis approach that allowed for multiple interpretations was therefore required.

4.4.2 Interpretive policy analysis methodologies

Interpretive policy analysis methods accept that we live in a social world constructed by multiple interpretations and possibilities (Yanow, 2000). They assume it is not possible for policy analysts to stand outside of a policy issue free of their own values and beliefs. They believe that knowledge is acquired through interpretation by policy analysts as well as other policy stakeholders. Interpretive policy analysis methodologies are closely aligned with my social constructionism epistemology and interpretivist theoretical perspective. An interpretive policy analysis approach was therefore chosen to answer the research questions.

Interpretative policy analysis can be used in the study of public policy in order to focus on the meaning of policies, the values, feelings and beliefs they express, and on the process by which those meanings are communicated to and read by various audiences (Yanow, 2000). Interpretive approaches to policy analysis acknowledge that there can be various ways of focusing on policy analysis as a means of solving or providing solutions to a specific policy related 'problem'. Interpretive approaches acknowledge various ways of understanding and viewing the world and therefore policies. Examples of interpretive approaches include Bardach's eightfold path to policy analysis (Bardach, 2012), Rein and Schon's framing (Rein & Schon, 1996) and Yanow's interpretive approach (Yanow, 2000). These approaches are summarised in Table 4.3.

Table 4.2: Comparison of interpretive policy analysis approaches

	Underlining principles	Steps involved/ key questions or method of analysis	End product or outcome
Bardach (2012)	Focuses on policy analysis as a means of solving or providing solutions to a specific policy related 'problem'	Eight steps: 1) Define the problem, 2) Assemble some evidence, 3) Construct the alternatives, 4) Select the criteria, 5) Project the outcomes, 6) Confront the trade-offs, 7) Decide, 8) Tell the story.	May include a written narrative style report in which the problem needing mitigation is defined and followed by courses of action that might be taken to solve the problem
Rein and Schon (1996)	Is a way of selecting, organising, interpreting and making sense of a complex reality or process to act as a guidepost for knowing, analysing, persuading and acting.' Framing influences how individuals reorient their thinking about a particular issue	Two part process: 1) Identify 'rhetorical frames' to identify the policy process and seek broad interpretations of the issue, 2) Identify 'policy frames' to identify explicit commitments to a particular course of action.	A policy position which is accessible and understood by a range of stakeholders to inform policy making
Yanow (2000)	Focus on the meaning of policies, the values, feelings and beliefs they express and on the process by which those meanings are communicated to and read by various audiences	Incorporates elements of document analysis and key stakeholder interviews through three steps: 1) identification of communities of practice, groups of people who share a view of the policy under analysis, 2) identification of the specific artefacts through which these views are expressed, 3) mapping of the architecture of their similarities and differences with respect to the policy issue, presented in the way each group talks about the issue and their actions with respect to it.	To show the implications of different meanings/ interpretations for policy formulation and/or action, and to show that differences reflect different ways of seeing

In this research there was not the belief that there was a 'problem' with implementation of the HPS framework in secondary schools. This led me to believe that Bardach's approach to interpretive policy analysis was not appropriate to answer the research question. I was also not interested in the development of new policies so Rein and Schon's framing analysis was deemed inappropriate. Rather Yanow's policy analysis approach was employed to clarify the varying interpretations of HPS policy meanings made by different groups, as well as understanding the various elements through which these meanings were communicated.

4.4.3 Yanow's interpretive policy analysis

Yanow's approach invites practitioners to ask 'what are the meanings of a policy?' The approach builds upon the notion that policy implications are not always easily identified or transparent in its text (Yanow, 2007). Rather they are hidden conclusions that are 'warranted' in different ways by the assumptions of policymakers and 'multiple constituencies'. This requires policy analysts to identify stakeholders and 'policy artefacts' that determine how a policy, together with a policy process, is 'framed' or understood. This approach provides a qualitative approach to the group of primarily quantitative policy analysis techniques (Yanow, 2000). Yanow suggests that interpretive policy analysis explores "the contrasts between policy meanings as intended by policy makers – 'authored' texts – and the possibly variant and even incommensurable meanings – 'constructed' texts – made of them by other policy relevant groups" (Yanow, 2000, pp. 9). Yanow also suggests that what policy implementers do rather than what a policy explicitly says to do constitutes the true policy intent (Yanow, 2000).

The role of a policy analyst has also advanced past researching and providing policymakers with information related to a particular issue prior to policy decisions and acts. Evaluating policies following their introduction and evaluating related implementation activities is also key (Yanow, 2000). In this way a policy analyst's role may now focus on a policy's anticipated outcomes as well as its actual results. Yanow's approach to policy analysis therefore assumes that policy analysts work as advisers to policymakers, advocates for community groups and organisers, and as researchers (Yanow, 2000).

4.4.4 Application of Yanow's interpretive policy analysis approach

Yanow's interpretive policy analysis approach informed the design of all three studies in this PhD research. An overview of the three studies, including the primary aim, methodology and associated methods are presented in Table 4.2 below. The application of Yanow's interpretive policy analysis is represented visually in Figure 4.1 below. Ethics approval for all studies was obtained from the Monash University Human Research Ethics Committee (project approval ID: 6760) and DET (Application number 2017_003371) (Appendix 1).

Table 4.3 Overview of three studies' methodology and methods.

Study	Study One – Policies	Study Two – Policymakers	Study Three – Policy implementers
Research question/s	To what extent are government curriculum and health and wellbeing policies likely to support secondary schools to improve health and wellbeing using the HPS framework in Victoria, Australia?	What considerations underpinned policymakers' decisions for the design and implementation of a program based on the HPS framework in secondary schools?	How and why secondary schools are progressing through the Achievement Program? What factors are contributing to secondary schools achieving recognition as a 'health promoting school'?
Methodology		Interpretive policy analysis	
Data sources	Publically available government and curriculum policy documents	Policymakers	Secondary schools
Data collection methods	Document retrieval and collation	Individual and group interviews	Individual and group interviews Document retrieval and collation Drawings Observation
Data analysis methods	Document analysis	Thematic analysis	Framework analysis Document analysis

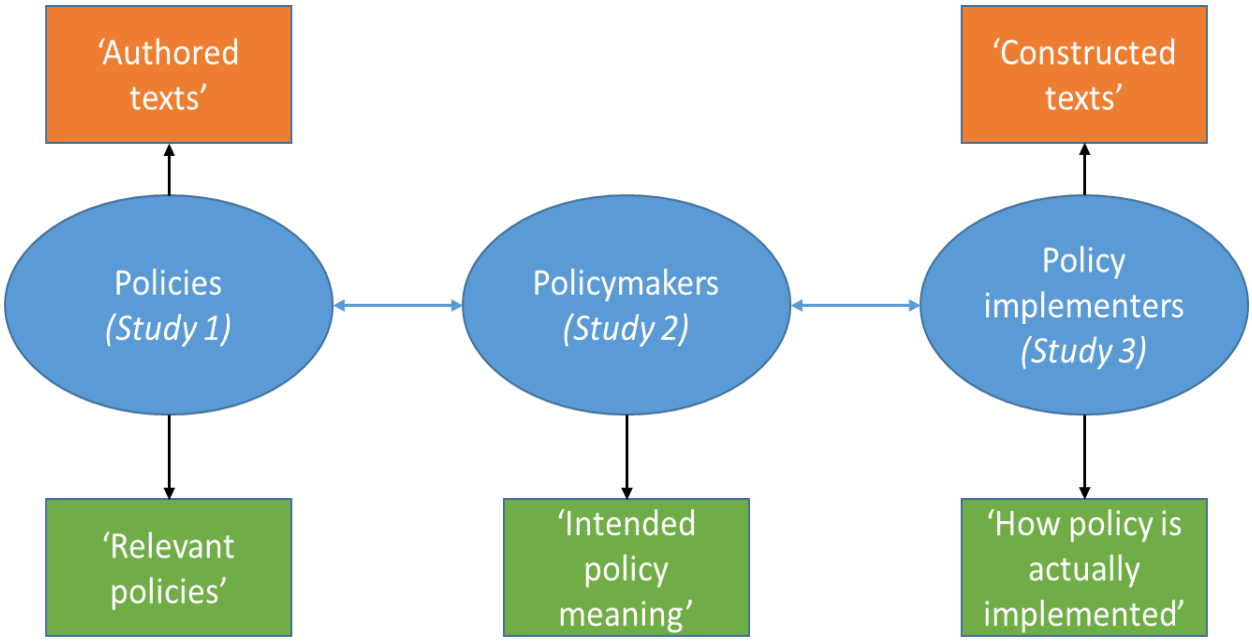

Figure 4.1: Visual representation of application of Yanow's interpretive policy analysis approach used in this research

4.4.4.1 Policies – Study One

As described above, Yanow suggests that interpretive policy analysis should include exploration of the policy meanings as intended by policymakers (Yanow, 2007). These meanings are communicated in 'authored texts', or 'policies'. Study One in this research aimed to explore these 'authored texts', the current government curriculum and health and wellbeing policies governing Victorian secondary schools (see Figure 4.1). More specifically the study was interested in exploring the policies for meaning and evidence of support for the delivery of health and wellbeing initiatives based upon the HPS framework.

The interpretive policy analysis approach supported an interpretation of how the policies guided secondary school curriculum and health and wellbeing staff. In addition, it enabled identification of how the HPS Framework was communicated in the documentation and discovered the possible meanings and interpretations of the policies.

This study used document analysis as the method in order to gain knowledge and understanding of how the HPS framework was framed and interpreted within the policy documents. Document analysis incorporates elements of content and thematic analysis (Bowen, 2009). Document analysis involves the examination and interpretation of data in order to elicit meaning, gain understanding and develop empirical knowledge (Bowen, 2009).

4.4.4.2 Policymakers – Study Two

Study Two followed on from Study One by exploring policymakers' intended meaning of the policies analysed in Study One. This study aimed to explore policymakers' intentions and considerations for implementation of the HPS framework through the Achievement Program as a policy response to increasing rates of overweight and obesity in Victoria.

Using Yanow's interpretive policy analysis enabled exploration of the key steps which underpinned the design and implementation of the HPS framework, nuanced through the Achievement Program. This enabled focusing on the stories told by the key policy stakeholders to clarify the various policy positions surrounding implementation of HPS framework and allowed for comparison across different versions of stories related to the policy design, structure and content (Yanow, 2000).

4.4.4.3 Policy implementers – Study Three

In Study Three policy implementers were identified as representatives from Victorian secondary schools that had successfully implemented the Achievement Program. Yanow (2000) suggests that interpretive policy analysis should include exploration of the variant meanings made of policies by policy relevant groups (other than the policymakers themselves). These are known as the 'constructed texts'. It also includes exploring what policy implementers actually do, or how policies are 'actually implemented' in order to understand what Yanow believes to be the 'true policy intent' (Yanow, 2000). Yanow's interpretive policy analysis enabled exploration of the experiences of secondary schools in implementing the HPS framework within the current political environment, including adhering to implementation of the government and curriculum policies analysed in Study One.

This study also drew upon aspects of Merriam's case study methodology framework to inform the study design, sampling and data collection methods (Merriam, 1998). This case study methodology identifies as case as a phenomenon occurring with a bounded system such as a policy, program or group such as a school. Unlike other case study approaches, Merriam's approach was most closely aligned with a constructionist epistemology, whereby there are multiple interpretations of reality constructed by individuals interacting in their social worlds (Merriam, 1998; Yazan, 2015). This approach was selected to support the interpretation through construction of reality from multiple perspectives. In this case the Achievement Program, within Victorian secondary schools, were selected as the case, to facilitate a concentrated and clearly bordered unit of analysis. The final product of case study is yet another interpretation by the researcher of others' views filtered through his or her own (Merriam, 1998).

4.5 Data collection and analysis methods

The data collection and analysis methods used in each of the empirical studies in this PhD research are summarised in Table 4.2 (see section 4.4.4) and are detailed in this section.

4.5.1 Study One – Policies

4.5.1.1 Data collection

Policy documents were retrieved and collated to explore how government curriculum and school based health and wellbeing policies support implementation of policies based upon the HPS framework.

Document retrieval and collation was used to explore to what extent government curriculum and health and wellbeing policies were likely to support secondary schools to improve health and wellbeing using the HPS framework in Victoria. This study represents the first part of Yanow's interpretive policy analysis approach focused on policies as 'authored' texts (see Figure 4.1).

When conducting policy analysis using documents, the literature suggests that the focus should be on the quality of the documents and the evidence they contain, keeping in mind the purpose and design of the study (Bowen, 2009). For the purposes of this research a policy was defined as 'a plan or set of guidelines which would influence the work of Victorian Secondary Schools in implementing programs based upon the HPS framework'. Curriculum and health and wellbeing policy documentation were therefore included in the analysis if they could offer knowledge and understanding in order to answer the research question.

The setting for the research was Victoria, Australia. Victoria was chosen as the setting for this study due to an influx of health promotion funding and government interventions in Victorian schools in 2012, described in Chapter Two (Clarke et al., 2018). A Parliamentary Inquiry into the potential for developing opportunities for schools to become a focus for promoting healthy community living was also conducted in 2009 by the Victorian State Government. The review provided a number of key recommendations including that (Parliament of Victoria, 2010, pp. xvii-xviii):

1. "the Department of Education and Early Childhood Development, in consultation with the Department of Health, review the development and implementation of the health promoting schools approach in Victorian schools"
2. "the Department of Education and Early Childhood Development, in consultation with the Department of Health, develop and promote a comprehensive suite of practical resources to assist schools seeking to apply the health promoting schools process"
3. "the Department of Education and Early Childhood Development establish a comprehensive professional development program for teachers and school leaders to develop the advanced knowledge and skills required to plan, implement and evaluate school-based health promotion initiatives."

This context provided key impetus to explore the policy context in more detail relating to the development and implementation of a HPS approach.

4.5.1.1.1 Inclusion and Exclusion criteria

Documents were therefore included if they were either:

1. Current curriculum documentation related to learning areas where health and wellbeing was covered – health and physical education and technologies – at state and national level, or
2. Current Victorian DET policy guidelines related to or outlining the delivering of health and wellbeing initiatives in secondary schools

Documents were excluded from the analysis if they were either:

1. Not current curriculum documents or were not documents used to inform the health and wellbeing policies used by secondary schools in Victoria, or
2. Documents related to curriculum for Senior Secondary School Years 11 and 12. These documents were removed from the analysis due to the elective nature of the Year 11 and 12 programs in Victoria and Australia. Whilst health and wellbeing policy documents encompass all Australian school students up to Year 12, the researchers did not include curriculum outlines for Years 11 and 12 as they fall outside of the standardised Australian and Victorian Curriculum 'Foundation to Year 10 curriculum'. In Victoria specifically, the senior secondary curriculum for Year 11 and 12 is based upon students making individual subject selections with the minimum requirement to receive a Victorian Certificate of Education being satisfactory completion of 16 units, with three units from the English group, of which as least one unit was at Unit 3 or 4 (Year 12) level (Victorian Curriculum and Assessment Authority, 2018).

4.5.1.1.2 Document sample

A purposive and theoretical sample of six curriculum and health and wellbeing policy documents were included in the analysis (total pages n = 322). Purposive sampling enabled the selection of specific documents due to the crucial information they could provide to the analysis. Theoretical sampling supported in-depth exploration of policy focussed on health and wellbeing, inclusive of nutrition and physical activity (Liamputtong, 2013). An iterative approach to document selection was used, whereby the documents listed or referenced by an included document were considered for inclusion against the inclusion and exclusion criteria described above. Table 4.4 provides a summary of the documents included.

Table 4.4: Description of policy documents included in Study One

Document Title	Description
DEECD Plan for Health and Wellbeing – September 2014 (DEECD, 2014a)	• 'Wellbeing' was identified in the DEECD 2013-2017 Strategic Plan as one of four areas in which the DEECD wants to achieve world-leading outcomes. • This document outlines the DEECD's coordinated reform agenda and action plan to establish a stronger system for supporting health and wellbeing of children and young people in education, training, development and child health services. • This plan outlines how the DEECD proposed to improve the effectiveness of the health and wellbeing services that are provided within education settings.
DEECD Principles for health and wellbeing – Underpinning effective professional practice across DEECD services (DEECD, 2014b)	• The DEECD has previously identified its shared role in the healthy development and education of a whole person and the importance of health as a precondition for learning and employment. • This document outlines the DEECD's commitment to health and wellbeing and its principles of health and wellbeing. • This document was designed to provide services with support for training, joint planning, priority setting, service improvement, innovation and the development of common practices whilst offering a common language and approach to developing an education system in which health and wellbeing is embedded.
ACARA The Australian Curriculum – Design and Technologies and Digital Technologies, Years 7 – 10, Version 8.2 (ACARA, 2016a)	• This curriculum document was the most up to date version of the 'Design and Technologies and Digital Technologies' curriculum available at the time of the research. • The learning area document was included as it outlines the key curriculum expectations for all Australian students in Years 7 – 10 in this area which includes some health and wellbeing topics and content related to food and is commonly integrated with delivery of the 'Health and Physical Education' curriculum in secondary schools.
ACARA The Australian Curriculum – Health and Physical Education, Years 7 – 10, Version 8.2 (ACARA, 2016b)	• Version 8.2 of the Australian Curriculum was the most recently endorsed by the Australian Education Ministers at the time of the research. • The 'Health and Physical Education' learning area document was included as it outlines the key curriculum expectations for all Australian students in Years 7 – 10 and is the curriculum learning area where health and wellbeing topics are prioritised and most commonly delivered.
VCAA – The Victorian Curriculum – Design and Technologies and Digital Technologies, Years 7 – 10, Version dated 2016 (VCAA, 2016a)	• This curriculum document was the most up to date version of the 'Design and Technologies and Digital Technologies' curriculum for implementation in Victorian schools at the time of the research and was based upon by the Australian Curriculum. • The 'Design and Technologies and Digital Technologies' learning area document was included as health and wellbeing topics and content related to food are covered in this learning area and are integrated with delivery of the 'Health and Physical Education' curriculum in secondary schools.
VCAA – The Victorian Curriculum – Health and Physical Education, Years 7 – 10, Version	• This curriculum document was the most up to date version of the 'Health and Physical Education' curriculum for implementation in Victorian schools at the time of the research and is based upon by the Australian Curriculum.

dated 2016 (VCAA, 2016b)	• The 'Health and Physical Education' learning area document was included as the majority of topics and content related to health and wellbeing are covered in this learning area.

Abbreviations: ACARA – Australian Curriculum, Assessment and Reporting Authority; DEECD – Department of Education and Early Childhood Development; VCAA – Victorian Curriculum and Assessment Authority.

4.5.1.2 Data analysis

4.5.1.2.1 Document analysis

Curriculum and health and wellbeing documents were loaded into NVivo 11 (QSR International, 2016) software for coding. Thematic analysis was conducted to explore how, where, in what contexts and possible meanings the HPS framework was described.

Thematic analysis of the six documents employed a constant comparison approach informed by Pope *et al*.'s five stages of qualitative analysis (Pope et al., 2000). This included: 1) familiarising oneself with the data, 2) identification of a thematic framework, 3) applying the thematic framework to the data, 4) rearranging the data to form abstract concepts, and 5) interpreting the data. This process was selected as it enabled identification of concepts and themes across the various documents to ensure that all possible meanings, interpretations or references within the documents to the HPS framework were captured. This process has been used previously in public health policy document analysis (Thuraisingam et al., 2009).

I firstly engaged in *familiarisation* of the documents and their accompanying references to ensure I completely understood the included documents. Open coding was then conducted on two of the included curriculum documents and one of the health and wellbeing policy documents. Due to my extensive knowledge or 'situational familiarity' with the HPS framework, and its applications in health and wellbeing initiatives in school settings, identification and coding of programs/initiatives/policies that were known to be based upon the HPS framework was completed. Codes were also assigned to aspects of the documents that could be considered to answer the research question i.e. documents were coded using my 'insider' health promotion lens or as an 'insider researcher' in order to uncover the hidden meaning of the documents which could be related to the HPS framework.

In qualitative studies researchers may take on a variety of roles in the research setting. While definitions vary for the purposes of this research an 'insider researcher' was identified as a member of the group being studied or who chooses to study a group they belong to, whilst an 'outsider researcher' does not belong to the group being studied and may be considered as a stranger (Breen, 2007). Assuming an insider perspective enabled attention to be directed to and

highlighting of elements of the documents that could be identified as part of an initiative based upon the HPS framework. I therefore sought to identify elements related to student centred teaching and learning opportunities within the curriculum and extra-curricular activities for students, the development or existence of school partnerships and community links with local services, and the school environment and ethos for supporting health and wellbeing of the school students, families and staff.

The codes assigned to the three documents were then compared to create a thematic framework. This framework was then cross-checked against the three documents before application to the remaining documents included in the policy analysis through annotation with text descriptors. The data codes were then rearranged into categories and key concepts. The categories were mapped for each document individually and then against each other to identify key themes across the complete set of documents. This enabled identification of overall themes and possible explanations for the findings based upon the study aim.

In addition to thematic analysis content analysis was also applied to the documents. Content analysis is a technique for analysing data by systematically categorising and determining the frequencies of categories or themes (Bowen, 2009). In this study content analysis enabled counting of explicit references to key terms and aspects of the policies. In particular all documents were searched for the terms 'whole of school' and 'health promoting school'. The documents were also explored for explicit references or cross-referencing to each other. The frequencies and contexts in which these words and references were presented in the documents were examined and interpreted.

4.5.1.2.1.1 Cross checking of coding

To assist in validating the findings, one curriculum and one health and wellbeing policy document were coded and themed independently, using the same approach, by myself and my main supervisor. The documents were coded and independent themes and sub-themes were established before meeting to discuss the themes and sub-themes. Due to the similarity in interpretation consensus was reached quickly.

4.5.2 Study Two – Policymakers

Study Two aimed to explore how policymakers designed a policy based upon the HPS framework intended for implementation in secondary schools. The study focused on policymakers as identified in Yanow's interpretive policy analysis approach (see Figure 4.1).

4.5.2.1 Data collection

4.5.2.1.1 Participants and recruitment

A mix of selective and snowball sampling were used to recruit 'key informants' who were responsible for or assisted with the development, implementation or monitoring of either the Australian or Victorian Secondary school curriculums or the Achievement Program, were recruited to participate in the study. Participants were identified in publicly available documents, such as those analysed in Study One or websites relevant to the Victorian secondary schools curriculum or policies and strategies related to the Achievement Program. 'Key informants' from organisations assisting implementation of the HEOH priority area were also identified.

Participants were invited to participate in a one-on-one face-to-face interview with myself via email correspondence that clearly detailed the aims and objectives of the research, through the use of an explanatory statement and consent form (Appendix 2 and 3). Those participants who agreed to take part in the study were invited to suggest other potential participants at the conclusion of their interviews (Liamputtong, 2013).

4.5.2.1.2 Interview methods

Interviews were conducted face-to-face at a time and location deemed mutually safe and convenient for the participant/s and myself. Procedures for the key informant interviews were informed by Bardach's recommendations for conducting policy research interviews given the potentially sensitive nature of the topics being discussed during interviews (Bardach, 2012). The procedures were focused upon: remaining cognisant of the possible political implications of what participants may reveal or may be reluctant to talk about honesty and freely; encouraging participants to keep talking and once momentum had been achieved steer and where necessary redirect; and probing participants with provocative and argumentative questions or comments, in addition to answering participants' questions in return (Bardach, 2012).

Semi-structured interview questions were based on the available literature related to the Australian and Victorian curriculum, HPS framework and implementation of school based health promotion, Achievement Program and aims of interpretive policy analysis. Questions were reviewed by the research team prior to the interviews commencing. Due to the variety of key informants identified question logics, rather than structured questions, were developed and tailored to each individual interview, to reflect the specific areas of knowledge and expertise of the informant and the organisation they represented. An example of the interview questions used

and inquiry logic are provided in Table 4.5 below. The interviews ranged in duration from 45-100 minutes and were conducted by myself. Signed consent forms were collected from all participants prior to interviews commencing (Appendix 3). All participants also completed a brief demographic questionnaire at the end of their interview. Questionnaires collected data related to participants' job titles, employment status and tenure (Appendix 4).

Table 4.5 Example of semi-structured interview logic for Study Two

Interview topic/question	Question logic – why was this question asked? How does it relate to Interpretive Policy Analysis?
Orientation of participants Can you provide me with an explanation of your current role?	Role as a relevant policymaker, policy actor or stakeholder
Achievement Program design Can you tell me about your understanding of how and why the Achievement Program was designed?	Interpretation of how the Achievement Program was designed and the value or meaning placed/nuanced by the participants upon the Achievement Program
Achievement Program design Can you tell me about what involvement you had in the planning and design of the Achievement Program?	Stakeholders influence and contributions to how the Achievement Program was designed.
Achievement Program design and curriculum Can you tell me how the Achievement Program was proposed to be implemented by secondary schools? Can you describe how the Achievement Program was proposed to fit with the curriculum? To the best of your knowledge did this occur and to what extent did this occur?	Knowledge and interpretations of how the Achievement Program was intended to be implemented Knowledge and interpretations of if and how the curriculum requirements were valued or taken into account when the Achievement Program was designed
Achievement Program design and curriculum Can you comment on your involvement in the curriculum in regards to Health and Physical Education curriculum– specifically the key concept of 'Healthy eating' under the 'health knowledge and promotion' dimension?	Role in the development/ implementation/ evaluation of the nutrition related components of the curriculum
Achievement Program design and nutrition education What are the 'food and nutrition' and 'healthy eating' objectives described in the curriculum based upon?	Knowledge and interpretations of the evidence base and value placed upon the nutrition education related objectives
Achievement Program design and nutrition education The curriculum documents refer to a 'set of standards' and 'benchmarks' that schools must meet. What are these standards and benchmarks based upon? Who is responsible for setting these? How is monitoring of their implementation conducted?	Knowledge and interpretations of the evidence base and value placed upon the nutrition education related standards and benchmarks
Achievement Program design and nutrition education What is your understanding of how and what is implemented in Victorian schools to address the 'food and nutrition' and 'healthy eating' objectives within the curriculum? Through home economics? Health education? Hours? Text books used? External programs used?	Interpretations of how the curriculum guidelines are intended to be implemented and translated into practice compared with actual implementation and translation.
Achievement Program design and curriculum Can you tell me about your understanding of the Achievement Program and how this is/was being used in secondary schools to address areas of the curriculum?	Awareness of the Achievement Program and intended implementation within the curriculum
Achievement Program design and nutrition education Can you tell me about why and how the Food Literacy program was designed?	Knowledge and interpretations of the intended purpose and audience of the Food Literacy program
Achievement Program design and nutrition education Can you describe how the Food Literacy program was proposed to fit with the Achievement Program and	Knowledge and interpretations of the intended use of the Food Literacy program in relation to the Achievement Program and curriculum

curriculum? To the best of your knowledge did this occur and to what extent did this occur?	
Achievement Program design and physical education Physical education is mandated in the curriculum for Year 7-10 students – can you tell me a little about the reasoning behind this? Why wasn't nutrition education mandated for these same reasons?	Value or level of importance placed on aspects of physical health such as nutrition education for secondary school students
Secondary schools' role in health and wellbeing In your opinion, what role should secondary schools play in the provision of health and wellbeing and nutrition initiatives to adolescents? Who else has a role to play?	Perspective on the role of secondary schools in providing health and wellbeing and nutrition initiatives for adolescents such as the Achievement Program and value placed upon school based health and wellbeing initiatives

All interviews were audio-recorded and transcribed verbatim. Written notes were taken during interviews which enabled identification of topics requiring further discussion. The notes also assisted interpretation of interviews following transcription. Socio-demographic data including employment status, years of employment and which organisation/agency participants represented were collected prior to each recorded discussion, to assist in the interpretation of research findings. Transcribed interviews were cross-checked with recordings for accuracy and corrected where appropriate. Participants were then sent a copy of their interview transcript and given one week to notify myself if they wished to withdraw their consent for data from their interview to be used in the study, and to verify that the transcript was a true representation of the interview (Doyle, 2007).

A total of 12 individuals were identified through purposive sampling as being eligible and able to provide information rich stories to inform our analysis. An additional three participants were identified through snowball sampling. Of all potential participants (n = 15), two (n = 2) declined to participate. An additional two (n = 2) withdrew their consent to participate following their interviews leaving 11 (n = 11) individuals to participate in the study.

4.5.2.2 Data analysis

4.5.2.2.1 Thematic analysis

Thematic analysis of the semi-structured interview transcripts was informed by Yanow's interpretive policy analysis approach, which acknowledges that there can be various ways of understanding and viewing the world and therefore policies (Yanow, 2000; Yanow, 2007). This study used narrative policy analysis where the focus was on the issue-oriented stories told by the policymakers and stakeholders. This approach facilitated clarification of policy positions and

comparison across different versions of stories of policy structures and their content (Yanow, 2000).

Using an interpretive lens, thematic analysis of the interview transcripts provided an opportunity to identify key informants' beliefs and interpretations of the Achievement Program design process and their experiences of the process (Yanow, 2000). Electronic copies of all interview transcripts were entered into NVivo 11 (QSR International, 2016). Thematic analysis of the interviews employed a constant comparison approach informed by Pope et al.'s five stages of qualitative analysis (Pope et al., 2000). This included: 1) familiarising oneself with the data, 2) identification of a thematic framework, 3) applying the thematic framework to the data, 4) rearranging the data to form abstract concepts, and 5) interpreting the data. This process was selected as it enabled identification of concepts and themes across the set of interviews that were not preconceived (Braun & Clarke, 2006; Creswell, 2012). This ensured that all possible themes or references to key aspects of the Achievement Program design process were captured.

4.5.2.2.1.1 Cross checking of coding

I coded all of the interview transcripts. Three transcripts were coded and themed independently by a research assistant (TC) and an additional three transcripts were coded by my main supervisor. Results of the independent analysis were discussed and consensus achieved with little difference in themes between the three researchers.

4.5.3 Study Three – Policy implementers

Study Three aimed to explore the experiences of secondary schools implementing the Achievement Program, as per the final section of Yanow's interpretive policy analysis approach (see Figure 4.1). The design of Study Three was informed by Merriam's case study approach as identified earlier in Section 4.4.4.3 (Merriam, 1998). Merriam (1998) considers that the key philosophical assumption upon which all types of qualitative research are based is the view that reality is constructed by individuals interacting with their social worlds, and that reality is not an objective entity; rather, there are multiple interpretations of reality. She identifies a case as a phenomenon occurring in a bounded system – a single entity or unit which has clear boundaries such as a program, policy or group such as a school (Merriam, 1998). Merriam also clearly distinguishes case study research as having three key attributes. Case study research is: 1) Particularistic, focussing on particular events, programs or phenomenon, 2) Descriptive, providing a rich and thick description of the phenomenon under investigation, and 3) Heuristic, providing understanding of the phenomenon under investigation. This approach has been used

in research in classroom teaching, organisational culture in schools, evaluating educational programs and exploring teachers' experiences in secondary schools (Liu, 2007; Merriam, 2009; Negis-Isik & Gursel, 2013; Synder,2012). Merriam's case study approach was therefore deemed appropriate to explore implementation of the Achievement Program as a phenomenon or policy within 'bounded' secondary school settings.

Prior to recruitment and data collection commencing a case study protocol was prepared (Appendix 5). Protocols outlining procedures that would guide data collection across multiple schools are recommended in case study research (Yin, 2009). The protocol developed consisted of an overview of the purpose of the study, data collection procedures and details related to the observation tool (Appendix 5).

The study included four methods of data collection: individual and group interviews, document collation, drawings and observations. Details of each of these data collection methods are described below. Given the timelines and existing work already completed in the PhD thesis, the study aimed to act as a pilot and test an approach to begin to understand how and why secondary schools may be progressing through the Achievement Program and factors contributing to their recognition as a HPS, rather than achieve a complete answer to the research questions.

4.5.3.1 Data collection

4.5.3.1.1 Study participants and recruitment

For this study interest lay in piloting the case study methodology in secondary schools that had achieved recognition for at least one health priority area (HPA) in the Achievement Program (e.g. HEOH, mental health and wellbeing etc.). These schools were selected from the 583 secondary schools in Victoria as they provided an exemplar that secondary schools could achieve recognition in the Achievement Program. These schools would contribute valuable insights and learnings to address the outlined research aim, in addition to piloting the case study methodology. Recruitment for the pilot case study therefore focussed on secondary schools that had been recognised as having achieved recognition for a chosen HPA.

Access to de-identified data related to the uptake and progress of all secondary schools registered for the Achievement Program was provided by the DHHS. Eligible secondary schools as of September 2018 were approached by the Achievement Program service provider, Cancer Council Victoria, via email. Emails were sent to the ten schools who were recognised by Cancer Council Victoria as having achieved one or more of the priority areas (n=10). The emails included a

detailed outline of the research (Appendix 6) as well as an explanatory statement (Appendix 7) and consent forms (Appendix 8 and 9). Follow up emails and telephone calls with all schools were initiated two weeks after the initial email was received.

Two schools expressed interest in participating. One school was not able to participate due to inability to commit to interviews and lack of staff time. One secondary school (n=1) was therefore recruited to participate in the pilot case study.

4.5.3.1.2 Interview methods

Individual and group interviews were conducted face-to-face at the school during times appropriate for the school representatives. Similar to in Study Two the procedures for the interviews were informed by Bardach's recommendations for policy research interviews as participants were considered to be key policy stakeholders in their roles as implementers of the Achievement Program (Bardach, 2012). Semi-structured interview questions were informed by the research questions, HPS framework and Achievement Program. All interview questions were formulated and reviewed by my main supervisor. Table 4.6 provides a summary of the interview questions. The interviews ranged in duration from 30-90 minutes.

Table 4.6: Semi-structured interview logic for Study Three

Interview topic/questions	Question logic – why was this question asked? How does it relate to Interpretive Policy Analysis?
Orientation of participants Can you introduce yourself and your role at the school and in relation to the Achievement Program?	Roles as implementers of the Achievement Program
Engagement and motivation How did your school become involved with the Achievement Program? Why? Incentives? Motivators? What motivated your school to progress to the stage of achieving recognition?	Factors encouraging registration with the Achievement Program and the value placed by participants and their respective schools on implementation and progression
Enablers What do you believed enabled you to achieve the benchmarks for your selected HPA? Contributing factors to your success? Can you describe how you progressed through the cycle and HPA selection? Did you leverage existing community partnerships or create new ones?	Interpretations of the enabling factors and their value by the participant To explore interpretations of how implementation of the Achievement Program was progressed
Capacity, support and resources Upon commencement of the Achievement Program did you feel you had the capacity? Why? Why not? Were champions involved? Prior to commencement were you aware/what was your understanding of the HPS Framework? What training/experience was already present within the school? What training was received to assist you in implementing the Achievement Program? Did you draw on any local supports or resources? Local health promotion officers?	Interpretations of their capacity and that of their school to implement the Achievement Program and what assisted implementation Interpretation of the HPS framework and value placed on the HPS framework
Impacts and value Prior to commencement what health and wellbeing activities were in place at the school? What impact has participation in the Achievement Program had on the school community? Staff? Students? Parents? Were these benefits or to the detriment of the school? What health, productivity or learning outcomes did you experience (as staff, students, parents)? Intended outcomes? Are there any noticeable changes around the classroom or school? Environmental or behavioural? Unintended consequences? How is the Achievement Program contributing to the health and learning outcomes at your school? Were students involved in implementation? If so how? If not, why not? What are you most proud of as a result of your school's participation? What did you/your school value most about your/its participation in the Achievement Program?	Interpretations of the perceived and actual outcomes of the Achievement Program in their school and the value placed upon them by the participant and the school community
Curriculum and policy Prior to commencement was a whole of school approach to health and wellbeing being implemented? Did changes to the Victorian curriculum impact upon implementation plans for the Achievement Program? How did the Achievement Program fit into the curriculum? Were changes or sacrifices made?	Interpretations of the role and consideration given to curriculum and other government and school based policies in implementation of the Achievement Program and HPS framework

Were school curriculum planners involved in implementation? How does the Achievement Program link with other existing curriculum and health and wellbeing policies?	
Barriers and challenges Did you encounter any barriers/ challenges? Can you describe these and how these might have been resolved?	Interpretations of the real-world barriers and challenges they encountered in implementing the Achievement Program and strategies used to resolve them
Costs What costs were associated with participation in the Achievement Program (financial, staff and student time etc.)? Were there less or more than what you had anticipated?	Interpretations of the costs associated with implementation of the Achievement Program
Sustainability Were any policies developed/revised as part of participation in the Achievement Program? If so, which ones and how? Does the Achievement Program align with school plans or the school motto and vision?	Interpretations of how the Achievement Program aligns with existing school and government policies
Future directions What work is currently being done towards the Achievement Program? Other HPAs?	Interpretations of the potential real-world enablers or constraints to ongoing implementation of the Achievement Program
Improvements Do you have any recommendations or ideas related to how the program could be improved? Or how Cancer Council Victoria could better support secondary schools to implement the Achievement Program? Would you do anything differently next time in terms of how you approached the Achievement Program?	Beliefs and ideas on useful changes that may contribute to increasing successful implementation of the Achievement Program
Sharing learning What advice would you have for other secondary schools working towards the HPAs you selected? What overall advice would you have for other secondary schools thinking of registering with the Achievement Program?	Beliefs and practical advice on opportunities to duplicate their success in particular HPAs of the Achievement Program

Abbreviations: HPA – health priority area; HPS – Health Promoting Schools.

All interviews were audio-recorded and written notes were also taken during interviews to facilitate further exploration of topics discussed by participants. Signed consent forms were collected from all participants prior to interviews commencing. Transcripts were transcribed verbatim and cross-checked with recordings for accuracy. Where necessary corrections were made to the transcripts. Participants were sent a copy of their interview transcript if they had requested a copy at the end of their interview and invited to give feedback/corrections.

Two interviews were conducted at the recruited school in November 2018. One group interview with three student wellbeing team staff and one individual deputy principal interview (n=4). None of the participants requested a copy of their interview.

4.5.3.1.2 Document retrieval and collation

Documents for this study were chosen based on their relationship to the implementation of the Achievement Program (Bowen, 2009; Merriam, 1998). Documents included newsletter articles, staff presentation outlines, and health and wellbeing policies which may have been reviewed or developed as part of the school's implementation process. Potentially relevant documents were discussed prior to data collection via email with participants and discussed further during days when observations and interviews were taking place. All included documents were provided with the school's consent.

A purposive convenience sample of four policy documents, five newsletter articles and one presentation outline were included in the analysis (total pages n = 73). The selection of specific documents were chosen due to their content containing relevant information to implementation of the Achievement Program in the school. Table 4.7 provides a summary of the documents included in Study Three.

Table 4.7: Description of documents included in Study Three

Document Title	Document Type	Description
Student Wellbeing Framework 2018	Policy	• This document outlined the school's commitment to health and wellbeing for its students, parents and staff. • The document provided a framework focused on wellbeing providing details related to procedures, processes, structures and programs to facilitate wellbeing. • The document is revised annually to ensure ongoing relevance.
Food @ School Policy	Policy	• This document outlined the school's encouragement and promotion of use of the 'traffic light system' of food selection at the canteen and other school events. • This document outlined types and categories of foods encouraged at the school to promote growth, bone health, dental health, weight management, concentration and development of good food habits.
Healthy Food @ School Guidelines	Policy	• This document outlined the close relationship between health and academic performance and the importance of a healthy school environment where the school curriculum is complementary to school food services. • This document summarised the priority areas for action in the school in relation to the provision of healthy foods and a healthy school environment.
Drug and Alcohol Policy September 2018	Policy	• This document detailed the school's commitment to creating a school environment free of drugs and alcohol. • The document outlined the school's procedures and structures related to drug and alcohol use.
Year 11 Wellbeing Day – newsletter article 14th March 2018	Newsletter article	• This newsletter article communicated events and activities conducted during the Year 11 wellbeing day. • This newsletter article was used as evidence by the school when applying for recognition for the Mental Health and Wellbeing HPA
The Achievement Program – newsletter article June 2018	Newsletter article	• This newsletter article provided an outline of the Achievement Program and the school's involvement with the Mental Health and Wellbeing HPA
The Achievement Program – newsletter article July 2018	Newsletter article	• This newsletter article outlined that the school had achieved recognition for the Mental Health and Wellbeing HPA thus provided an update for the school community on the school's progress in the Achievement Program
The Achievement Program – Safe environments benchmark 2018	Newsletter article	• This newsletter article communicated to the school community about the school's involvement in the Achievement Program and work conducted towards the Safe environments HPA
Mental Health Week – newsletter article 2018	Newsletter article	• This newsletter article outlined activities that were facilitated during Mental Health week.

		• This newsletter article identified evidence of healthy food activities proposed to be used as evidence when applying for the HEOH HPA
The Achievement Program – Staff presentation 2018	Presentation outline	• This document outlined topics discussed by participants at a staff meeting to raise awareness of the school's participation in the Achievement Program in 2018

Abbreviations: HEOH – healthy eating and oral health; HPA – health priority area.

4.5.3.1.3 Drawings

Drawings were included as part of the interview process. Participants were asked to annotate a picture of the Achievement Program eight step cycle (Appendix 10). The use of both visual and word-based research methods have been shown to offer ways of exploring the complexity of human experiences in social research (Guillemin, 2004). In qualitative research drawings have been shown to help focus and increase honesty in participant responses (Kearney & Hyle, 2004), draw out unspoken thoughts and feelings by accessing information different than if asked to do so verbally, and allow participants to frame their own experiences unencumbered by potential biases about people and organisational change (Vince, 1995). The mental process required to draw may help participants to sort their experiences into succinct pieces and attach meaning to them, thus helping participants to process their experiences more easily (Kearney & Hyle, 2004). Drawings and visuals may also help to disrupt well-rehearsed or planned responses by participants and help to shift some of the power to the participants as experts of their experiences (Rees, 2010; Rees, 2018).

Participants were therefore asked to record any initial comments or thoughts they had related to key events and activities that took place at their school during each step or phase (Coordinate, Create and Celebrate) of implementation in the cycle by annotating a picture of the Achievement Program cycle. Annotation of the pictures was included to: 1) assist participants in beginning to frame and process their experiences in implementing the Achievement Program through reflection prior to the interviews, 2) disrupt potentially planned responses during interviews and 3) help participants to identify themselves as experts of their own experiences in implementing the Achievement Program. Participants were also informed that the drawings would be used throughout their interview to prompt reflections and discussion to ensure all drawing details had been addressed during the interview (Rees, 2010).

Participants in the group interview completed one drawing (n = 1) as a group as they had worked closely as a team during implementation of the Achievement Program and were interviewed together. The deputy principal did not have time to complete the drawing and indicated prior to

commencing the interview that they did not feel they had anything additional to offer that the other participants had not already recorded in their drawing. The deputy principal was not shown the drawing completed by the participants in the group interview.

4.5.3.1.4 Observations

Unstructured observations of the school environment were conducted using an observation tool developed prior to recruitment and data collection commencing (Appendix 11). Observations provide a systematic and purposeful research method to watch and record elements in the school setting such as the physical setting, students, staff and activities or interactions of what is going on within the school environment. Adler and Adler suggest that observations 'occur in the natural context of occurrence, among the actors who would naturally be participating in the interaction, and follows the natural stream of everyday life' (Adler & Adler, 1998, pp.378).

In this study, observations of the school environment provided opportunities for greater immersion within the school to observe how the Achievement Program was being integrated. It also provided opportunities to gain additional insights into existing school resources and structures that may be contributing to the school's successful implementation of the Achievement Program and factors that may present as future challenges. Moreover potential discrepancies between what was said to be happening (interviews) and what was actually happening could also be clarified.

Observations of the school environment were guided by an observation tool. The tool was used to collect details of the school environment and personnel, resources, physical environment as well as natural interactions occurring between students and staff (Appendix 11). This tool assisted with structured data collection during the observations. Additional field observations including diagrams of the school environment were also recorded. As data collected by observations can be influenced by the professional and personal perspectives of the researcher I also used a reflective journal to capture thoughts and personal perspectives (Mulhall, 2003). This reflection contributed to acknowledging my input into the research and verifying interpretations of the data later on (Johnson & Waterfield, 2004). The reflective journal entries were not included as data.

A total sample of one (n=1) observation form and five (n=5) additional field observation notes were written/recorded and included in analysis.

4.5.3.2 Data analysis

4.5.3.2.1 Framework analysis

Framework analysis has previously been used in policy research as it provides a focused yet flexible and repeatable procedure to collect and analyse data (Srivastava & Thomson, 2009). Similar to the thematic analysis approach used in Study Two framework analysis includes five steps: 1) familiarisation, 2) identifying a coding framework, 3) indexing, 4) charting and 5) mapping and interpretation (Ritchie & Spencer, 1994). These steps are summarised in Table 4.8.

Table 4.8. Summary of five steps of framework analysis (from Ritchie & Spencer, 1994)

Step	Summary of step
Familiarisation	Process where researchers become familiarised with data collected, gaining an overview of the data by reading transcripts and listening to the audio files of interviews
Identifying a coding framework	The researchers identify emerging themes and concepts in the data to form the basis of a thematic framework or 'index' through a team approach
Indexing	When portions or 'pieces' of text or data are assigned to a particular theme, similar to coding, from the 'index'.
Charting	The specific pieces of text identified in the indexing step are grouped together in charts under their respective themes. Where the data was extracted from remains clear.
Mapping and interpretation	When researchers begin to map and interpret the charted data as a whole, often resulting in development of a schematic diagram of the event or phenomenon under investigation.

Multiple data collection methods were employed in this study to explore 'why' and 'how' the recruited secondary school was voluntarily implementing the Achievement Program and 'factors' perceived as contributing to their success were identified.. As Patton identifies in case study research, multiple sources of information are sought as no single source of information can be trusted to provide a comprehensive perspective (Patton, 2002). By using a combination of observations, interviewing and document analysis, different data sources were used to validate and cross-check findings. However it is considered to be rare that all three strategies are used equally in gaining an in-depth understanding of the case (Merriam, 1998). A consistent comparative approach to analysis from the interview transcripts through to the documents and observations in an integrative way ensured a rich story was built from the entire data set. This also ensured adequate mapping and charting of how each component of the data set contributed to the final interpretation or findings of the study. Unlike in Study Two, participants were asked the exact same questions in individual and group interviews so the developed framework could be applied to all interviews. Framework analysis was therefore deemed to be more appropriate for this study than thematic analysis and was the primary analysis technique used across all data collected in this case study.

Electronic copies of the two interview transcripts were entered into NVivo 11 (QSR International, 2016). Familiarisation was conducted by myself and my main supervisor. This involved immersion in both interview transcripts, development of mind maps and writing detailed notes on initial impressions of the data and potential themes related to 'why', 'how' and 'contributing factors'. This was conducted autonomously and followed by a meeting where findings were discussed to develop a coding framework (see Appendix 12). The coding framework developed aligned with the research questions for the study and themes identified.

The coding framework was developed as a word document and loaded into NVivo 11 (QSR International, 2016). I then completed indexing on the entire data set of the two transcribed interviews as well as all documents, drawings and observation notes collected. Indexing involved applying the coding framework to the data by highlighting and assigning 'codes' to sections of text/data. In addition to the transcripts, my main supervisor also conducted indexing on a sample of two policies (n=2), three newsletter inserts (n=3), one drawing (n=1) and two observation notes (n=2).

The remaining two steps of charting and mapping and interpretation were conducted using NVivo, hand written notes and mind maps. This involved grouping the coded sections of text/data together from the entire data set before interpreting the data as a whole. These steps were guided by interpretive policy analysis, and the study's specific research questions to identify how and why secondary schools were progressing through the Achievement Program, and the factors perceived to be contributing to their success.

4.5.3.2.2 Document analysis

Documents collated including policies (n=4), newsletter inserts (n=5) and staff presentation outlines (n=1). All documents were loaded into NVivo 11 (QSR International, 2016). Completed drawings (n = 1), observation data collection tools (n=1) and additional field observation notes (n=5) were also uploaded.

According to Bowen document analysis typically incorporates elements of thematic analysis of the text and language, and content analysis to explore context and frequencies within a document (Bowen, 2009). The framework developed for the interviews was therefore applied to all documents loaded in NVivo 11 (QSR International, 2016) to explore and identify content that was relevant to the study aim, and verified or negated findings from the interviews. This ensured a consistent approach was applied to all data related to this study.

4.6.3.2.1 Drawings

Kearney and Hyle (2004) suggests that the meaning of drawings can only be fully understood when participants contribute to the interpretation of their drawing. This is supported by Literat (2013) who suggests that participants not only help to illuminate more in terms of the research findings but this approach is also more ethical from a methodological standpoint. Given the collection and exploration of multiple interpretations and perspectives is a central tenet of this thesis analysis of this drawing commenced during the group interview, when participants were asked to review their diagram for any points that had not been raised throughout the interview. This also provided an opportunity for clarifying any unclear written comments or remarks on the diagram. Analysis of the drawing was completed by applying the coding framework developed for the interviews to the drawing. As the diagram was completed by all participants of the group interview only one pencil colour (grey) was used to annotate the diagram. No analysis of the participants' use of colour on the diagram was conducted (Bagnoli, 2009).

4.6 Matters of quality

4.6.1 Quality in this qualitative research

High quality qualitative research has been described as having eight criteria: 1) worthy topic, 2) rich rigor, 3) sincerity, 4) credibility, 5) resonance, 6) significant contribution, 7) ethical, 8) meaningful coherence (Tracy, 2010). I have chosen to draw upon these criteria in Table 4.9 to demonstrate how quality has been addressed in each of the three studies detailed in this thesis.

Table 4.9: Evidence of quality in studies according to Tracy's eight criteria for qualitative research (Tracy, 2010)

Criteria for quality	Definition or how this can be achieved by researchers	Study One - Policies	Study Two - Policymakers	Study Three – Policy implementers
Worthy topic	• Topic of the research is relevant, timely, interesting and significant • Research may be triggered by current political climate or contemporary controversies	• Timely as the new Victorian Curriculum was introduced for implementation commencing 2017 • Timely as the Achievement Program was coming to completion of its initial planned funding period and was due for evaluation • Addressed the contemporary issue of overweight and obesity in Victoria	• Interesting topic as the design process had not previously been documented and publicised • Timely as changes were occurring to HWB in DET	• Interesting topic as in depth explorations of secondary school experiences with the Achievement Program had not been conducted • Timely as the Achievement Program service provider had limited capacity to conduct in depth research in individual secondary schools • Timely as Achievement Program funding is under annual review and is informed by evaluation findings
Rich rigor	• Descriptions and explanations are rich • Ensures the data collected will substantiate meaningful and significant claims • In interviews rigor shown through the length, breadth of interview sample, practices taken to ensure accuracy of transcripts	• Rigorous data analysis using document analysis • Care was taken to collect and include all relevant documents	• Breadth of participants sought and recruited for interview sample • Interview transcripts were transcribed verbatim and checked repeatedly by members of the research team	• Study design informed by case study methodology to ensure rich description • Interview transcripts were transcribed verbatim and checked repeatedly by members of the research team • Broad interview sample approached to participate
Sincerity	• Transparency in methods and challenges • Researcher is transparent in biases and inclinations through self-reflexivity	• Methods have been clearly detailed • Challenges have been explored and *shown* in the	• Methods have been clearly detailed • Well suited as an outsider researcher to examine the topic based on professional	• Methods have been clearly detailed • Well suited as an outsider researcher to examine the topic based on similar

	• *Showing* rather than *telling* self-reflexivity by weaving reactions or reflexivity considerations throughout the research report	reflexive quilting piece in Section 5.3. • Transparency of my biases as an insider researcher communicated in Section 4.5.1.2.1.*	experience in health promotion and school based initiatives but absence of experience as a policymaker* • Self-reflexivity and transparency of challenges experienced shown through reflexive quilting in Section 6.3.	professional experience in health promotion and school based initiatives but absence of experience as an implementer of the Achievement Program* • Self-reflexivity and transparency of challenges experienced shown through reflexive quilting in Section 7.4
Credibility	• Research includes thick description and *showing* rather than *telling* • Use of triangulation or crystallisation • Delves deeper to explore assumed or implicit issues • Multivocal research when varied voices are included in the qualitative analysis and report • Member reflections where participants are included in dialogue about the study findings, this may include member checks	• Thick description of study design used detailed in Sections 4.4 and 4.5 • Use of interpretive policy analysis and insider perspective enabled exploration of issues that were assumed or implicit within the documents* • Multiple researchers were involved in the analysis and identification of themes	• Thick description of study design used detailed in Sections 4.4 and 4.5 • Deep delving into what may be considered as assumed and implicit topics by participants in semi-structured interviews through my outsider researcher perspective* • Member checking of all transcripts was completed • Multiple researchers were involved in the analysis including an additional researcher with extensive experience in qualitative research	• Thick description of study design used detailed in Section 4.4 and 4.5 • Member checking of interview transcripts was completed • Multiple researchers were involved in the analysis and identification of themes

Resonance	• Refers to research's ability to affect an audience by promoting empathy and identification by readers with no direct experience in the topic • Audience is moved through transferable findings and naturalistic generalisations	• Conscious efforts were made to reduce the jargon in the analysis to better engage the target audience • Effort made to extrapolate findings beyond Victoria to secondary schools world wide	• Reasons identified for how findings are transferable to other countries delivering the HPS framework • Participant specific jargon reduced by researchers in the analysis and presentation of themes	• Participant specific education and health promotion jargon reduced by researchers in the presentation of the themes • Effort made to ensure findings are not over interpreted or generalised
Significant contribution	• *Theoretical significance* – examines how existing theory makes sense in new and different context, • *Heuristic significance* – develops curiosity in the reader to inspire new discoveries, • *Practical significance* – knowledge is useful and includes *phronetic research* where the analysis enables practical wisdom, and • *Methodological significance* – engages research in new and creative ways	• Theoretically significant through examining how existing theory of the HPS framework is used in the Victorian context • Heuristically significant by influencing a variety of audiences including policymakers and school staff • Phronetic research as has the capacity to provide practical wisdom for secondary schools and transform how HWB initiatives are designed and delivered	• Theoretically significant as shows how existing theory of HPS framework was of high importance in Achievement Program design process • Heuristically significant as may inspire policymakers, health promotion practitioners and school staff to engage with Achievement Program and HPS framework • Practically significant as provides useful knowledge for other policymakers	• Theoretically significant as shows how HPS framework has been implemented in Victorian context • Heuristically significant as may inspire more secondary schools to engage with the Achievement Program • Practically significant as provides recommendations for future research and considerations for future implementation of the Achievement Program
Ethical	• *Procedural or categorical ethics* – where participation is voluntary and participants have the right to know about the nature and potential consequences of research • *Situational ethics* – where researchers acknowledge	• Situational ethics – I constantly reflected on the methods employed and the importance of the data being exposed. • Situational ethics –during document analysis I remained mindful that the	• Procedural ethics – research was approved by an ethics committee and participants were provided with explanatory statements of the research which clearly stated that participation was voluntary	• Procedural ethics – research was approved by an ethics committee and participants were provided with explanatory statements of the research which clearly stated that participation was voluntary

	differences in research situations and repeatedly reflect upon their ethical decisions • *Relational ethics* – researchers are mindful of their actions and character. • *Exiting ethics* – explores beyond the data collection phase to how researchers share their findings and leave the research scene	documents included had been written for a different intended purpose to the research	• Situational ethics – it was ensured that the harms of the research did not outweigh the moral goals of the research • Relational ethics – I engaged in reflexivity and memo writing to remain mindful of my actions and contribution to the research	• Situational ethics – it was ensured the harms of the research did not outweigh the moral goals of the research • Relational ethics –I engaged in reflexivity and journaling to remain mindful of my actions and contribution to the research
Meaningful coherence	• Achieves stated purpose • Methods and procedures align with stated goals and theoretical framework • Includes member checks and reflections • Findings interconnect with existing literature	• Stated purpose was achieved • Methods used aligned with epistemology and theoretical positioning of overall research • Conclusions and implications interconnect with the literature and data collected	• Stated purpose was achieved • Methods used aligned with epistemology and theoretical positioning of overall research • Conclusions and implications interconnect with the literature and data collected	• Stated purpose was achieved • Methods used aligned with epistemology and theoretical positioning of overall research • Conclusions and implications interconnect with the literature and data collected

Abbreviations: DET – Department of Education and Training; HPS – health promoting school; HWB – health and wellbeing. * For the purposes of this research I identified as an 'insider researcher' when I was exploring a group or topic in which I was well versed or belonged, and identified as an 'outsider researcher' when I was exploring a topic or group I did not belong to (Breen 2007).

4.6.2 Crystallisation

Crystallisation was previously introduced in Chapter One as one of two metaphors I have employed to explore reflexivity throughout this thesis. Crystallisation was proposed as a method for combined multiple data collection methods and forms of analysis to create one coherent story or piece of work. As described in the foreword, crystallisation acknowledges that there can be multiple interpretations of a phenomenon and that creation of a crystallised text can only hope to identify a partial truth (Ellingson, 2014). Crystallisation therefore assisted in drawing together findings from the four studies to create one cohesive, yet partial, understanding of the design and implementation of the HPS framework through the Achievement Program in Victorian secondary schools.

4.7 Summary

This chapter intended to orientate the reader to the methodological framings and justify methods of data collection and analysis across the four three studies in this PhD research.

The chapter commenced by clarifying my epistemological position and theoretical approach. This was followed by an in depth exploration of, and reasoning behind use of Yanow's interpretive policy analysis to inform the research methods for the three studies, and exploration of how I ensured high quality research was conducted.

The chapters that follow present the results of Studies One, Two and Three. The results of Studies One and Two are presented in Chapters Five and Six as submitted manuscripts. The results of Study Three are presented as a traditional results chapter (Chapter Seven) with a discussion of the findings. These chapters are followed by Chapter Eight which presents a combined discussion and conclusions to the thesis.

Chapter Five – Study One – Policies

5.1 Introduction

The previous four chapters have provided background to this research and outlined the methodology and methods used in the empirical work of this thesis. This chapter (Five) is the first of three results chapters presented. Section 5.2 presents the findings of *Study One – Policies*, the first study conducted underpinned by Yanow's interpretive policy approach as a submitted manuscript. Section 5.3 presents the second reflexive quilting piece presented in this thesis and is followed by section 5.4 where the chapter is concluded.

Chapter Three presented the findings of a systematic literature review which found that school-based multi-strategy interventions that encompassed nutrition education can have significant impacts on adolescents' anthropometric and dietary intake measures (Meiklejohn et al., 2016). The findings supported previous evidence of the importance of using theoretical frameworks to guide intervention design to optimise successful implementation. None of the included studies were based upon the HPS framework, despite the substantial evidence base for its implementation as discussed in Chapter Two. Moreover none of the interventions highlighted the importance of school or local policies for ensuring successful intervention implementation. This raised the question of why are health and wellbeing initiatives based upon the HPS framework not more commonly being implemented in secondary schools? Could it be due to the absence of supportive government policies as suggested by the literature presented in Chapter Two?

The first empirical study of this thesis therefore aimed to answer this question by exploring implementation of the HPS framework in Victorian secondary schools. In particular this study aimed to explore how government curriculum and school based health and wellbeing policies support implementation of policies based upon the HPS framework. This study was informed by the first section of Yanow's interpretive policy analysis approach which focuses on policies as 'authored texts' and 'what policies say' (see Figure 4.1).

The manuscript presented here was submitted for publication to Journal of School Health in October 2018. It is presented here in Chapter Five in its submitted form (inclusive of references and journal specific headings).

5.2 A policy analysis of government and school based health and wellbeing policy support for implementation of the HPS framework

Meiklejohn, S, Peeters, A, Ryan, L, Palermo C. (Submitted October 11, 2018) An interpretive policy analysis of Australian government health and education policy. *Journal of School Health.*

ABSTRACT

BACKGROUND: The Health Promoting Schools (HPS) approach has been shown to have positive impacts upon adolescent health outcomes. Yet little is known about how secondary schools are supported through relevant policy to implement the HPS approach. This study describes the results of an analysis of the extent to which government curriculum and health and wellbeing (HWB) policies are likely to support secondary schools to improve HWB using the HPS framework.

METHODS: We employed Yanow's interpretive policy analysis approach to conduct a policy document analysis. Six curriculum and HWB documents from Victoria, Australia were included using theoretical and purposive sampling. Documents were analysed for references to the HPS approach using content and thematic analysis.

RESULTS: Two main frames of interpretation were identified: (1) Policies show commitment to HWB yet (2) references to the HPS approach are hidden to an untrained eye. An overarching commitment to HWB was underpinned by HPS. No explicit references to HPS were identified. Two references to 'whole of school' approaches were identified.

CONCLUSIONS: Government policies in Victoria, Australia currently provide little support or guidance for implementation of the HPS approach for adolescents. These results may inform future efforts to better connect the HPS approach with school-based policies.

Adolescence is a crucial period of human development where attitudes, beliefs and behaviours towards health are formed[1]. Adolescents' health related behaviours are highly influenced by their peers and social and physical environments at school[2]. Schools are therefore an ideal setting for implementation of health and wellbeing initiatives. The Health Promoting Schools (HPS) approach was developed by the World Health Organisation (WHO) in the 1980s and was underpinned by the Ottawa Charter which highlights the importance of considering the wider political, environmental and social influences on health and people's individual lifestyle choices[3]. The approach focuses on three areas of intervention within the school and local community: 1) school curriculum, teaching and learning, 2) school ethos, environmental, and organisation, 3) school-community partnerships and services[4]. The HPS approach has been shown to be effective in creating environments that are supportive of health related curriculum and policy changes, and have positive impacts upon adolescent health related behaviours such as increased physical activity and fitness levels, decreased cigarette use and improved fruit and vegetable consumption[4-6]. Yet little is known about how government policies may be supporting schools in Australia to implement the HPS approach. Exploring these policies will enable the identification of factors that may be enabling or prohibiting schools having an impact on adolescent health.

The HPS approach has been implemented internationally in many European countries, Hong Kong and Australia[7-10]. Whilst there are various adaptations across countries, the literature suggests that supportive policies are imperative for successful implementation of interventions based upon the HPS approach[4, 8]. School based policies have been shown to contribute to holding leadership and school staff accountable to a HPS approach and the provision of supporting resources[11]. National and state health and education legislation on implementation of the approach is also essential[4, 8]. The extent to which health and education government departments are supportive of the HPS approach may promote or constrain successful implementation of the approach[8]. For example, the structure of the curriculum and availability of health promotion training and personnel may reflect the importance placed on health promotion and health education by government in any given country.

National HPS policies have been written and endorsed in member countries of the Schools Health in Europe (SHE) network[12]. These policies form part of existing education and/or health policies or stand alone. In Australia a national HPS policy was developed by the National Health Promoting School Initiative (NHPSI) in 2000[13] but was never endorsed by the Australian government. During development of this policy researchers found that effort was required to enhance awareness about the HPS approach with schools and senior policymakers in the education and health sectors[13]. To our knowledge no literature exists that critically analyses the influence of policy on implementation of the HPS approach and how the HPS approach may improve adolescent health. This is despite significant investment both internationally and by Australian national and state governments in policy initiatives such as the NHPSI, MindMatters and Kids Go For Your Life (KGFYL)[13-15].

The aim of this study was to explore the extent to which government curriculum and health and wellbeing policies are likely to support secondary schools to improve health and wellbeing using the HPS framework in Victoria, Australia.

METHODS

Procedure and instrumentation

This study was positioned in an interpretivist ontology and employed a policy analysis approach. Policy analysis offers a method of analysing policy implementation and evaluating public health policy interventions[16]. The aim was to explore what was written within the policies, how they were written and what support, meaning or emphasis was given to support or enable secondary schools to implement the HPS framework.

An interpretive policy analysis approach was chosen. Interpretive approaches to policy analysis acknowledge that there can be various ways of understanding and viewing the world and therefore the meaning of policies[16]. Yanow suggests that the role of policy analysts is to clarify the varying interpretations of policy meanings made by different groups as well as understanding the various elements through which these meanings are communicated[17]. Interpretive policy analysis in this study

explored the difference between policy meanings as proposed by the policymakers and other potential interpretations by relevant others[17]. In this research various policy documents text and language were analysed to compare and contrast the meanings related to the HPS approach and its constructs as defined by the WHO in the 1980s[4]. Document analysis of 'messages' in policy documents and curriculum aimed to provide insight into the extent to which national policies and curriculum are likely to be supporting the HPS approach. Moreover through understanding the connection between policies there may be potential to inform valuable data related to HPS implementation in schools.

The setting for the research was Victoria, Australia. Victoria was chosen as a Parliamentary Inquiry (the Inquiry) into the potential for developing opportunities for schools to become a focus for promoting healthy community living was conducted in 2009 by the Victorian State Government. The Inquiry identified that schools have an important role in promoting health community living but often experience various challenges in delivering health promotion initiatives[18]. Challenges may include variability in the credibility and quality of programs, an overwhelming number of initiatives to choose from, and the often short term nature of initiatives. The Inquiry recommended that the development and implementation of the HPS approach in Victorian schools be reviewed with the aim of establishing realistic goals for school health promotion, and enabling effective collaboration between the health and education sectors[18]. This resulted in an influx of state government health promotion funding and state-wide interventions in Victorian schools based upon the HPS framework. Victoria provided a rich setting for policy action in relation to health promotion in schools.

Document selection and sampling

When conducting policy analysis, literature suggests that the focus should be on the quality of the documents and the evidence they contain given the purpose and design of the study[19]. For the purposes of this study a policy of interest was defined as 'a plan or set of guidelines which would influence the work of Victorian secondary schools in implementing programs which were related to the HPS framework'. Documents were included if they were either: 1) current curriculum documentation related to learning areas where health and wellbeing were covered at state or national level, or 2)

current Victorian government policy guidelines related to or outlining the delivery of health and wellbeing initiatives in secondary schools and were accessible to the researchers. Documents were excluded from the analysis if they were either: 1) not current or 2) documents related solely to curriculum for senior secondary schools (i.e. Year 11 and 12) due to the elective nature of the senior secondary school programs in Australia and Victoria.

A purposive and theoretical sample of six curriculum and health and wellbeing policy documents were included in the analysis. The documents included were publicly available in 2016 on government and curriculum authority websites. The researchers used an iterative approach to document selection where the documents listed or referenced by included documents were considered for inclusion against the inclusion criteria[19]. This combination of sampling techniques was chosen as purposive sampling enabled the researchers to select specific documents with crucial information about curriculum and governance of health and wellbeing initiatives, and theoretical sampling as the researchers were specifically seeking documents with a focus on health and wellbeing[20]. The six documents included and the rationale for their inclusion are detailed in Table 1[21-26].

Data analysis

Electronic copies of policy documents were entered into NVivo 11[27]. Documents were analysed using document analysis which incorporates elements of content and thematic analysis[19]. Content and thematic analysis was selected as it enabled the researchers to identify concepts and themes across the various documents to ensure that all possible meanings, interpretations or references within the documents to the HPS framework were captured, while at the same time attempting to quantify the frequency of themes. This process has previously been effective in public health policy document analysis[28].

Content analysis enabled identification of explicit references to key terms and counting of the references made to different key terms and aspects of the policy. All documents were searched for the

terms 'health promoting school' and 'whole of school' separately. The context and frequencies in which these words were present in the documents were examined and interpreted.

Thematic analysis of the text and language was used to make meaning of the policies. We employed a constant comparison approach. More specifically, open coding was conducted by two authors who had detailed knowledge and familiarity with the constructs of the HPS framework and experience in implementing the HPS framework as health promotion practitioners, prior to commencing analysis. One curriculum and one health and wellbeing document were coded independently by two authors who then came together to discuss the codes emerging. In particular, the researchers focussed on the words and language used to describe health and wellbeing, and any connection to the HPS framework as is typical of interpretive approaches. This duplication of coding aimed to assist in validating the findings[20]. Due to the similarity in interpretation consensus was reached quickly. The first author then coded the remaining documents. Codes were arranged into categories and key concepts. The categories were mapped for each document individually and then against each other to identify key themes across the complete set of documents, from which a thematic framework was developed and agreed upon by two authors.

RESULTS

The thematic analysis revealed the policies identified two main frames of interpretation: (1) Policies show commitment to health and wellbeing yet (2) references to the HPS approach are hidden to an untrained eye. Frequent references were made to the three main constructs of the HPS framework: the curriculum, the school environment and community partnerships. These references were generally implicit (Figure 1). The content analysis revealed limited explicit references to the HPS framework, whole of school approaches or examples of programs based upon the HPS framework (Figure 2).

Policies show commitment to health and wellbeing

The implicit references to the HPS framework were evident through a commitment to health and wellbeing and a focus on implementation of whole of school approaches to health and wellbeing as described below.

Commitment to health and wellbeing

The commitment to health and wellbeing for all secondary school students was evidenced through repeated references to the links between health status and educational outcomes or academic performance in both of the Department of Education and Early Childhood Development (DEECD) health and wellbeing documents (Table 1). For example the reciprocal relationship with learning outcomes was discussed in detail in the *Plan for Health and Wellbeing September 2014* where WHO research was referenced and formed the foundations of the context for the plan[23].

The importance of acknowledging that health and wellbeing was not the responsibility of the 'Health and Physical Education' curriculum only and that this should be seen as the responsibility and priority of all educators and staff within the secondary school setting was highlighted in one of the six documents (16%), the Plan for Health and Wellbeing September 2014[23]. The plan states that "education settings play a broader role in health promotion and prevention, both through the curriculum and targeted initiatives"[23]. Both the Australian and Victorian 'Health and Physical Education' curriculum documents also discuss this point (Table 1). Under the heading of '*Importance of a healthy school environment*' the documents state that:

> "….Learning in Health and Physical Education supports students to make decisions about their health, wellbeing, safety and physical activity participation. If consistent messages are evident across the school and wider school community, this learning is reinforced. Students are also better able to practise and reinforce their learning in Health and Physical Education if teaching and learning in all curriculum areas and the whole school environment reflect the knowledge, understanding and skills delivered in the Health and Physical Education curriculum. A healthy

> and supportive school environment is developed through health-promoting school policies and processes, and partnerships with parents, community organisations and specialist services[22]."

This same idea was echoed in the DEECD Principles for Health and Wellbeing when referring to Health and Physical Education in the Victorian curriculum (Table 1)[24]. Whilst the DEECD document does not refer directly to the curriculum documentation it reiterates that teaching and learning in the 'Health and Physical Education' curriculum is enhanced if reinforced through the whole school environment.

> "Students are also better able to practise and reinforce their learning in Health and Physical Education if teaching and learning in all curriculum areas and the whole school environment reflect the knowledge, understanding and skills delivered in the Health and Physical Education curriculum[24]."

A commitment to upskilling school staff and teachers in health and wellbeing was also described in *Plan for Health and Wellbeing September 2014*[23]. As part of 'Reform Directions' the document outlines "a need to strengthen pre-service training and in-service professional development opportunities to support educators to attain a more consistent level of knowledge of health and wellbeing" and commitment to engage with universities to enhance teaching around health and wellbeing as child and adolescent health and wellbeing content is not a requirement in tertiary level teacher education courses[23].

No references to health and wellbeing forming part of the responsibility of all educators and school staff were found in the Australian or Victorian 'Design and Technologies and Digital Technologies' documents (Table 1)[21, 25]. Definitions of what was meant by a 'healthy school environment' or 'health promoting school' were absent across all six documents. The policies did not clearly identify strategies or examples of how schools could achieve a whole of school approach to health and wellbeing to

support learning outside of the Health and Physical Education classrooms. References to other documentation that may assist or guide schools were also not provided.

Commitment to the constructs of the Health Promoting Schools framework

Commitment to delivery of curriculum and school based initiatives across the HPS constructs of the curriculum, school environment and community partnerships were evident across the set of documents (Figure 1). Within the *curriculum* the 'Health and Physical Education' learning area focussed on the development of health-related skills and knowledge in a variety of health based areas such as physical health, mental health, safety and violence, spiritual health and culture and diversity. There was a particular focus on physical health. Both the Australian and Victorian 'Health and Physical Education' curricula described the requirement of dedicated time for physical activity.

> "Students should be provided with the opportunity to participate in physical activity on a weekly basis as a minimum part of the Health and Physical Education curriculum[22]."

The development of food knowledge and skills was emphasised in two of the six documents (33%), in both of the 'Design and Technologies and Digital Technologies' curriculum documents[21, 25]. There was greater emphasis on food and nutrition education within the 'Design and Technologies and Digital Technologies' curriculum compared to the 'Health and Physical Education' curriculum. Of nine sub-strands, 'food and fibre production' and 'food specialisations' account for two of the nine sub-strands (22%) in this curriculum area. The 'food and fibre production' sub-strand 'focuses on food and fibre as human-produced and harvested resources' and facilitates students' development of 'knowledge and understanding about the managed systems that produce food and fibre through creating designed solutions'. Whilst 'food specialisations' provides students with opportunities to 'understand the importance of a variety of food, sound nutrition principles, food preparation skills and food safety'[25]. The 'Design and Technologies and Digital Technologies' curriculum was designed to complement the 'Health and Physical Education' curriculum by enabling students to 'learn how to apply knowledge of the characteristics and scientific and sensory principles of food, along with the nutrition principles

described in Health and Physical Education, to food selection and preparation."[25] Whilst in the 'Health and Physical Education' curriculum 'Food and nutrition' formed one of twelve focus areas underpinning the six sub-strands. The 'Food and nutrition' focus area aims to enhance student health and wellbeing by developing students 'knowledge, understanding and skills to make healthy, informed food choices and to explore the contextual factors that influence eating habits and food choices[26].'

The 'Health and Physical Education' curriculum documents also encouraged schools and learning program designers to have their students relate their classroom based learnings to their *school environment,* and to explore opportunities for their school to assist in the delivery of initiatives that would reinforce key health and wellbeing messages (Figure 1). Suggested pathways or processes for disseminating ideas and discussions were not provided. Both 'Health and Physical Education' curriculum documents specifically stated that the broader school environment was essential in supporting health and wellbeing initiatives, as well as the health and physical education curriculum. However no links to the other documents included in the policy analysis were provided and the remaining four documents in the analysis did not reiterate this message.

References to the HPS approach are hidden to an untrained eye

The content analysis revealed a limited number of explicit references to the HPS framework or whole of school approaches across the six documents. None of the documents mentioned the Australian national HPS policy[13]. The HPS approach was mentioned only once across the six documents in the *DEECD Principles for Health and Wellbeing* document[24]. It was mentioned as part of the Inquiry which had informed the Principles of Health and Wellbeing.

> "The Victorian Parliamentary Inquiry into the Potential for Developing Opportunities for Schools to Become a Focus for Promoting Healthy Community Living (2010) recommended a broad framework for how the Victorian health-promoting schools approach could be supported through Victorian government, Catholic and independent schools[24]."

Two of the documents (33%), the two 'Health and Physical Education' curriculum documents, referenced the importance of the 'whole school environment' and 'health promoting school policies'.

> "The broader school environment should support the delivery of the Health and Physical Education curriculum. Learning in Health and Physical Education supports students to make decisions about their health, wellbeing, safety and physical activity participation. If consistent messages are evident across the school and wider school community, this learning is reinforced. Students are better able to practise and reinforce their learning in Health and Physical Education if teaching and learning in all curriculum areas and the whole school environment reflect the knowledge, understanding and skills delivered in the Health and Physical Education curriculum. A healthy and supportive school environment is developed through health-promoting school policies and processes, and partnerships with parents, community organisations and specialist services[26]."

Specific examples of initiatives that were based on the HPS framework in the Victorian context included the Achievement Program. The Achievement Program was mentioned in the two DEECD documents (33%)[23, 24]. However it was not explicitly stated in the documents that the Achievement Program was based on the HPS framework.

> "(The Achievement Program) provides a holistic approach to health promotion and prevention activities in early childhood and school settings[23]."

Implementation of whole of school approaches

Four of the six documents (67%) acknowledged the importance of approaching health and wellbeing initiatives with the aim of preventing poor health behaviours and outcomes for staff, students and their families. The documents included both of the 'Health and Physical Education' curriculum documents and the DEECD documents[22-24, 26]. This approach was referred to using a variety of terms across the set of documents such as 'strengths based approaches', 'population approaches' and 'holistic approaches'.

'Whole of school approaches' were clearly identified in the 'health and physical education' curriculum documents and in the DEECD documents where the six essential components of a health promoting education setting, as identified by the WHO, were outlined. Detail related to how a 'whole of school approach' could be achieved or references to more generalised information available about the approach and its potential applications in secondary schools were not present.

The analysis also revealed that the documents did not refer to each other across documents. Figure 2 illustrates how the six documents were linked in terms of the references they made to one another. While it was evident in the policy documents that the curriculum documents for each learning area were not designed to be read in isolation, whether the absence of cross-referencing may create difficulties for curriculum designers in seeing opportunities for whole of school initiatives is not clear. Moreover, the possible impacts of the absence of cross-referencing by the curriculum documents to the existing health and wellbeing documents also remains unknown.

The importance of acknowledging and developing local *community partnerships* to assist in the delivery and implementation of curriculum based activities and broader whole of school initiatives focused upon health and wellbeing was also evident in the 'Health and Physical Education' curriculum documents. However explanations related to how schools can work to create these partnerships or who they would be best to approach were not provided, nor were references to additional resources that may assist schools.

DISCUSSION

This interpretive policy analysis aimed to explore the extent to which government curriculum and health and wellbeing policies are likely to support secondary schools to improve health and wellbeing using the HPS framework. The analysis of the included Victorian policy documents identified two main frames of interpretation: (1) Policies show commitment to health and wellbeing yet (2) references to the HPS approach are hidden to an untrained eye. Implicit commitment to the delivery of health and wellbeing programs based upon the underlining principles and key constructs of the HPS framework

was identified. Limited explicit references to the HPS framework were identified across the documents and clear explanations of the HPS approach to support schools in implementation were absent. The findings of the study suggest that government policies currently encourage use of the HPS framework to improve secondary school students' health and wellbeing. However this support may be 'hidden' to policy actors and implementers with limited knowledge of the HPS framework due to the limited explicit references or guidance provided for implementation of a HPS approach in Victorian secondary schools.

Whilst a commitment to the HPS approach was found, the researchers' detailed knowledge and familiarity with the constructs of the framework may have influenced this outcome. It may be unfair to assume that the intended audience of the documents included in the analysis i.e. school based curriculum, teaching, and health and wellbeing staff, would have the same understanding without prior training or experience delivering the HPS approach. Previous literature from Australia and internationally suggests that school staff have limited understanding of the HPS approach and are not confident in designing health promotion based activities[9,29,30]. It is unlikely that the intended audience of the documents included in the analysis would have the same level of understanding as the researchers. Given the limited understanding of the HPS approach of school staff implementation must be easy and understandable in order to avoid failure. It could therefore be argued that explicit references and definitions, or explanations of the HPS approach, and how this could be implemented in schools within the policies are important. However no explicit references or definitions were identified. These findings are consistent with previous Australian research which reviewed written policy material where the HPS concept was specified and found that Australian policy documentation lacked definitional clarity on the HPS approach[31]. Since 2000 limited research related to implementation of the HPS framework in Australia has been published with none identifying implementation issues related to definitional clarity[14, 15]. Whether this issue has impacted upon implementation of the HPS approach in other countries also remains undocumented in the published literature. Thus this study provides the first snapshot of the potential inability of government policy to support health promotion in schools.

Efforts to raise awareness of the HPS approach with schools and senior policymakers in the education and health sectors has previously been identified as essential to the success of the HPS approach as government support may promote or constrain implementation[8]. The present study found that the curriculum and government policies were not self-referential. Our findings suggest that the absence of references across documentation from different sectors may reflect uncoordinated and/or limited support for the HPS approach. It may also suggest limited awareness by current stakeholders and policymakers of the potential benefits of implementing a HPS approach for improving student health and wellbeing ("health sector") as well as academic performance ("education sector") in Victorian secondary schools.

Limitations

The strengths of this study lie within the rigour applied to data collection and analysis. The study closely followed Yanow's interpretive policy analysis approach[17] and incorporated purposive and theoretical document sampling to ensure all relevant documents were included in the analysis. Independent coding was also conducted by the researchers to assist in validating the findings. A limitation of this study is that only publicly available documents were included. It is possible that other policy documents related to health and wellbeing and the curriculum for adolescents existed. However, since the reference lists of each of the included documents were reviewed it is unlikely key documents were missed that met selection criteria.

Conclusions

This study sought to explore the extent to which government curriculum and health and wellbeing policies are likely to support secondary schools to improve health and wellbeing using the HPS framework. The findings suggest that national policies on the HPS approach may need to be endorsed and referenced in related national and jurisdictional curriculum and health and wellbeing policies generated by government health and education departments to ensure adequate support. The findings also suggest that government health and education policies in Victoria currently may provide limited

or inadequate support for implementation of the HPS approach for adolescents, as policies are not cross-referenced nor provide detailed explanations of the HPS approach. These findings may be transferable to countries other than Australia where the HPS approach is encouraged but has experienced limited sustained success. These results may therefore inform future efforts to better connect the HPS approach with school based policies and may shed light on how well schools have been able to implement the HPS approach for adolescents.

IMPLICATIONS FOR SCHOOL HEALTH

This study found that current health and education policies may provide limited or inadequate support and guidance for implementation of the HPS approach for adolescents in schools. When considering implementation of a HPS approach secondary schools should be encouraged to seek out additional guidance, training and resources to properly enable implementation whereby student health outcomes are optimised and initiatives are planned to complement existing curriculum requirements and consider all constructs of the HPS framework.

Human Subjects Approval Statement

This research did not include human participants and therefore did not require approval of an ethics committee.

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APPENDICES

Appendix 1

Table: Description of Documents Included in Policy Analysis

Document Title	Description
ACARA The Australian Curriculum – Design and Technologies and Digital Technologies, Years 7 – 10, Version 8.2, 2016 [21]	• This curriculum document was the most up to date version of the 'Design and Technologies and Digital Technologies' curriculum available at the time of the research. • The learning area document was included as it outlines the key curriculum expectations for all Australian students in Years 7 – 10 in this area, which includes some health and wellbeing topics and content related to food and is commonly integrated with delivery of the 'Health and Physical Education' curriculum in secondary schools.
ACARA The Australian Curriculum – Health and Physical Education, Years 7 – 10, Version 8.2, 2016 [22]	• Version 8.2 of the Australian Curriculum was the most recently endorsed by the Australian Education Ministers at the time of the research. • The 'Health and Physical Education' learning area document was included as it outlines the key curriculum expectations for all Australian students in Years 7 – 10 and is the curriculum learning area where health and wellbeing topics are prioritised and most commonly delivered.
DEECD Plan for Health and Wellbeing – September 2014 [23]	• 'Wellbeing' was identified in the DEECD 2013-2017 Strategic Plan as one of four areas in which the DEECD wants to achieve world-leading outcomes. • This document outlines the DEECD coordinated reform agenda and action plan to establish a stronger system for supporting health and wellbeing of children and young people in education, training, development and child health services. • This plan outlines how the DEECD proposed to improve the effectiveness of the health and wellbeing services provided within education settings.
DEECD Principles for health and wellbeing – Underpinning effective professional practice across DEECD services, 2014[24]	• The DEECD has previously identified its shared role in the healthy development and education of a whole person and the importance of health as a precondition for learning and employment. • This document outlines the DEECD commitment to health and wellbeing and its principles of health and wellbeing. • This document was designed to provide services with support for training, joint planning, priority setting, service improvement, innovation and the development of common practices whilst offering a common language and approach to developing an education system in which health and wellbeing is embedded.

VCAA – The Victorian Curriculum – Design and Technologies and Digital Technologies, Years 7 – 10, Version dated 2016 [25]	• The Victorian Curriculum was endorsed at the end of 2015 for implementation from 2017 onwards. • This curriculum document was the most up to date version of the 'Design and Technologies and Digital Technologies' curriculum for implementation in Victorian schools at the time of the research and was based upon the Australian Curriculum. • The 'Design and Technologies and Digital Technologies' learning area document was included as health and wellbeing topics and content related to food are covered in this learning area and are integrated with delivery of the 'Health and Physical Education' curriculum in secondary schools.
VCAA – The Victorian Curriculum – Health and Physical Education, Years 7 – 10, Version dated 2016 [26]	• This curriculum document was the most up to date version of the 'Health and Physical Education' curriculum for implementation in Victorian schools at the time of the research and was based upon the Australian Curriculum. • The 'Health and Physical Education' learning area document was included as the majority of topics and content related to health and wellbeing are covered in this learning area in secondary schools.

Abbreviations: ACARA – Australian Curriculum, Assessment and Reporting Authority; DEECD – Department of Education and Early Childhood Development; VCAA – Victorian Curriculum and Assessment Authority.

Appendix 2

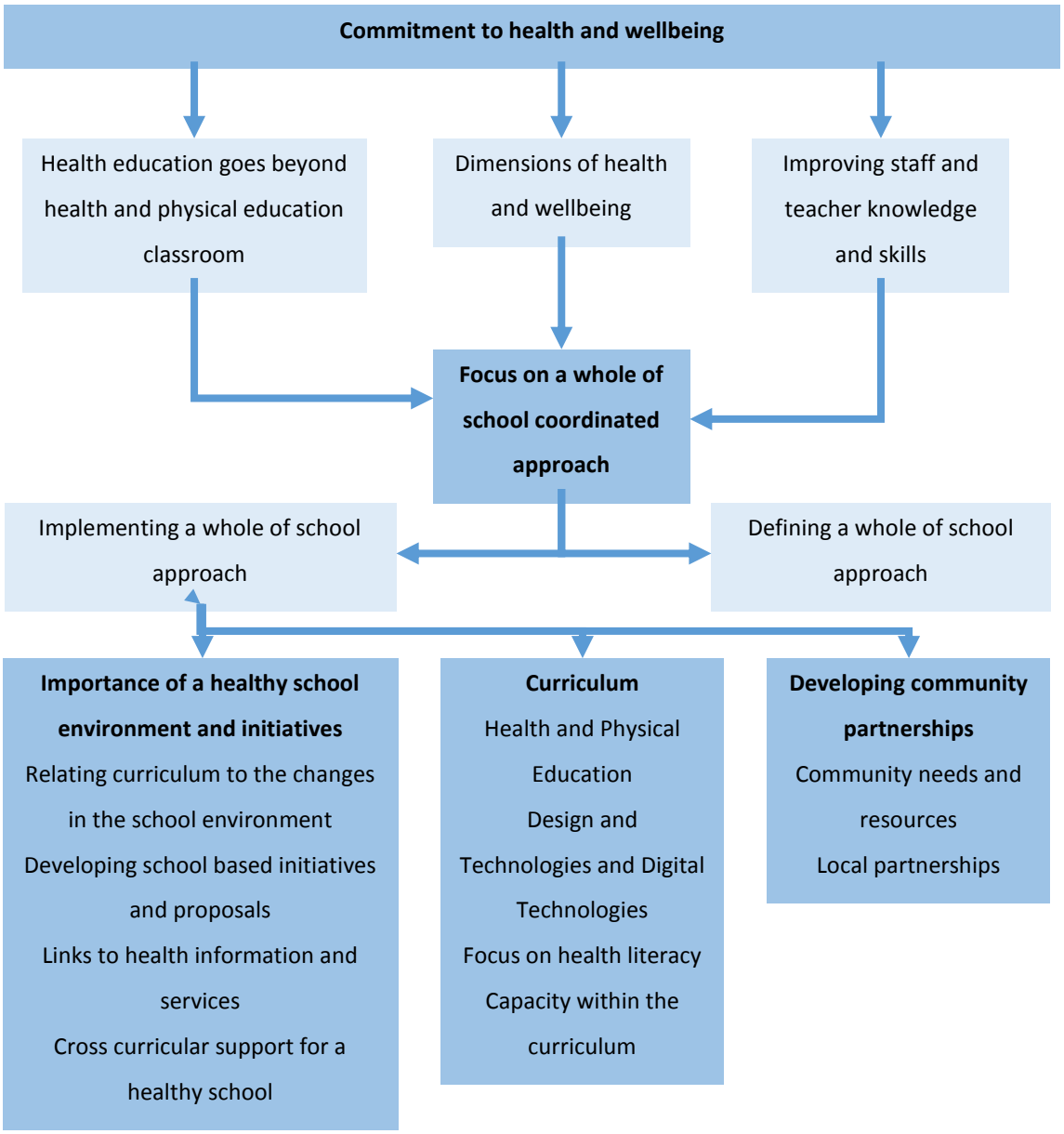

Figure 1. Thematic Findings From the Interpretive Policy Analysis.

Appendix 3

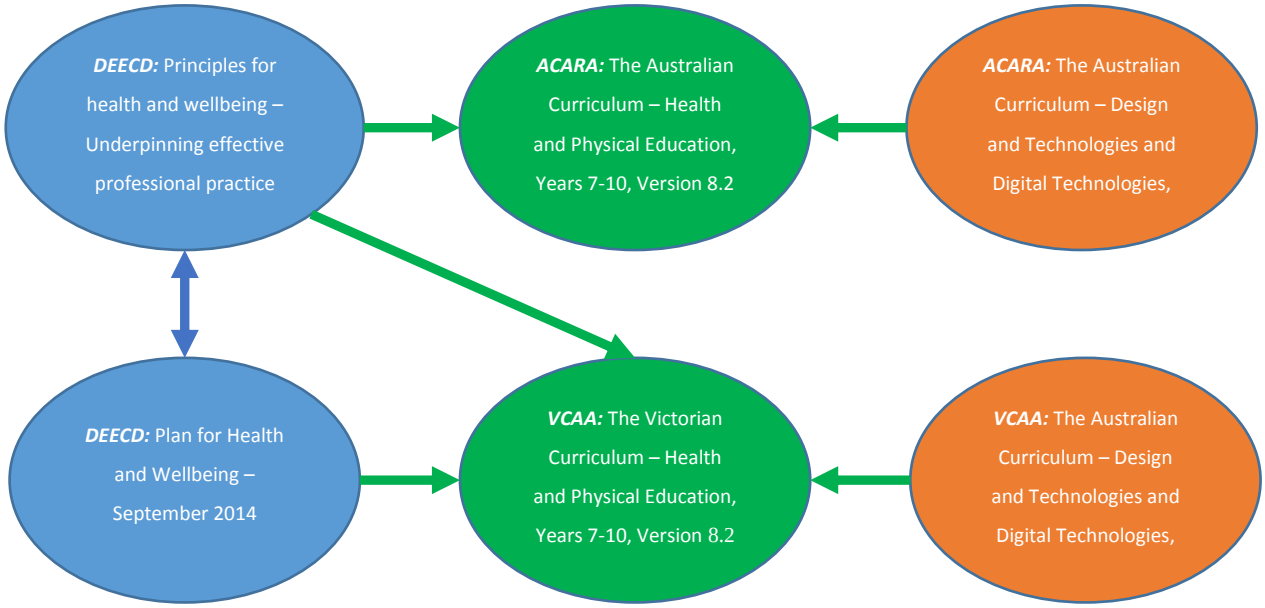

Figure 2: Identified Self-referencing of Documents Included in Policy Analysis. Abbreviations: ACARA – Australian Curriculum, Assessment and Reporting Authority; DEECD – Department of Education and Early Childhood Development; VCAA – Victorian Curriculum and Assessment Authority.

5.3 Reflexive quilting

The manuscript presented in section 5.2 identified that current government curriculum and health and wellbeing policies showed support for health and wellbeing in secondary schools. However there appeared to be limited 'explicit' support shown for the HPS framework with implicit references identifiable due to my extensive knowledge and experience with implementation of the HPS framework. This has been touched upon within the submitted manuscript. However in this reflexive quilting piece I have chosen to expand upon my reflections of these results and the additional questions the findings raised for me as a health promotion practitioner and researcher, and their contributions to informing my thinking for the next study.

Whilst I assumed an 'insider' role related to my knowledge of the HPS framework and whole of school approaches, my knowledge of how these policy documents are used within secondary schools to construct and coordinate year or school based learning programs is poor. In this way I was an 'outsider' (Breen, 2007). Based on my experiences working with school staff I was not surprised by the results and the absence of clear references to the HPS framework for two reasons. Firstly, throughout analysis I tried to remain cognisant of the original purpose for which each of the documents included in the analysis was written i.e. the documents were designed to either support and guide implementation of specific learning areas within the curriculum, or outline health and wellbeing objectives within Victorian education settings and not advertise the HPS framework. And secondly, because my own experiences and the literature have taught me that the core business of schools is the curriculum.

We know that healthy students perform better academically (Langford et al., 2017). I would argue that most teachers would feel strongly that they are equally responsible for nurturing their students' optimal academic performance as well as their health and wellbeing. However students and schools are constantly under pressure to perform, particularly in the areas of literacy and numeracy. Whilst it is widely recognised that there is no one strict definition of a health promoting school all highlight the roles of the three components of the curriculum, school ethos and environment, and partnerships in achieving successful initiative implementation (Langford et al., 2014). For me the current definitions conjure images of equal contribution of each of these components which is perpetuated by commonly used visual representations of the HPS framework (see Figure 2.1). Are these really a fair depiction of how HPS can and should be operationalised in secondary schools and therefore how this framework is reflected in policy? Moreover as health practitioners do we really have a proper grasp on the reality of working with schools if we continue to expect equal consideration of the three constructs? During this study I grappled with what I referred to as 'health promotion' speak and 'education' speak. I taught myself about the 'education' speak by pouring over websites and documentation that supported the

policies included in my analysis. It took a substantial amount of time (and I'll admit was not easy) and I had three main reflections.

Firstly, I like so many other health promotion practitioners, expect that school staff with minimal training will embrace and effectively implement the HPS framework. Yet I am not necessarily expected to undergo extensive training in designing school curriculum, pedagogy, school structures and the purposes of health and wellbeing initiatives in schools. Secondly, schools are expected to fit a lot into the curriculum. Whilst the Victorian curriculum provides an element of flexibility to meet specific student needs and expectations, curriculum planners have an incredibly difficult job in developing a curriculum and accompanying resources that both meets the curriculum requirements as well as the evolving requirements of their students. And thirdly, whilst schools provide a supportive environment for learning about and developing healthy behaviours, it is not their only responsibility. Parents, friends and our broader community also have a role to play.

Embracing the potentially greater influence of the curriculum on successful adoption and implementation of HPS initiatives may be necessary by health promotion practitioners. This may be complemented by more in-depth training of health promotion practitioners by school learning program designers. Moreover Penney et al. developed the Health Promoting Schools Ethos (HPSE) tool in acknowledgement of the challenges associated with defining and measuring school ethos and its complexity within the HPS framework (Penney et al., 2018). Albeit still in its infancy, the tool holds potential for measurement of critical components of different school contexts in relation to the HPS. The tool also provides opportunities for future exploration not only of the role of this construct in relation to overall successful implementation of the HPS framework, but of the relationships and prioritisation between constructs.

I was able to draw upon these reflections and insights in the next study I conducted, presented in Chapter 6. As will be discussed I conducted interviews with policymakers responsible for designing and implementing the Achievement Program in secondary schools. During these interviews I was careful to pay attention to references to the school curriculum and when these did not occur organically to ask participants about the role or importance of curriculum in the design process, to begin to explore how curriculum may be prioritised when designing school policies and HPS initiatives.

5.4 Summary

Chapter Five has presented the findings of a policy analysis which found that government curriculum and school based health and wellbeing policies currently provide little guidance or support for Victorian secondary schools in implementing the HPS framework. This is due to references to the HPS framework being implicit and more likely to be easily identified by practitioners with extensive experience and knowledge of the HPS framework. The findings raised questions related to why this is the case given recent government support for the HPS framework through implementation of the Achievement Program. Were these policies considered by policymakers in the design process and what else were policymakers considering? These questions informed the second empirical study conducted in this research, presented in Chapter Six.

Chapter Six – Study Two – Policymakers

6.1 Introduction

Chapter Five presented the findings of a policy analysis conducted of current government curriculum and school health and wellbeing policies in Victorian secondary schools. As per Yanow's interpretive policy analysis approach the study focused upon the 'policies' and 'what policies say' (refer to Figure 4.1). Chapter Six follows on from this chapter by presenting the findings of the second empirical study conducted in this PhD research which focused on 'policymakers' and 'intended policy meanings' (refer to Figure 4.1). The findings are presented as a submitted manuscript in section 6.2. The third reflexive quilting piece included in this thesis is presented in section 6.3 which reflects upon additional insights into the Achievement Program design process followed by a chapter summary in section 6.4

The study presented in this chapter builds upon the findings and questions raised from Study One – Policies presented in Chapter Five in which little support or guidance related to implementation of the HPS framework in Victorian secondary schools was identified. Reasons related to why this may be, if these policies and the HPS framework were considered by policymakers, and what other factors policymakers needed to consider during the Achievement Program design process were therefore explored in this study.

This qualitative study was designed to explore how policymakers designed a policy based upon the HPS framework intended for implementation in secondary schools. This study answered the following research question: What considerations underpinned policymakers' decisions for the design and implementation of a policy based on the HPS framework in secondary schools?

The manuscript presented here was submitted for publication to Health Promotion International in December 2018. It is presented here in Chapter Six in its submitted form (inclusive of references and journal specific headings).

6.2 An exploration of the Achievement Program design process from policymakers' perspectives

Meiklejohn, S, Choi, T, Peeters, A, Ryan, L, Palermo C. (Submitted December 9, 2018) Policymakers' perspectives on designing school based health initiatives for Victorian adolescents. *Health Promotion International.*

ABSTRACT

Initiatives based upon the Health Promoting Schools (HPS) framework have previously been successful in improving health and wellbeing yet there is little evidence of how these findings translate into policy. This study therefore aimed to analyse the considerations that underpinned policymakers' decisions for the design and implementation of a policy based on the HPS framework in middle and high schools in Victoria, Australia. Interpretive policy analysis was undertaken using interviews with a purposive sample of government and non-government policy actors. Interviews explored factors influencing program design and implementation and were analysed using thematic analysis. Ten in-depth interviews including 11 participants were conducted. The analysis revealed four themes. The Achievement Program was designed through (i) the establishment of *strategic collaborations and good governance*, involving people that made valuable and diverse contributions to the design process while acknowledging their *(ii) positions of power, (iii)* ensuring careful attention was paid to an *evidence informed program design,* and *(iv*), incorporation of *real-time feedback* from other settings. Policymakers believed this approach had the potential to improve policy adoption. There is a need to explore if this approach to policy development influences adherence and improves health outcomes

INTRODUCTION

The prevalence of overweight and obesity in children and adolescents is rapidly increasing globally (Chung et al., 2016). Poor dietary intake and physical inactivity are key contributing factors to the increasing incidence of overweight and obesity. Adolescence is a crucial period of human development where attitudes, beliefs and behaviours towards health are formed (Contento, 1995). Adolescents' health related behaviours are highly influenced by their peers and social and physical environments at school (Story et al., 2002). Schools are therefore an ideal setting for implementation of health and wellbeing initiatives aimed at addressing the underlying determinants of overweight and obesity.

Initiatives based upon the Health Promoting Schools (HPS) framework have previously been successful in improving health and wellbeing in children and adolescents (Inchley et al., 2007; Lee et al., 2007; Lister-Sharp et al., 1999; Nutbeam, 1992: Smith et al., 1992; Wang and Stewart, 2012; Wyn et al., 2000). The framework focuses on three areas of intervention within the school and local community: 1) school curriculum, teaching and learning, 2) school ethos, environment, and organisation, 3) school-community partnerships, families and services. A Cochrane review found HPS interventions focused on a variety of health areas (Langford et al., 2014). Positive effects on body mass index (BMI), physical activity, physical fitness and fruit and vegetable intake were found. Generally effects were small but have the potential to have benefits at population level. However much of the published literature has focused on young children with fewer focusing specifically on adolescent populations (Wang and Stewart, 2012; Langford et al., 2014).

Despite this large body of evidence on the impact of the HPS framework for improving health outcomes, implementation does not appear to be adopted as standard policy practice across school settings (Parsons et al., 1996; Rissel and Rowling, 2000). Challenges to implementation of HPS at a school level are documented yet there is little evidence of how these findings translate into policy (Keshavarz et al., 2010; Lee et al., 2001; Smith et al., 1992). This study therefore aimed to analyse the considerations that underpinned policymakers' decisions for the design and implementation of a policy based on the HPS framework in middle and high schools.

METHODS

The study applied interpretive policy analysis to explore considerations that underpinned policymakers' decisions for the design and implementation of a policy based on the HPS framework in middle and high schools, and why this was believed to be the best approach by these policymakers (Yanow, 2000; Yanow, 2007). The study was grounded in a social constructionist paradigm. Social constructionism is a theoretical research approach which examines the construction of knowledge as

people interact with the world. These multiple perspectives result in various ways of understanding and knowing (Crotty, 2015). The researchers applied this paradigm by acknowledging that knowledge is constructed by exploring and understanding multiple perspectives of the policy design process. This paradigm informed selection of Yanow's interpretive policy analysis approach which aims to explore the multiple meanings or perspectives of policies, and how these meanings are communicated through the policies (Yanow, 2000).

In 2013 the State Government of Victoria, Australia launched the 'Achievement Program policy' (hereafter referred to as the Achievement Program) based upon the HPS Framework as one of multiple interventions aimed at addressing increasing rates of overweight and obesity in Victoria. It was launched in response to a Parliamentary Inquiry (the Inquiry) instigated by the Victorian Parliament Legislative Assembly of Australia in 2009 into the potential for developing opportunities for schools to become a focus for promoting healthy community living. The Inquiry resulted in a number of recommendations including '*That the Department of Education and Early Childhood Development implement a formal recognition and award program to acknowledge and celebrate outstanding achievements by schools, communities and individuals in promoting healthy community living' (*Parliament of Victoria, 2010*)*. It was arguably one of the biggest investments in promoting health and wellbeing in secondary school settings in the state's history.

The Achievement Program was an award based voluntary policy aimed at implementation in workplaces, early childhood settings, primary and secondary schools. These settings were supported by government supported service providers and a localised workforce to progress through a series of eight steps working towards benchmarks for eight health priority areas. The health priority areas included: alcohol and other drug use, healthy eating and oral health, mental health and wellbeing, physical activity, safe environments, sexual health and wellbeing, sun protection, and tobacco control. Settings were supported to develop action plans to address the identified benchmarks for their selected priority areas. Once completed, settings were encouraged to submit evidence of their progress in order to be recognised as 'Health Promoting Schools' or 'Health Promoting Settings' (Department of Health and Human Services, 2019). Schools that successfully reach the benchmarks for their chosen health priority areas are presented with an award for display within the school. The Achievement Program differed from previous policy initiatives as it was focused on eight health priority areas unlike previous local and international interventions that have focused on nutrition and physical activity, mental health or drug education (de Silva-Sanigorski et al., 2010; Langford et al., 2014; Midford et al., 2012; Wyn et al., 2000).

Based upon the political context surrounding the Achievement Program's inception as a policy response to overweight and obesity in Victoria, we were interested to explore how the Achievement

Program was designed. More specifically we aimed to analyse how the Achievement Program was designed in a real political environment and what factors policymakers considered to inform the resulting design for the Victorian context. We were also interested in exploring how the HPS framework was considered and incorporated into the design of the Achievement Program with a specific focus in secondary schools For the purposes of this study secondary schools encompasses students in Years 7-12, also known as 'middle' and 'high' school. As previously mentioned secondary schools were identified as the focus of this research due to current limited body of literature related to HPS initiatives aimed specifically at adolescents.

Participants and recruitment

The researchers recruited a purposive sample of 'key informants' who held employment positions of interest to the research at the time of the study (Dew, 2007; Patton, 2002). Participants identified were responsible for or assisted with the development, implementation or monitoring of either the Australian or Victorian Secondary school curriculums or the Achievement Program. Representatives were identified from publicly available documents or websites relevant to the Victorian secondary schools curriculum or policies and strategies related to the Achievement Program. A total of 12 individuals (n=12) were identified as being able to provide information rich stories to inform our analysis.

Participants were initially recruited using purposive sampling (Dew, 2007; Patton, 2002). They were invited to participate in a one on one face to face interview with the research team via email correspondence that clearly detailed the aims and objectives of the research through the use of an explanatory statement and consent form. Snowball sampling was also used as participants who agreed to take part in the study were invited to suggest other potential participants at the conclusion of their interviews (Robinson, 2014). An additional three participants (n=3) were identified through snowball sampling. Of all potential participants, two declined to participate (n=2). An additional two withdrew their consent to participate (n=2) following their interviews leaving 11 individuals to participate in the study (n=11).

Data collection

Semi-structured interview questions were formulated based upon literature related to the HPS framework and publicly available curriculum and health and wellbeing policy documents. Questions related to the Achievement Program were based upon the authors' existing knowledge of the Achievement Program and information available on the Achievement Program website. In particular, researchers were interested in exploring the experience of the design of the Achievement Program as a policy response to implement the HPS framework, and the value, support and meaning given to the

design process by policymakers (Yanow, 2007). Questions were also informed by what was known about implementation and the constructs of the HPS framework identified in the literature. All questions were reviewed by the research team prior to the interviews commencing. Due to the variety of key informants identified question logics were tailored to reflect the specific areas of knowledge and expertise of the informant and the organisation they represented. Questions focused on topics related to their role within their organisation, role within the Achievement Program design process, and their experiences with the Achievement Program development and implementation within secondary school settings. All participants completed a brief demographic questionnaire at the end of their interview. Questionnaires collected data related to participants' job titles, employment status and tenure.

Interviews were conducted face-to-face at a time and location deemed mutually safe and convenient for the participant and interviewer. Procedures for the key informant interviews were informed by Bardach's recommendations for conducting policy research interviews given the potentially political nature of the topics being discussed during interviews (Bardach, 2012).

The interviews ranged in duration from 45 to 100 minutes. All interviews were audio-recorded and conducted by the first author. Written notes were taken by the interviewer during interviews which enabled the interviewer to capture topics requiring further discussion during the interview. As a health promotion practitioner with experience implementing the HPS framework the interviewer's notes focussed on capturing perspectives of the reality of participants' stories based on their lived experiences of designing the Achievement Program. All interviews were transcribed verbatim and validated by the first author against the recordings. Participants were then sent a copy of their interview transcript and given one week to notify the researcher if they wished to withdraw their consent for data for their interview to be used in the study, and to verify that the transcript was a true representation of the interview (Doyle, 2007).

Data Analysis

Thematic analysis of the interview transcripts was guided by Yanow's interpretive policy analysis approach informed by social constructionism (Yanow, 2000; Yanow, 2007). Interpretive approaches to policy analysis acknowledge that there can be various ways of understanding and viewing the world and therefore policies (Yanow, 2000; Yanow, 2007). For the purposes of this research the researchers were interested in analysing how the Achievement Program was designed as a policy response to implement the HPS framework and the value, support and meaning given to the design process by policymakers.

Using the lens of Yanow's interpretive policy analysis approach, thematic analysis of the interview transcripts provided the researchers with an opportunity to identify key informants' beliefs and interpretations of the Achievement Program design process and their experiences of the process (Yanow, 2000). Electronic copies of all interview transcripts were entered into NVivo 11 (QSR International, Doncaster, Victoria, Australia). Thematic analysis of the interviews employed a constant comparison approach. This involved coding all interview transcripts to identify emergent themes and codes. This was repeated after initial coding until no new themes emerged and enabled analysis of the differences between participants' responses (Boeije, 2002). This process was selected as it enabled the researchers to identify concepts and themes across the set of interviews that were not preconceived, to ensure that all salient themes or references to key aspects of the Achievement Program design process were captured, and supported the identification of meaning of policy across informants (Braun and Clarke, 2006; Creswell 2012).

The first author coded all of the interview transcripts. Text was coded, then codes were grouped as categories, and themes and sub-themes were identified from these categories that aimed to identify meaning in the data, typical of an interpretive approach. Three transcripts were coded and themed independently by a research assistant (TC) and an additional three transcripts were coded by the last author. Results of the independent analysis were discussed and consensus achieved with little difference in themes identified. As is typical of an interpretive policy analysis these themes were interpreted in the context of other literature in the discussion of this manuscript, to identify why the findings were perceived to be the best approach by policymakers (Yanow, 2007).

RESULTS

Ten in-depth interviews involving 11 participants were conducted. Two participants from the same organisation whose roles overlapped were interviewed together. Participants were sampled from a diverse range of organisations. Participants represented government departments of health and education (n=4), statutory curriculum authorities (n=2), government funded services (n=1) and not-for-profit organisations key to supporting secondary schools and their teachers (n=4).

The analysis revealed four themes. The Achievement Program was designed through (i) the establishment of *strategic collaborations and good governance*, involving people that made valuable and diverse contributions to the design process while acknowledging their *(ii) positions of power, (iii)* ensuring careful attention was paid to an *evidence informed program design,* and *(iv*) incorporation of *real-time feedback* from other settings. Figure 1 shows the relationships between the themes.

[Insert Figure 1: Themes from thematic analysis of the 11 interviews with policymakers]

Strategic collaborations and good governance

Most participants acknowledged that whilst health and wellbeing are important they are often not the first priority for secondary schools, which experience pressure to place greater importance on academic success and achievement. Participants therefore emphasized the importance of ensuring a collaborative approach which leveraged existing relationships between the Department of Health and Human Services (DHHS) and Department of Education and Training (DET). Several participants also described the importance of leveraging existing partnerships to ensure that the Achievement Program was implemented with joint responsibility.

DHHS and DET representatives (n = 4) also acknowledged how similarities in policy priorities between the organisations created an opportunity to work together. This was believed to have been enhanced by placing a DHHS representative in the DET two days per week. The DHHS representative commenced in their role just prior to commencement of the Achievement Program. The role was created by the steering group to support partnership work being done between DHHS and DET towards the Achievement Program and other preventative health initiatives. This was thought to ensure joint responsibility and a coordinated partnership approach to ensure policy requirements for both government departments were met. As such it was believed to be a key consideration in the design process that may contribute to increased adoption and adherence by schools as described by one participant below.

> *"[the] role was quite unique in the way it was conceived. In that although [they were] employed by Department of Health at the time [they] sat for half of the time at, what was then the Department of Education and Early Childhood Development….. So being able to sit in, sit over in the Department of Education meant that we could really understand what their vision, what their strategic intent was, what their objectives were….. It really meant that the development of the Achievement Program was a true partnership approach and it was really able to be embedded in both of the policy approaches of both departments." (Participant 1)*

DHHS and DET representatives also stated that drawing upon existing collaborations with organisations outside of government was also an important consideration. This included existing working relationships between the DET and Victorian Curriculum and Assessment Authority (VCAA) as well as with not-for-profit program and curriculum based associations. For example, in designing the 'healthy eating and oral health' priority area this included Home Economics Victoria and the Australian Council for Health, Physical Education and Recreation.

Developing new collaborations with Victorian academics, those in the field of health promotion, and Government statutory authority representatives, was also deemed essential to the Achievement

Program's potential success in schools. Participants perceived these collaborations would be strategic for the Achievement Program's implementation by providing greater insight into the existing health promotion operations and capacities of schools. Collaborations with those experienced in implementing similar local (Victorian) school based programs were also valued in the design process. This included organisations and health professionals who had worked on recent government funded initiatives that had also used settings based health promotion frameworks.

Participants stated governance structures were put in place to support these strategic or intended collaborations, and aimed to ensure a smooth and progressive design process. Structures included a senior advisory group composed of senior management staff, a steering group composed of project managers and officers, and an expert advisory panel consisting of academics and experts in Victoria.

> *"All of the work on the framework was really heavily informed by an expert advisory panel which brought together real leaders in the Health Promoting Schools framework which we were lucky happened to just be located in Victoria…. So we had a really rich kind of context and experience in Victoria to draw from." (Participant 3)*

In addition to the establishment of governance structures a key consideration by policymakers during the design process was the establishment of agreements between DHHS and DET, as well as with the service provider for the Achievement Program, Cancer Council Victoria. Having governance structures in placed aimed to establish processes for communication, ensure existing policies were considered and/or followed, and build capacity for implementation of the Achievement Program.

The collaborative approach to the design of the Achievement Program was not without its challenges. Whilst there was acknowledgement of the different priority placed upon health and wellbeing in schools by participants these differences were not always easy to accommodate. Each agency, department or organisation involved in the design process had had their own perspectives on how the Achievement Program should be designed and implemented. This was driven by different incentives or agendas for being involved in the design process. For example, participants from statutory curriculum authorities were keen to ensure that the Achievement Program linked with the Victorian curriculum. DHHS and DET representatives reported challenges in negotiating to find a middle ground that would cater to the needs of the various stakeholders, without losing sight of the overall agenda, of ensuring that health promoting schools were reintroduced in to Victorian secondary schools.

> *"…. it was really about finding a place that all of our partners around the table would say 'yes that's what we feel comfortable with'. And so some of, some of the additional detail was a*

concession to getting people over the line as well or organisations to say 'yes, yes ok we'll line up with that.' (Participant 1)

Interestingly when exploring policymakers' considerations the level of commitment that different government departments and supporting organisations placed on involvement in the Achievement Program varied. For example, according to participants from DHHS and DET (n = 4) the DHHS had dedicated funding for the Achievement Program and were able to fund staff internally to drive the design process. Participants from DHHS believed they established a balanced partnership approach to all aspects of the design and implementation process with the DET. School based health and wellbeing is considered to be part of the mandate of certain departments within the DET and therefore within the existing roles of DET staff. The DET had shown evidence of valuing the Achievement Program and their involvement during the design process. However participants from the DHHS and DET did not describe consensus regarding 'ownership' or 'responsibility' for the Achievement Program, which may potentially lead to leadership issues not considered by policymakers during the design process as implementation continues. As one participant stated "we *oversaw the whole development of it ….and now… we're a bit more hands off and Department of Health has that main relationship with them." (Participant 2)*

Change over in staff at government departments and supporting organisations was reported as a challenge to the design process by participants from statutory curriculum authorities and not-for-profit organisations. When organisational structures within the DHHS and DET changed, consultations were limited and roles became unclear. The entire process was also believed to take longer due to both government departments (health and education) needing to sign off on all decisions.

Overall there was a sense from participants that a key feature of the design process was prioritisation and placing importance on the investment of time in ensuring buy-in and interest from key stakeholders. Participants from the DHHS and DET in particular believed that this approach would help to keep all key stakeholders well informed about the progress of the Achievement Program's design, and subsequently contribute to optimising the Achievement Program's potential success within secondary schools.

Positions of power

The majority of participants explained that ensuring that all relevant and potential key stakeholders were included was key to the Achievement Program design process. Acknowledging stakeholders' knowledge, perspective or personal beliefs towards school based health and wellbeing initiatives, and the role or importance of the HPS framework was also essential. This was important for ensuring a

shared understanding of the purpose and expectations of the Achievement Program and definition of the HPS framework in Victorian schools.

Participants that did not represent the DHHS or DET believed that representatives from DHHS and DET initiated engagement or selection of stakeholders based upon a range of factors. These included stakeholders' positions at the time or potential political influence to drive and advocate for the Achievement Program agenda. For example, the Achievement Program steering group was co-chaired by the Principal Medical Advisor for children and young people from the DET and the Senior Public Health Advisor from DHHS. Participants from the DHHS and DET reported the Achievement Program's importance was evident through executive level commitment from both the DHHS and DET during the design process.

> *"It was really quite significant that [the steering group] was co-chaired between Department of Health and Department of Education – it was very deliberate that that was the case. Because from the get go we needed to really make sure that this [was] not a health intervention in a school….we were really trying to sort of set this up as a joint policy approach for both of the departments." (Participant 1)*

The DHHS and DET participants identified representatives from the VCAA as influential stakeholders. The VCAA work closely with the DET and secondary schools and had previously shown support for implementation of whole of school approaches to health and wellbeing in Victorian curriculum documentation. Participants stated the inclusion of curriculum authority representatives was essential to explain the intricacies of curriculum design and implementation, and provide context to the vast amount of variation across individual schools and school sectors, due to the flexible nature of the prescribed curriculum in Victoria that may impact upon policy adoption and adherence. One participant described the purpose of this part of the design process as being *".....really about them nuancing the framework to see how it intersected with the curriculum requirements, how it met with what schools reporting requirements were back to the Department and that was around their school accountability and improvement framework at the time." (Participant 3)*

This theme supports the first theme identified which highlighted the importance placed on ensuring buy-in from key stakeholders as part of the design process and plans for implementation of the Achievement Program. However it goes a little further to suggest the importance of having buy-in from those stakeholders with the greatest potential, in terms of advocating for funding or integration into new or existing legislative policy.

Evidence informed program design

Several participants expressed that high importance was placed on ensuring the Achievement Program design was informed by evidence based best practice, in particular the International Union for Health Promotion and Education (IUHPE) guidelines for HPS. This was believed to be important to maximise opportunities for the program to be seen as supporting implementation of health and wellbeing and nutrition initiatives in secondary school and complementing existing curriculum and policy requirements for secondary schools.

Participants explained consultation of recently published literature related to the HPS framework and examples of its implementation were key to the design process. This included consultation of the IUHPE guidelines for promoting health in schools as well as documentation related to local Victorian HPS and state-wide initiatives. Local initiatives included Mind Matters, Kids Go For Your Life (KGFYL), and 'It's Your Move' (de Silva-Sanigorski et al., 2010; Millar et al., 2011; Wyn et al., 2000).

Many participants also reported that ensuring the Achievement Program was not seen as an 'additional' program but rather as a supportive framework which complemented or aligned with existing health and wellbeing initiatives in secondary schools was an important consideration. Existing policies consulted included the Victorian Public Health and Wellbeing Plan, the School Accountability Improvement Framework and Victorian Curriculum for the 'health and physical education' learning area. The recommendations from the '*Parliamentary inquiry into the potential for developing opportunities for schools to become a focus for promoting healthy community living'* conducted by the Victorian Parliament Legislative Assembly of Australia Education and Training Committee in 2009 were also closely considered during the design process by policymakers.

> *"There was also a parliamentary inquiry around that time into the importance of…..Victoria should be implementing a Health Promoting Schools approach. And Department of, DEECD responded to those parliamentary inquiry recommendations, either supporting or in principle supporting all of them. So there was a clear recommendation that Victoria should reinvigorate a Health Promoting Schools approach for all schools and that they should consider not just primary school….." (Participant 4)*

Participants reported a key design component was stakeholders' apparent dedication to minimise or alleviate expected barriers to engagement, and issues associated with capacity and sustainability of the Achievement Program in secondary schools. Participants described various strategies incorporated to minimise or alleviate barriers to engagement such as the provision of resources and opportunities for capacity building, the establishment of support through relevant organisations, and integration of the Achievement Program into broader health and wellbeing activities. These strategies

were all embedded within the design as part of a systems approach. Suitable supports to assist schools to implement the Achievement Program and their chosen health priority areas were also considered as part of the design by the steering committee and expert advisory panel in an attempt to optimise future adoption and adherence. This included funded health promotion officers and staff members who had access to training and capacity building programs and resources. Local forums and networks were also established which provided opportunities for engaged schools to liaise with other schools and health professionals working with the Achievement Program. As one participant described *"We did face to face workshops and we ran those in conjunction with the local [Achievement Program] officer. They were great because schools came into their local council to attend the workshops, they got to meet local [Achievement Program] staff and make links….Then the local officer could then talk about what was going on and how they could support the school." (Participant 5)* No participants described the award element of the Achievement Program as part of best practice or as a strategy to enhance policy adoption.

Real-time feedback

The last consideration highlighted by participants was the importance of drawing upon real-time feedback. The Achievement Program commenced in early childhood settings and primary schools before implementation in secondary schools. Many participants believed feedback regarding all aspects of the program in these settings informed the design of the Achievement Program for secondary schools and its accompanying resources. The real-time feedback was received from organisations assisting early childhood or primary school settings or localised project officers in an adhoc manner. Feedback was also received from forums and localised events where the Achievement Program was discussed. Localised discussions facilitated between local government representatives, health promotion workers and school staff provided opportunities for consideration of the practical implications of the program in schools. Local discussions also reiterated the need for attention to the state and local school curriculum and health and wellbeing policies, and the rapidly changing school environment and mounting pressures on schools. For example, one participant described the process of incorporating feedback as *"an incredible kind of iterative process where we really kind of kept going back and forth and eventually we found out….we settled on a place, taking on all the feedback from our partners." (Participant 1)*

This ensured that key policies governing schools and any changes to those policies were carefully monitored and considered. Participants also believed this was essential for ensuring the 'health' and 'education' environments in which secondary schools were operating were adequately considered to maximise opportunities for program uptake, success and sustainability. Whilst some participants eluded to plans for evaluation and sustainability of the Achievement Program they were not explicitly described by participants.

DISCUSSION

This study aimed to analyse the considerations that underpinned policymakers' decisions for the design and implementation of a policy based upon the HPS in middle and high schools. Using interpretive policy analysis of interviews the HPS framework, nuanced through the Achievement Program, was identified to have been designed with considerations to (i) ensure *strategic collaborations and good governance* were established, involving people that made valuable and diverse contributions to the design process while acknowledging their *(ii) positions of power, (iii)* ensuring careful attention was paid to an *evidence informed program design,* and *(iv*) incorporation of *real-time feedback* from other settings. Policymakers believed that this approach to policy development would help to improve policy adoption and progression through the Achievement Program in secondary schools. Despite incorporating feedback from other settings and building the design upon evidence based best practice policy adoption, adherence and translation within secondary schools remains unknown due to the initiative's infancy.

This is the first study known to the authors to explore policymakers' contributions to the development of the Achievement Program for secondary schools based upon the HPS Framework. The Achievement Program design process appears to have been consistent with the recent literature and Cochrane review which strongly supports implementation of school based health and wellbeing initiatives, based upon the HPS Framework and IUHPE guidelines for promoting health in schools (International Union of Health Promotion and Education, 2009; Langford et al., 2014; Wang and Stewart 2012). The design process also appears to have been consistent with systems approaches to policy development as described by Colebatch, whereby the combination of the policy imperative and strong evidence based framework have stimulated the policy response by policymakers (Colebatch, 2006).

Policymakers from the DHHS and DET believed placing a DHHS representative in the DET during development of the Achievement Program vastly improved the working relationship between the two departments. It was believed to contribute to a more coordinated partnership approach and sharing of similar policy priorities. This finding was consistent with findings of an analysis of public submissions to the Inquiry which pointed to a need for strong leadership from the DHHS and DET (Bruce et al., 2012). This finding is also consistent with implementation science and knowledge broker literature (Meyer, 2010). Implementation science recognises that new research findings cannot contribute to improved health outcomes unless adopted by health professionals into their practice (Meyer, 2010). Knowledge brokers are people or organisations that facilitate the creation, sharing and use of knowledge (Sverrisson, 2001). Knowledge brokers facilitate the translation of research findings by creating and maintaining links between researchers and their audience (Lomas, 1997; Meyer, 2010). In this research the DHHS representative appeared to have acted as a knowledge broker between the

DHHS and DET and with all policymakers engaged in the design process, including researchers and academics (Meyer, 2010; Sverrisson, 2001). By drawing on and creating links, the DHHS representative enhanced translation of knowledge between policymakers and translation of published literature related to the HPS framework. This appears to have been fundamental for policy development.

The findings of our work are inconsistent with existing evidence in public policy implementation. Previous public policy implementation evidence suggests there is a lack of emphasis on prevention, insufficient evidence base and researchers are isolated from the policy making process. Previous implementation evidence also suggests poor governance systems, a lack of resources and funding, and a lack of organization knowledge regarding skills required for implementation (Brownson et al., 2009; Phulkerdab et al., 2017). Our findings may be inconsistent with this evidence due to the DHHS and DET designing the policy together. Health and education are inextricably linked and as such necessitated an inter-government collaboration (Langford et al., 2014). Good governance structures, resourcing and funding, and a strong focus on prevention were therefore present during implementation. Policymakers also described a consultative process that used the evidence to inform outcomes underpinned by governance and feedback. The Achievement Program was also designed for voluntary implementation. It was designed as a platform for secondary schools to implement the HPS framework and health and wellbeing initiatives within the greater context of a government response to increasing rates of overweight and obesity. It was not designed as part of mandatory health or education department legislation. Great importance was placed by policymakers on the role of ensuring buy-in from key stakeholders, particularly people considered to be in positions of 'power'. This was proposed as a way of optimising successful implementation of the Achievement Program in secondary schools. However it appears that the government's true 'power' over implementation is limited by the fact that the Achievement Program is not mandated in secondary schools, which could call into question the true 'power' or validity of the design approach used. The value of mandatory versus voluntary policy adoption in this context warrants further exploration. It is also important to acknowledge the autonomy and responsibility bestowed to schools by government and curriculum authorities to design and implement appropriate learning programs to address their students' needs, thus acknowledging the pivotal roles and 'power' school context and school leadership elicit over public policy implementation in schools, which was not explored in this study.

Policymakers suggested the approach used to develop the Achievement Program would improve policy adoption in secondary schools. They suggested that their approach was novel within the Victorian government when compared to previous government approaches. They also suggested that this would be achieved as a result of aligning the Achievement Program with existing health and wellbeing policies and curriculum requirements. Ensuring key influential representatives from both

departments of health and education were involved was also identified as an important step. There is currently also limited evidence related to implementation of the HPS approach in Victorian secondary schools (de Silva-Sanigorski et al., 2010; Wyn et al., 2000). Moreover there is currently limited evidence of the impacts of the Achievement Program, and the number of secondary schools that have registered or achieved recognition as a HPS, thus providing opportunities for future research. Whilst evaluation of Achievement Program uptake is possible, evaluation of potential 'increases' in adoption and adherence in Victorian secondary schools as a result of this approach to the Achievement Program's development remains difficult. Evaluation of multifaceted prevention interventions such as those based upon the HPS framework are complex as it is difficult to disentangle the influences of each element and synthesize process and outcome findings (de Silva-Sanigorski et al., 2010; Mukoma and Flisher, 2004; Nutbeam, 1998). An added challenge for this evaluation includes the absence of a comparable 'control' policy against which to measure Achievement Program adoption and adherence.

The importance placed by policymakers on evidence based best practice and involving academics, research experts and curriculum planners in the design process is not a novel finding, as previous state and national policy initiatives have drawn upon interdepartmental partnerships and stakeholder reference groups (Flood et al., 2009; Midford et al., 2012; Ollis, 2014). Interdepartmental and inter-sectoral collaborations have previously been identified as a key ingredient for successful and sustainable policy implementation (Robertson, 2006). It is also emphasized in the first strategy of the Ottawa Charter where 'building of healthy public policy' places responsibility on policymakers from all government sectors to be accountable for policy decisions and their health impacts (WHO, 1986). However this paper offers novel insight into the policy development process at a state government level and collaborative approach between the DHHS and DET. It will be important to evaluate the uptake of the Achievement Program and if this policy development approach has resulted in greater adoption. It will also be important to evaluate the Achievement Program's impact on health and wellbeing outcomes and students' academic performance. Only once this research has been conducted will the true importance and contribution of this study's findings be understood.

Limitations

This study involved close examination of a policy developed and funded under the elected Victorian State Government in Australia. Relevant government representatives were invited to participate. Unfortunately some key representatives in senior positions were unavailable to participate and representatives in middle management positions were included. Due to the political nature of this research another important limitation to acknowledge is the potential threat to validity of findings as representatives may have provided 'ideal' responses, and not truthful or transparent accounts of 'actual' events and decisions. This risk was minimised by researchers by asking the same questions of

participants and using a constant comparison method of analysis of responses to identify discrepancies (Boeije, 2002). The lead author who conducted all interviews also prompted representatives for further information when discrepancies in accounts were identified during interviews, and used reflexivity and knowledge of the roll out of the program to compare data with reality (Berger, 2015).

CONCLUSION

This study sought to analyse the considerations that underpinned policymakers' decisions when designing and planning implementation of the Achievement Program for Victorian secondary schools in Australia. The findings suggested importance was placed on ensuring strategic collaborations and good governance as well as including key stakeholders in 'positions of power', mostly government representatives. This would be considered consistent with a best practice approach. Consideration of evidence based best practice and academic research as well as incorporation of feedback from other settings was also important. These findings may be transferable to countries other than Australia that have limited experience or success implementing the HPS framework in secondary school settings. However further research into the impact on adoption of the policy and health and wellbeing outcomes for secondary school students are necessary.

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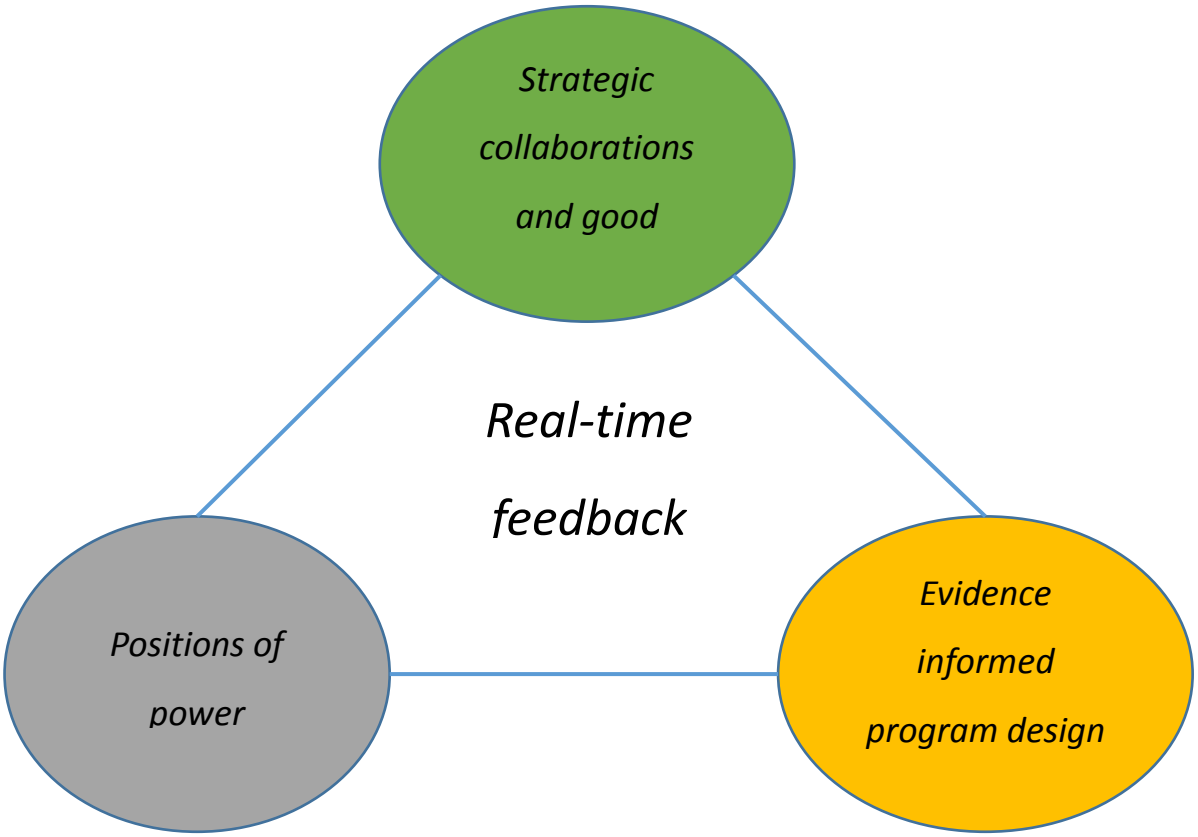

Figure 1: Themes from thematic analysis of the 11 interviews with policymakers

6.3 Reflexive quilting

The manuscript presented in section 6.2 described key considerations that underpinned policymakers' decisions when designing the Achievement Program. The importance of an *evidence informed designed* and evidence based practice has already been explored in the manuscript. However in this reflexive quilting piece I have chosen to delve deeper into my insights and reflections on these findings and how they informed the next stage of this research.

The findings suggest that the Achievement Program adhered to evidence based practice in relation to approaches to policy development and implementation science, and the role of knowledge brokers in translating evidence from academics and researchers. The findings also suggested that policymakers believed their approach to policy development would increase policy adoption as they had identified and addressed common issues with public policy implementation. These included establishing good governance structures, having a strong focus on prevention (of overweight and obesity) and allocation of resourcing and funding. From my perspective these findings suggest an underlining assumption by policymakers that their actions may have been enough for successful policy adoption and implementation throughout Victorian secondary schools. But was this actually the case? Was the policy, with its initially proposed and current funding and resourcing model, really enough?

Given these findings the scalability of the Achievement Program is worth considering. Through my own experiences of supporting secondary schools to deliver school based health promotion initiatives, I saw that implementation required intensive hands on support by local skilled health promotion practitioners such as myself. As a result I was only able to assist a few schools at any one time in implementation. Scalability has previously been defined as 'the ability of a health intervention shown to be efficacious on a small scale and or under controlled conditions to be expanded under real-world conditions to reach a greater proportion of the eligible population, whilst retaining effectiveness.' (Milat et al., 2013) As already discussed, policymakers believed that through adherence to evidence based best practice and allocation of resourcing and funding that the Achievement Program would achieve wide spread adoption and adherence. Milat et al. (2016) developed a guide to scaling up population health interventions. The first step involves *scalability assessment: assess the suitability of the intervention for scaling up* or assessment of acceptability and feasibility of scaling up the intervention. This includes judgement of whether an intervention could realistically be scaled up given what is known about its costs, workforce requirements, time required, infrastructure requirements and acceptability to stakeholders is made. This step also explores assessment of effectiveness i.e. determining effectiveness, unintended consequences and intervention effect size. Based on my own experiences I would suggest that whilst the Achievement Program was designed to be implemented

throughout all of Victoria, the costs and workforce requirements required to achieve effective state-wide implementation and impact upon rates of overweight and obesity in Victoria may be too great. If policy makers see the merit and benefit in the Achievement Program in secondary schools resourcing a workforce equipped to guide them or reorientating an existing workforce is required.

I have already acknowledged that the voluntary nature of the policy is consistent with the Victorian DET desire to ensure flexibility within the curriculum and learning programs of schools. However it would also appear that voluntary implementation is consistent, for the most part, with how the HPS framework is being adopted worldwide. Interestingly implementation is mandated in Taiwan (Liao et al., 2015; Liu et al., 2019). Whilst the currently limited evidence identifies varying levels of adherence to the HPS approach in Taiwanese schools and the impacts have not been extensively explored, I cannot help but wonder what impact mandatory implementation of the Achievement Program may have, not only on health outcomes for adolescents, but also on academic achievements.

It is also important to acknowledge the potential impact of the Achievement Program being delivered within the broader Healthy Together Victoria initiative. Healthy Together Victoria was based upon a complex adaptive systems approach whereby multiple interventions were delivered throughout Victoria with supporting policies and resources. It was a unique approach to health promotion in Victoria. The potential impact on uptake of the Achievement Program by secondary schools therefore remains unknown i.e. was uptake of the Achievement Program high even though it was a voluntary policy because it formed part of Healthy Together Victoria? I am therefore interested to explore secondary school's understanding and awareness of Healthy Together Victoria and if this factored into their decision making for electing to implement the voluntary policy.

I was able to draw upon these reflections and insights in the next study, presented in Chapter Seven. Exploring 'how' and 'why' the secondary school had elected to implement the voluntary policy was a key question arising from this reflexive thinking. Gaining a better understanding of the resourcing required to support Victorian secondary schools' implementation of 'best practice' policy was also a key question.

6.4 Summary

This chapter has presented the findings of a qualitative study conducted with policymakers of the Achievement Program. The findings suggest that policymakers believed their approach to policy development would improve adoption and adhesion to the Achievement Program in Victorian secondary schools. However uptake and adhesion to the Achievement Program remains unknown, as does whether or not Victorian secondary schools are implementing the Achievement Program as intended by policymakers. The next chapter, Chapter Seven presents the third and final empirical study conducted in this PhD research which aimed to explore some of these unknowns by exploring the experiences of Victorian secondary schools implementing the Achievement Program.

Chapter Seven – Study Three - Policy implementers

7.1 Introduction

As described in previous chapters, the HPS framework is an effective whole of school approach to improving health and wellbeing (Langford et al., 2014). To date the majority of HPS research relates to implementation aimed at young children with very little focused on adolescents engaged in secondary schools (Langford et al., 2017). State and national policy support for the HPS framework, in addition to local HPS networks, can greatly impact upon successful implementation of the HPS framework (Deschesnes, Martin et al. 2003; Inchley et al., 2007; Lee et al., 2006; Parsons et al., 1996; Turunen et al., 2017). Yet the intent of these policies remain hidden to an untrained eye (see Chapter Five). The State Government of Victoria, Australia launched the Achievement Program, based upon the HPS framework, as a voluntary policy to address increasing rates of overweight and obesity in Victoria. The Achievement Program was possibly one of the government's biggest investments in the HPS framework and continues to be implemented with reduced resourcing and funding (Clarke et al., 2018). The key policymakers described an evidence based approach to this policy development focused upon strategic collaborations and good governance, and inclusion of stakeholders that would facilitate support for and adoption of the policy (see Chapter Six).

Since its introduction in 2012 little data related to progression and uptake of the Achievement Program in schools, particularly secondary schools engaging with adolescents, has been released. Therefore this third and final study of this thesis aimed to explore the experiences of secondary schools implementing the Achievement Program. More specifically we sought to begin to explore how and why secondary schools were implementing the Achievement Program and the factors contributing to their successful 'recognition' as a HPS.

As described in Chapter Four this study applied interpretive policy analysis and piloted the use of a case study approach to gain in depth understanding of the experience of implementing the HPS framework in a secondary school. As per Yanow's interpretive policy analysis approach the study focused upon the 'policy implementers' (refer to Figure 4.1). The methodology for this study was described earlier in Chapter Four. The findings are reported as a single case study in Section 7.2 to allow greater depth of reporting of the qualitative findings rather than being confined to word limited of a submitted manuscript. A discussion of the findings with limitations to this approach and future

research opportunities are described in section 7.3. The chapter concludes with a reflexive quilting piece in section 7.4 and summary in section 7.5.

7.2 Findings

Of the ten schools identified as having achieved recognition in the Achievement Program for at least one HPA two schools expressed interest in participating in this pilot study. One school was not able to participate due to inability to commit to interviews and lack of staff time. One secondary school located south of Melbourne in regional Victoria was recruited to this pilot case study. The secondary school offered coeducational schooling to approximately 1300 students across Years Seven to Twelve (7-12). The school registered with the Achievement Program in 2015 but did not commence activities towards their chosen health priority areas until the beginning of 2018. At the time of data collection the school had achieved recognition for three of the eight (n=3) HPAs in the 2018 school calendar year: mental health and wellbeing, safe environments and tobacco control. The school was working towards the HEOH and physical activity HPAs at the time of data collection.

Analysis of the case study data (Table 7.1) revealed themes related to 'why' and 'how' the recruited secondary school was voluntarily implementing the Achievement Program and 'factors' contributing to their success in three health priority areas were identified. These themes are presented in Figure 7.1 and described below.

Table 7.1: Summary of Study Three data collection

Interviews	Document collation	Drawings	Observations
1 x group interview 1 x individual interview	5 x newsletter articles 4 x school based policies 1 x staff presentation outline	1 x annotated diagram	1 x observation tool 5 x field observation notes
n = 2	n = 10	n = 1	n = 6

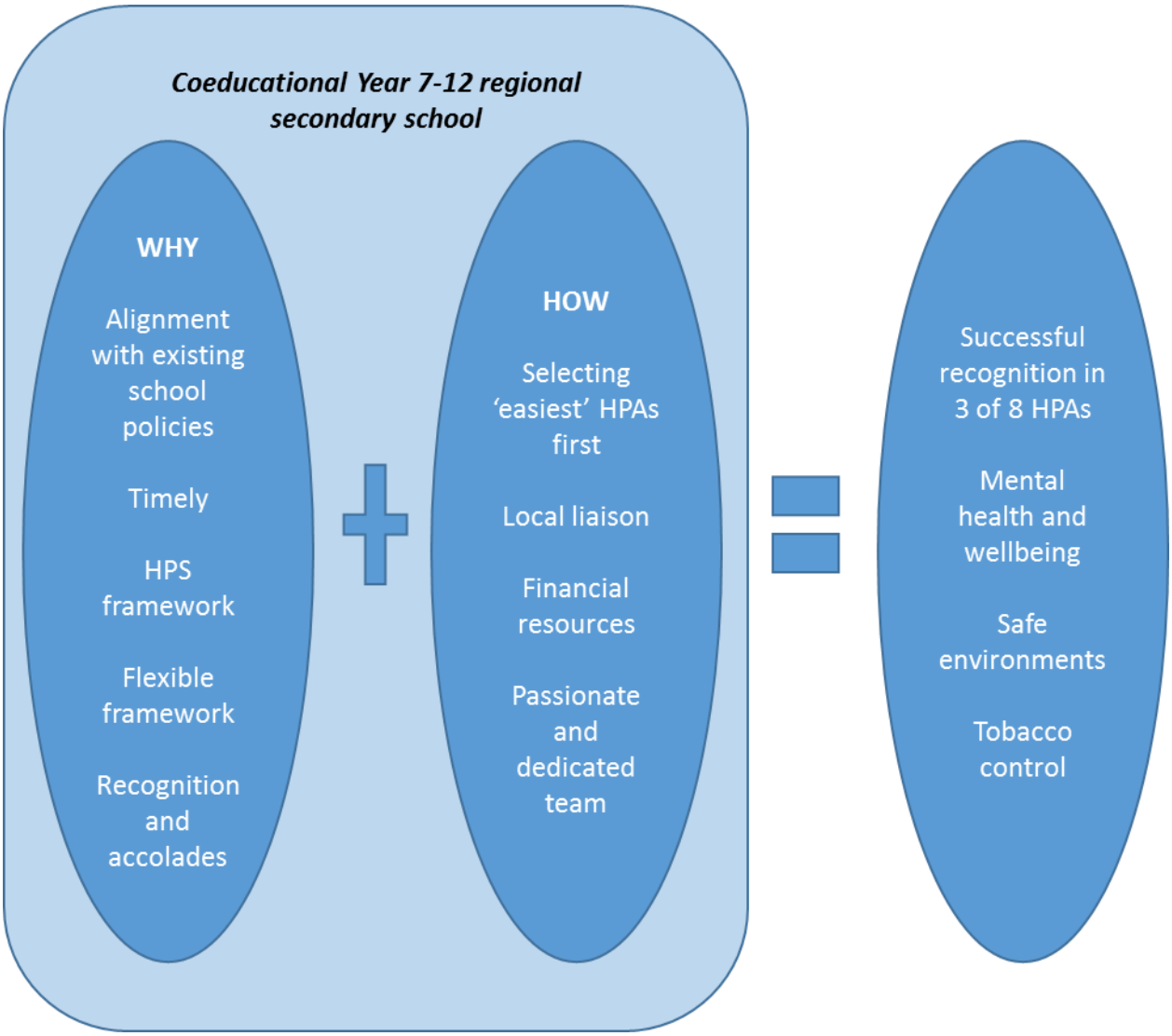

Figure 7.1 Themes related to why and how secondary school implementing the Achievement Program. Abbreviations: HPA – health priority area; HPS – Health Promoting Schools

WHY IMPLEMENT THE ACHIEVEMENT PROGRAM

The analysis revealed the school was implementing the policy as it (i) was perceived to be *aligned with existing school policies*, (ii) *timely* for the school's revision of internal policies, (iii) was well supported by evidence and was based upon *the HPS framework*, (iv) provided a *flexible framework* with no time constraints, and (v) generated opportunities for *recognition and accolades* to build the school's profile.

Alignment with existing school wellbeing focus and policies

Staff reported that the Achievement Program was aligned with the school's existing focus and approach to whole of school health and wellbeing. Choosing to implement the Achievement Program as a recognised state driven policy initiative was therefore an easy decision. Alignment of the Achievement Program with school policies was also evident across the set of policies included in the analysis which focused upon whole of school approaches to health and wellbeing. For example, the school's student wellbeing framework policy stated that "*implementing any successful wellbeing program in a school means ensuring that there has been a whole school approach as well as ensuring inclusivity to the initiative. This means not only improving the teaching and learning through different pedagogy and curriculum to ensure all students are supported, but also engaging parents and the wider community to assist in the implementation and comprehension of these wellbeing initiatives*" and aims "*to facilitate the development of the whole person and promote and enhance student wellbeing*" (school policy document 1).

The participants perceived the Achievement Program to be clearly aligned with the curriculum requirements of the school related to the three achieved HPA (mental health and wellbeing, safe environments, tobacco control). The Achievement Program was therefore perceived to assist the school in achieving its goal of facilitating student academic success.

> *"Obviously if the students are feeling great, then their academic results will follow through as well, and that's been researched numerous times." (Participant 4)*

Again this was consistent with data from the Student Wellbeing Framework policy which referenced several existing school policies and procedures (including one other analysed in this research) related to areas including: acceptable behaviour; bullying, harassment and discrimination; child safety, complaints handling, first aid, harassment and violence. Observations of the school environment supported data from participant interviews revealing the presence of activities spaces designed to support health and wellbeing. These included designated shaded outdoor recreational space, an open art space, indoor hopscotch games, mindfulness colouring sessions and a motivational quotation wall in the school library. A designated health and wellbeing area where the student wellbeing team were located included a designated sensory room for students. The sensory room was reportedly used every day by students from all year levels, and acted as a safe and quiet space students could retreat to at any time.

Timely

Prior to registration with the Achievement Program, participants reported being in the process of seeking out a new framework or program to guide their whole of school approach to health and wellbeing and provide accountability. Newsletter articles also described the Achievement Program's role around accountability where the school had *"aligned to this framework to hold [themselves] accountable to State's recommendations around health and wellbeing and to ensure [they were] working towards appropriate goals and benchmarks in the areas necessary to signpost that [they were] achieving [the benchmarks]." (newsletter article 1).*

The school were also in the process of reviewing several school based policies related to health and wellbeing outcomes for students and staff. Being introduced to the Achievement Program at a local school network meeting was therefore deemed to be timely during participant interviews and was also recorded by participants in their annotated diagram of key activities that had occurred during implementation of the Achievement Program.

HPS framework

Participants acknowledged the great importance of valuing and focusing upon best practice in the delivering of health and wellbeing initiatives for their school community. Therefore the government investment in designing the Achievement Program based upon best practice evidence (ie. HPS) resonated with the school. This focus was evidenced by references to the HPS framework in several of the newsletter articles (n=3, 60%) included in the analysis and in participant interviews. All participants also highlighted their existing awareness of the HPS framework prior to registration with the Achievement Program, indicating that being underpinned by the HPS framework gave further credibility to the Achievement Program and incentive to register.

> *"I did my masters a few years ago and one of the units I did was wellbeing inclusive schooling and I had to research that Health Promoting Schools framework. So I knew about the World Health Organisation and then that was also – that gives it a fair bit of credence too." (Participant 4)*

Flexible framework

Participants perceived the Achievement Program cycle as being flexible as there were no time restraints associated with recognition of each HPA and could be seamlessly worked into their existing workloads when possible.

> *"There's no, "You must achieve this within six months of signing up to a benchmark." So for us, there wasn't a lot of pressure so we thought yeah, we'll just chip away at it slowly." (Participant 1)*

The perceived flexibility also extended to how the Achievement Program's focus on a 'whole of school' approach could be interpreted. For participants this translated to offering programs and activities, policies and even newsletter articles that were provided for and accessible to the entire school community, staff included.

While policy documents provided evidence of implementing a whole of school approach, staff perceived there was more to be done to engage the school community and link health and wellbeing to curriculum. This included recruitment of a broader variety of staff into the team driving policy planning and implementation in the school. Participants attributed their success to date to autonomy and shared responsibility for progression sitting with the small designated team and school deputy principal.

Recognition and accolades

A strong desire and ambition by school staff to be seen as a 'leading' school in health and wellbeing was also revealed as a strong driver and reason for implementing the Achievement Program. Receiving recognition as a HPS in three of the eight HPA thus far had been met with accolades within the school. Recognition and activities towards recognition was also a central theme in several newsletter articles analysed and items identified by participants in the annotated drawing of the Achievement Program cycle. However participants acknowledged a strong drive to pursue all eight HPA in order to receive further recognition as a leading school in health and wellbeing in Victoria.

> *"I think as a school we want to be seen to be a really good school. We want to be known for….wellbeing." (Participant 1)*

HOW TO IMPLEMENT THE ACHIEVEMENT PROGRAM

The school's successful recognition in the Achievement Program was perceived to be due to four factors: (i) selecting the *easiest health priority areas first*, (ii) drawing upon an enthusiastic and committed Achievement Program *local liaison*, (iii) ensuring adequate *financial resources* were available for health and wellbeing activities, and (iv) by embedding the Achievement Program into the roles of a *passionate and dedicated team.*

Selecting easiest health priority areas first

Due to the Achievement Program's flexible structure participants identified being able to start with the HPAs upon which the schools was already focused upon, or which aligned with student wellbeing team staff day-to-day responsibilities, facilitated quick collation of evidence to gain recognition.

> *"Starting with the mental health and wellbeing benchmark….it's actually really easy to complete … because … we'd just recently create a wellbeing framework, the policies had all been recently updated, so it was actually quite easy." (Participant 1)*

Participants also noted that they hadn't elected to work on the HEOH or physical activity HPA first as they knew they were going to be more challenging. This was further evidenced by observations of the school environment, where areas previously designated for physical activity were being repurposed for new building works, and the school food policies which referenced the need to change configurations to the canteen menu and catering arrangements in the school.

At the time of data collection the school was working towards the HEOH priority area. Participants identified the priority area as being one of the more challenging for the school, which contributed to their decision not to select the priority area before the three for which they had achieved recognition (which were deemed to be *easier* as discussed above). The participants cited a number of issues or large scale tasks that needed to be completed as contributing to their perception of the HEOH priority area being challenging. One issue was the presence of an old (undated) school nutrition policy that had not been reviewed in some time, and did not reflect all school based food activities such as the school's Victorian Certificate of Applied Learning program café, internal event catering, fundraisers, year level lunches and market days. This was also evident in the food policies analysed.

Participants cited review of this policy as a key step in their progression that would need to be accompanied by the establishment of a committee to drive changes related to this priority area in the school. Unlike other priority areas, the student wellbeing team staff felt ill-equipped to manage the changes on their own as food was closely tied to cultural identity and attitudes.

> *"So a lot of it is about attitude with this particular benchmark, changing attitudes, getting people on board, and that just takes time and chipping away more so than the other [benchmarks]." (Participant 3)*

> *"It's really tricky because our culture, in general, revolves around food and that's how we celebrate. SO to start saying, well, we need to remove this, we need to more this, it's going to cause attitude." (Participant 2)*

When discussing changing attitudes participants emphasized the challenges they had experienced as well as those anticipated in the future with the school's canteen manager. Although employed as a school staff member the participants reported being met with defensiveness by the canteen manager when initiating activities related to the HEOH priority area. Participants reported that the canteen manager had been employed for 25 years and in that time had developed their own ways of assessing the 'healthiness' of recipes that was not aligned with the requirements of the Achievement Program.

> *"So we have the traffic light system, which is great, but the way [they] find out what recipes are what colour is a bit antiquated, the way [they do] it, even though it's supposed to be in line with Nutrition Australia." (Participant 3)*

Participants cited the menu assessment as being a challenge. Firstly, gaining access to full recipes from the canteen was time consuming. Secondly, the online platform for entering the recipes was reportedly not user friendly. For example, one participant reported *"one of the biggest criticisms with the website is that you can put in a recipe or anything, lock it in, and then when you go back to have a look at it, you can't edit it and you can't look at what's – the ingredients that you've had to put in, you can't change them or you can't see them. So then you have to actually just delete it and start again. So it can be really time-consuming." (Participant 3)*

Local liaison

Participants reinforced the important role of having an enthusiastic and committed local liaison employed at the local community health service in their success. The school's liaison was employed as a health promotion practitioner to assist schools in implementing the Achievement Program. Participants spoke of drawing heavily upon their knowledge, experience and enthusiasm regularly throughout their journey to recognition. References to use of the local liaison were also identified in three of the eight steps of the Achievement Program in the participants' annotated diagram. In addition to providing the school staff with training and support in their applications, the liaison was also reported to assist in developing staff confidence and capacity to implement the Achievement Program.

> *"The fear of not having the capacity was reduced by how helpful [she] has been with her attitude. "Oh, it's fine, it's fine. I'll come out anytime to help you. Send it through to me, I'll send it back." She sent back things to me that I needed to change highlighted in yellow. …. it was just so helpful." (Participant 2)*

Financial resources

Participants reported having considerable financial resources to support all health and wellbeing activities including those related to achieving recognition in the Achievement Program. They acknowledged that they had not yet experienced many financial costs associated with implementation only costs associated with staff time. However participants anticipated larger expenses for the remaining HPAs as greater changes were expected. For example, in working towards the HEOH priority area participants anticipated having to seek out and pay for external support to review their canteen menu and support policy changes related to healthy fundraisers and excursions.

Passionate and dedicated team

The presence of a passionate and dedicated team driving implementation in the schools was also perceived to be a key factor. The team included three dedicated student wellbeing team members that were given flexibility in their workload around their one on one counselling responsibilities with implementation of the Achievement Program. The team leader had previous health promotion experience and was familiar with the HPS framework prior to commencement of the Achievement Program. Additionally the team included the deputy principal who was responsible for overseeing student health and wellbeing activities within the school, and was trusting and supportive of the student wellbeing team and implementation of the Achievement Program.

> *"Yeah I did my masters a few years ago and one of the units I did was wellbeing inclusive schooling and I had to research that Health Promoting Schools framework. So I knew about the World Health Organisation." (Participant 4)*

7.3 Discussion

Through a single pilot case study conducted at one secondary school in Victoria we identified factors related to why and how this school was implementing the voluntary Achievement Program. Factors perceived as contributing to why the school was implementing the Achievement Program included the policies alignment with the school's existing health and wellbeing focus and curriculum requirements, flexible structure and basis in the HPS framework. The school wanted to be seen as a leading school in health and wellbeing and saw the Achievement Program as a timely and appropriate opportunity for gaining recognition. Factors perceived as contributing to the school's successful implementation included flexibility to select easier HPAs first, drawing upon a local skilled liaison, accessing school financial resources and identifying a passionate team to drive policy implementation. These factors provide some initial insight into successful implementation of the Achievement Program in this school and showed the utility of a case study approach in obtaining in-depth information about implementation of the Achievement Program.

Although only a single school case study, the results are consistent with other research which highlights the importance of aligning HPS interventions with the core business of schools and having adequate internal and external resources available to progress policy implementation (Inchley et al., 2007; Hoyle et al., 2008). This includes the role of school leadership and the school principal in creating a health promoting environment due to the influence and control they possess (Liu et al., 2019; McIsaac et al., 2015; Viig et al., 2012). Similar to Larsen and Samdal (2008) in their study of the perceptions of principals' roles in implementation of school health programs, the deputy principal's visionary leadership and management contributed to maintaining momentum and a focus on implementation in order to provide school staff with direction for the intervention's alignment with school priorities. Viig et al. (2012) also suggested that principal support contributes to anchoring and establishing credibility of HPS implementation in the school. This was certainly the case for the school included in this study. This furthered our current understanding of the importance of supportive leadership, identifying the appointment of a deputy principal with a focus on student health and wellbeing as a key perceived factor contributing to success. Moreover this deputy principal exhibited a personal interest in health and wellbeing through completion of post graduate studies inclusive of the HPS Framework and Achievement Program. To our knowledge this is the first study in relation to the HPS framework to report school and principal characteristics of this kind.

The emergent factors that show how to achieve success presented from this school are not unique. Previous studies have identified the role of committed staff and teachers, formal policies and strong commitment and focus from the principal and school leadership, including communication of the school's health and wellbeing vision to the entire school community (Larsen & Samdal, 2008). In their study of principals Larsen and Samdal (2008) identified that having a top-down and bottom-up whole of school approach resulted in the intervention becoming an integral part of the school. These factors are reminiscent of those seen in this study. It is highly likely that many of the factors identified are present in other schools that have achieved recognition in the Achievement Program, in addition to schools that have registered but not yet achieved recognition. It has previously been reported that a school's HPS status may not accurately reflect implementation of the HPS framework (McIsaac et al., 2017). It is therefore implausible that this is an exhaustive list of factors. Further research in registered and recognised schools is therefore necessary to affirm and add to the factors identified by this research. Using the methodology tested in this study, together with the factors perceived as contributing to success in other schools may provide a way forward to truly understand implementation of the Achievement Program.

This study furthers our understanding of the role of a local liaison to assist implementation of policies based upon the HPS framework in secondary schools. Best practice in school health promotion often

describes the importance of identifying 'champions' to drive policy implementation (Lucarelli et al., 2014; Stolp et al., 2014). It is reasonable to suggest that the student wellbeing team staff and deputy principal were the 'champions' in this school due to their expressed interest and enthusiasm. However previous studies have identified that teachers also need expert support and substantial professional development, in conjunction with affirmation of their HPS approaches, from internal and external sources. In this study affirmation, expertise and support was provided by the health promotion practitioner employed at the local health service. Even though staff identified as having previous knowledge and experience with the HPS framework the school drew upon the practitioner's expertise, as well as their enthusiasm and willingness to build an effective working partnership, to assist their implementation. This finding raises concerns for future implementation of the policy. Firstly, this school drew upon their local liaison often as a conduit between themselves and the service provider of the Achievement Program. The school staff also had prior knowledge of the HPS framework. It is therefore fair to assume that secondary schools with no notable experience or knowledge of the HPS framework may require greater support to achieve recognition as a HPS for the Achievement Program. Secondly, at the time of the study ten schools throughout Victoria offering Years 7-12 of 583 (n=10 of 583, 1.7%) (Department of Education and Training, 2018) had achieved successful recognition for at least one HPA. The use of a local liaison in the nine schools that did not participate in the study remains unknown. Exploration of the resourcing and capacity of the current localised, skilled and state-based workforce to support all Victorian secondary schools is needed.

The findings of this study are consistent with several topics identified in an analysis of submissions to the Parliamentary inquiry which preceded the Achievement Program's development (Bruce et al., 2012). Similar to the findings of this study the submissions highlighted broad support for use of the HPS framework to guide school policy and programs. In addition the importance of teacher training in health promotion and the role of health promotion practitioners, either in schools or in local communities in close proximity to schools, to provide the expertise needed to ensure schools had a 'champion' and a comprehensive approach to health promotion, has been described. The submissions identified that teachers who had received health promotion training tended to be more involved in health promotion activities which was evident in the findings of this case study. The submissions also suggested that longer term funding was needed to support HPS initiatives (Bruce et al,. 2012). This suggestion was evident in the findings of this study. The school included in this study registered for the Achievement Program in 2015 towards the end of the government's initial 2012-2015 three-year funding period. However through ongoing commitment to funding the school was able to commence active engagement and success six years after the Achievement Program's introduction. Finally the analysis of the submissions to the Parliamentary inquiry recommended increased resource allocation, including introduction of a health promotion practitioner network, to facilitate health promotion teacher training, resource development and the establishment of school based health and wellbeing

teams. However in making this recommendation the analysis expressed fear that the intensive resource needs of a state wide HPS approach may not be met, leaving schools to implement the Achievement Program with limited resources, capacity and measurable outcomes (Bruce et al., 2012). Whilst resourcing of the Achievement Program with localised health promotion practitioners and tailored resources was present during the initial funding period, and was apparent in the findings of this case study, it is not known if this level of resourcing remains available to secondary schools in other areas throughout Victoria and requires further investigation.

Although the school included in the case study had not completed the HEOH priority area this study identified a number of potential barriers and challenges to changing a secondary school food environment under the Achievement Program. The main challenges identified were around implementation of a whole of school food and nutrition policy which complied with the standardised definitions of the 'traffic light system', ensuring whole of school ownership or vision for the importance of an appropriate food and nutrition policy, and facilitating changes with canteen management. These findings are consistent with previous canteen research in Australian schools that has identified the importance of compliance and canteen management as key influences on policy implementation (Ardzejewska et al., 2012; Pettigrew et al., 2012; Pike & Colquhuon, 2009; Woods et al., 2014). Further exploration of whether other secondary schools working towards the HEOH priority area have experienced similar challenges and how they may have overcome these is warranted to inform future resourcing of the Achievement Program, and assist implementation in other Victorian secondary schools.

To date schools have been recognised as a 'HPS' by the Achievement Program once they have achieved recognition for at least one HPA. This means schools that have achieved all eight HPAs may not be distinguishable from those that have achieved one HPA. Previous attempts at categorising and 'awarding' HPS implementation strategies and school characteristics have been documented in the literature (Lee et al., 2006; McIsaac et al., 2015). In both cases schools in the highest of three categories exhibited enhanced HPS functioning attributed to a strong local HPS vision, school and distributed leadership, comprehensive school policies and health curriculum, and a well-resourced and trained team to drive implementation (Lee et al., 2006; McIsaac et al., 2015). Drawing upon these findings and the approaches used by Lee at al. (2006) and McIsaac et al. (2015) to categorise schools it could be argued that the school included in the present study may also be classified as a Level 3 or 'gold' school, respectively. These categorisation methodologies may be worth considering in future case study exploration of secondary schools registered with the Achievement Program, to provide greater insights and context to recommendations for implementation of the Achievement Program across Victoria. However these findings are also consistent with previous HPS research highlighting the importance of school culture, 'readiness to change' and school ethos for HPS implementation (Gardner

& Ollis, 2015; McIsaac et al., 2017; Rowling & Samdal, 2011; Samdal & Rowling, 2011). Although evidence for the specific school ethos necessary for successful HPS implementation or 'health promoting school ethos' (HPSE) is limited, the findings of this study may offer support for inclusion of the HPSE tool developed by Penney et al. (2018) in future research of secondary schools engaged in the Achievement Program. The tool was designed to identify and measure critical components of different school contexts that relate to HPS regardless of HPS status (McIsaac et al., 2017) and may provide vital insight into the role and potential impact of school ethos in Victorian secondary schools to inform future resourcing for the Achievement Program.

This pilot study provided affirmation of an approach to gather an in-depth understanding of the factors contributing to implementation of the Achievement Program. A strength of this study was development of the case study protocol prior to commencement of recruitment and data collection. This allows for refinement and replication of the methodology in further case studies (Yin, 2009). Use of framework analysis also ensured a consistent comparative approach to analysis of all data collected from the four data collection methods. The framework analysis ensured analysis was conducted in a structured yet integrative way which enabled a rich story to be built from the entire data set. This also ensured adequate mapping and charting of how each component of the data set contributed to the final interpretation of the study findings (Ritchie & Spencer, 1994). As a researcher I also had experience working in secondary schools with government initiatives based upon the HPS framework, in addition to experience conducting interviews and focus groups. This enabled me to build rapport and trust with the participants quickly and enabled rich data collection through a non-judgemental approach informed by Bardach's approach (Bardach, 2012).

This study was not without its limitations. As a pilot case study the conclusions drawn from this single case study may not be transferable to all secondary schools. The participating school was voluntarily recruited and may represent a unique and bias account of implementation of the Achievement Program. The perspectives of teaching staff, parents and students were also not captured due to the timing of the research and current nature of implementation within the school. Capturing their perspectives may have provided a different perception of the school's success. There is a need to expand on this methodology by recruiting more schools and undertaking the same in depth case study, or alternatively, developing an approach to affirm or test the transferability of the factors identified in this study across other schools both in Victoria as well as nationally and internationally. As previously mentioned the school recruited for the pilot study had not achieved recognition for the HEOH priority area. Implementation of the HEOH priority area could therefore not be explored as intended at the outset of this research. What remains unknown is whether the factors perceived as enablers to successful recognition in other areas of the Achievement Program such as mental health and wellbeing translate to the HEOH priority area and the four other remaining HPA for the Achievement Program.

Finally only one drawing was collected as part of the data. Further piloting of the case study methodology is necessary to explore whether inclusion of the drawings as part of interviews is warranted.

7.4 Reflexive quilting

The different framing of the HPS framework and Achievement Program by policies and policymakers has been a consistent theme throughout this thesis so far. In this chapter the key themes related to why and how a regional Victorian secondary school implemented the Achievement Program were explored. Framing of the Achievement Program in this school by policy implementers was mentioned in the results, however in this reflexive quilting piece I have chosen to expand upon these findings and elaborate on my own interpretations.

Participants interviewed described the Achievement Program as having provided a 'framework' to guide whole of school health and wellbeing activities. The framing of the Achievement Program in this way is consistent with the findings presented in Chapter Six where policymakers identified the importance of the Achievement Program being seen as a supportive framework that aligned with existing health and wellbeing initiatives and not an 'additional program'. It could therefore my argued (in part) that the Achievement Program was being implemented as intended by policymakers in this school i.e. it was seen as a framework under which all existing health and wellbeing activities could be structured and recognised. However the results presented in this chapter offered a different perspective by participants.

The policy documents and observations appeared to support the notion that the school was implementing the Achievement Program as 'intended' by policymakers as a 'whole of school' initiative. However participants revealed that they did not feel they were truly implementing a whole of school approach as they had not established a diverse team to lead Achievement Program implementation in their school. Participants believed this was fuelling a perception by some staff in the school that the Achievement Program was the responsibility of the student wellbeing team.

In immersing myself in these findings I was immediately struck by an interest to explore participants' interpretations of a 'whole of school' approach and how or why the inclusion of more staff throughout the school was highlighted. I was also interested in how the local liaison, as a trained health promotion practitioner, had articulated the 'whole of school' aspect of the Achievement Program. As a health promotion practitioner I recall working with a secondary school attempting to implement a whole of school approach. The school's commitment to a whole of school approach was epitomised by their

focus on school policies and dissemination of key nutrition and physical activity messages through curriculum activities and newsletter communications to families. The initiative was driven by a select few, a mixture of self-selected and appointed staff to 'champion' implementation (not dissimilar to that observed in this study). Whilst we spoke of continuing to identify new champions to facilitate progression and sustainability of the initiative their interpretation, and subsequent adoption of a whole of school approach, was tailored to their individual needs. Implementation was also consistent with the recommendations and advice I had provided based upon my expertise in school based health promotion.

Based upon my observations of the school's implementation, in addition to the guidelines provided, I would surmise that the school *had* effectively implemented a whole of school approach to achieve its success. However effective school based health promotion requires flexibility to meet emerging needs. In order to pursue the remaining five HPAs the approach previously taken by this school may need to be reviewed. For this particular school and the staff driving current implementation this may include seeking greater input from other school members, including teaching staff and parents, to maintain momentum and continuity. I therefore believe this to be a key message that needs to be fed back, not only to this particular school, but to other Victorian secondary schools currently implementing the Achievement Program. These reflections have been key to informing the development of my thesis discussion and the translation of the findings of this research into practice.

Finally in Chapter Six (section 6.3) I touched upon concerns related to the scalability of the Achievement Program based on my own previous experiences in delivering school based health promotion initiatives. The findings of this case study have provided an example of the intense workforce, infrastructure and time requirements to achieve successful recognition of just some of the eight health priority areas. Based upon the guide to scaling up population health interventions (Milat et al, 2016)) it may be reasonable to suggest that scaling up of the Achievement Program is not feasible and further refinements to the policy are needed before further resourcing or reorienting existing resources is committed to supporting implementation in secondary schools. However this case study did not measure effectiveness of the Achievement Program which means that the true scalability of the Achievement Program remains unclear. Research aimed at exploring effectiveness is imperative however for policymakers and policy implementers in Victoria in the future.

7.5 Summary

In this study we have presented a case study of factors perceived as contributing to why and how a Victorian secondary school was implementing the Achievement Program based upon the HPS

framework. Contributing factors to why included the Achievement Program's alignment of existing school policies, flexible framework and timely introduction to the school. The ability to select easier HPAs and draw upon a skilled local liaison, as well as access to school financial resources and a passionate and dedicated team to drive implementation were highlighted as contributing factors to success. These factors identify initial characteristics that may need to be considered by policymakers when planning future resourcing of the HPS policy initiatives in secondary schools. Future research exploring these factors in other secondary schools would also be warranted to increase transferability of findings.

Chapter Eight – Discussion and conclusions

8.1 Introduction

This chapter critically summarises the key findings of this PhD research and contributions to our understanding of the implementation of the HPS framework in secondary schools. Section 8.2 summarises the research aims and key findings of each study. The contributions of this thesis in answering the overall research aim and in the context of existing knowledge are explored in section 8.3, followed by implications and recommendations for future policy, practice and research in section 8.4. Strengths and limitations of this thesis are presented in section 8.5. The chapter is summarised in section 8.6.

8.2 Summary of research aims and key findings

This PhD research aimed to examine support for implementation of initiatives based upon the HPS framework in secondary schools with a particular focus on nutrition. To address this overall aim this research had the following objectives:

1. To explore the **impacts of multi-strategy interventions** in schools that encompassed nutrition education on adolescents' health and nutrition outcomes and behaviours
2. To explore how government curriculum and school based health and wellbeing **policies support implementation of policies based upon the HPS framework**
3. To explore how **policymakers designed a policy based upon the HPS framework** intended for implementation in secondary schools
4. To explore the **experiences of secondary schools** implementing the Achievement Program.

8.2.1 Impacts of multi-strategy interventions

Chapter Three presented a systematic literature review which explored the impacts of multi-strategy interventions in schools that encompassed nutrition education on adolescents' health and nutrition outcomes and behaviours. The review found that multi-strategy interventions aimed at adolescents can have significant anthropometric impacts on BMI and percent body fat and result in dietary intake changes in fruit and vegetables, sugar-sweetened beverages and fat. Intervention components commonly identified in studies showing statistically significant results included facilitation of educations sessions by teachers and school staff, parental involvement, changes in canteens, food

supply and vending machines, and using theoretical frameworks to underpin intervention design (Meiklejohn et al., 2016).

8.2.2 Policy support for the Health Promoting Schools framework

Chapter Five presented Study One – Policies. This study was an analysis of the key government curriculum and school based health and wellbeing policies and how well they support the HPS framework. The analysis revealed policies currently provide little support for Victorian secondary schools in implementing the HPS framework through 'hidden' or implicit references to the HPS framework, that are more likely to be identified by experienced HPS practitioners than policy actors, such as school staff, that may not have the same knowledge or experience.

8.2.3 Policymakers design considerations for the Achievement Program

Chapter Six presented Study Two – Policymakers. This study explored how policymakers designed a policy (the Achievement Program) based upon the HPS framework intended for implementation in secondary schools. The qualitative study found that policymakers designed the Achievement Program by focusing upon establishing strategic collaborations and good governance and involving people in positions of power that made valuable and diverse contributions to the design process. It also found that in the policy design policymakers carefully considered current evidence and literature to ensure an evidence informed program design based upon the HPS framework. In addition, the incorporation of real-time feedback from other settings such as primary schools implementing the Achievement Program was considered.

8.2.4 Secondary school experiences of the Achievement Program

Finally Chapter Seven presented Study Three – Policy implementers. This study piloted a case study methodology to explore the experiences of a single regional Victorian secondary school implementing the Achievement Program. In this school they elected to implement the voluntary policy as it aligned with the school's existing health and wellbeing policy framework and government curriculum requirements. The policy provided a flexible yet evidence-based framework to guide a whole of school approach to health and wellbeing. For this school, success was perceived to have been dependent upon selecting easier HPAs to address first, allocation of a designated team to guide policy implementation and access to a skilled local liaison employed in the local community health service.

8.3 Contributions to knowledge

In answering its overall aim this thesis has made a number of contributions to our current knowledge of support for implementation of initiatives based upon the HPS framework in secondary schools.

The findings of the systematic literature are consistent with previous studies which have identified the need to focus prevention interventions on adolescents in secondary schools and the importance of using theoretical frameworks to underpin interventions to optimise successful implementation (Gibbs, et al., 2011; Waters et al., 2011). None of the included interventions were based upon the HPS framework. This finding therefore contributed to the overall aim of this thesis by examining the literature and identifying a lack of implementation of initiatives based upon the HPS framework in secondary schools with a focus on nutrition. It also supported previous calls for implementation of multi strategy interventions, including the HPS framework, in adolescents (Langford et al., 2014).

To our knowledge this thesis offers the first policy analysis of implementation of the HPS framework and Achievement Program in Victorian secondary schools. It offers the first insight into the Achievement Program journey from development by policymakers to translation by policy implementers in Victorian secondary schools. The learnings related to the importance of aligning HPS policy initiatives with existing school policies and core business, in addition to the importance of ensuring adequate resourcing at both a local and school level, will be beneficial to other HPS government policy initiatives, both in Victoria and at a broader national and international level. The policy analysis approach has therefore been effective in highlighting these new findings and furthers our understanding of the potential lack of translation of policy into support that may be understood by policy implementers.

This thesis offers further evidence of ongoing support for implementation of the HPS framework in Australia, despite the absence of an endorsed national HPS policy. The importance of national and localised HPS policies to promote and support implementation of HPS has previously been identified (Parsons et al., 1996; Rowling & Samdal, 2011; Samdal & Rowling, 2011). In addition to tailoring the policy the importance of networks of people and schools involved in implementation of HPS have also been identified as factors supporting the sustainability of HPS interventions (Burgher et al., 1999; Liao et al., 2015; Rasmussen & Rivett, 2000; Samdal et al., 2010; Viig et al., 2012). The policy drafted by the NHPSI was never endorsed, however implementation has prevailed both through the Achievement Program and other government initiatives including drug education, MindMatters and respectful relationships education in Australian secondary schools (Flood et al., 2009; Midford et al., 2012; Ollis, 2014; Wyn et al., 2000). Moreover introduction of the Achievement Program and the findings of this

research may help to contribute to a broadening of the limited evidence base of HPS in secondary schools. For example, this thesis provides evidence in Study Three – Policy implementers (Chapter Seven) of use of the HPS framework to cover areas such as substance use and mental health previously not covered in detail in the literature (Langford et al., 2017).

The findings of this policy analysis also identified that only a small number of secondary schools in Victoria (n = 10 of 583, 1.7%) had achieved recognition as a HPS in the Achievement Program (Department of Education and Training, 2018). For the school included in this research that had achieved recognition for three health priority areas, success was attributed to a variety of factors. This included the government's careful consideration of the existing responsibilities of secondary schools around curriculum and students' health and wellbeing, in addition to the available published literature related to school-based health and wellbeing interventions and known enablers and challenges of implementation of the HPS framework. This research also suggests that implementation of the Achievement Program may be achieved in the absence of explicit references to the HPS framework in relevant government curriculum and school health and wellbeing policies. However the small number of schools having achieved recognition overall suggests that this may not be the case for all Victorian secondary schools and warrants further exploration,. The school in the case study had a high level of HPS knowledge and experience upon commencement of implementation. It would be unreasonable to assume that all Victorian secondary schools had the same level of HPS knowledge and experience upon commencement of the Achievement Program. Variations in knowledge and experience are likely to influence the potential role of explicit references to the HPS framework in government curriculum and school health and wellbeing policies, both in Victoria and internationally.

The findings also offer insight into the possible time and resourcing needed by secondary schools to achieve recognition as a HPS in the Achievement Program. The list of contributing factors to secondary school success in the Achievement Program identified in this case study of one school was by no means comprehensive. Thus this thesis provides only a partial understanding of the potential resourcing that may be needed for state wide implementation. However the case study did identify a number of factors and resources previously identified in the literature (Chapters Two and Three) and by policymakers in Study Two – Policymakers of this thesis research (Chapter Six), as being key to successful HPS implementation. These included alignment with core school aims, leadership support, and developing policy for institutional anchoring (Rowling & Samdal, 2011, Samdal & Rowling, 2011). In particular the roles of the school principal and local health promotion expertise were found to be important (Chapter Seven). These findings are also consistent with previous research highlighting the importance of health promotion capacity in implementing health promotion in schools (Hoyle et al., 2008, Viig et al., 2012). The findings of Study One – Policies and the case study in Study Three – Policy implementers also contribute to current literature related to the importance of acknowledging organizational capacity, in

addition to long term policy commitment for effective school based health promotion (Hoyle et al., 2008). Developing organisational capacity for health promotion requires the development of knowledge, skills, commitment, structures, systems, and leadership to enable effective health promotion, and is well documented as a key factor in the success and sustainability of health promotion efforts (Hoyle et al., 2008).

Support for implementation of initiatives based upon the HPS framework in secondary schools from multiple policy perspectives has been presented across the three studies of this thesis. However the findings, in combination with existing literature, suggest that misalignment continues to exist between policy, HPS design and implementation. The Achievement Program appears to have been designed by as a policy according to best practice and in consideration of key known enablers and barriers, however evidence of widespread uptake, progression and recognition is lacking. Implementation of the Achievement Program cannot stand alone. Effective policy implementation should ensure that policies are accompanied by adequate government support and resourcing, inclusive of a well networked workforce with the capacity to support implementation in addition to providing leadership. For example, the Taiwan HPS support network was initiated in 2004 following introduction of the 'Joint Declaration of HPS Programs' in 2002 by the Ministry of Education and Department of Health (Liu et al., 2015). The network was established to facilitate schools in adopting the HPS program which was mandated for primary and middle schools in 2008. The network also built a website for schools to download HPS training materials, share HPS implementation experiences and find resources such as teaching materials. This was accompanied by expanded financial support from the Ministry of Education in 2011 for school–district/university partnership programs which promoted HPS implementation. The increased support was found to have positive impacts on increased levels of HPS implementation, perceived HPS impact and perceived HPS efficacy (Liu et al., 2015). A health promoter network currently exists in Victoria and continues to be supported by the Achievement Program service provider to support implementation of the Achievement Program (State Government of Victoria, 2018). The size of the network and resourcing dedicated to secondary school settings is not known. Leadership at both a school level and within localised and state networks is therefore increasingly important, both in Victoria and across the world. School leadership has previously been identified as one of eight key theoretical components for effective HPS implementation practice globally (Rowling & Samdal, 2011; Samdal & Rowling, 2011). School leadership is also one of three cross-cutting categories for change processes in schools where establishing readiness and organisational facilitation are also key (Samdal & Rowling, 2013). Misalignment between HPS design and implementation may continue without adequate resourcing and leadership.

As identified in Chapter Seven it could be argued that the school included in the pilot case study had achieved success as it had established readiness to implement the Achievement Program (at the beginning of 2018 rather than 2015 when it registered). Whilst school readiness was not explicitly assessed in this school, nor was it categorised, the school's readiness for change was demonstrated through the school's belief that the Achievement Program both aligned with existing school policies and was timely (Chapter Seven). Coincidently these factors were also consistent factors proposed by Flaspohler et al. (2008) as indicating school readiness for change. Factors such as values (the degree to which the change fits with the school and community vision and operations), timing (the readiness of the school and community to consider the change, especially in relation to other school improvement efforts) and obligation (the felt need to change or 'do something different') have been identified as key markers of success (Flaspohler et al., 2008). In addition, organisational facilitation, which includes factors such as relational and organisational context, partnership and networking and sustainability was also evidenced in the case study through the existence of collaborations with local experts and ongoing commitment to the Achievement Program through school leadership, school based policies, financial resources and a dedicated team to drive policy implementation (Rowling & Samdal 2011; Samdal & Rowling, 2011). There is a need for further research that seeks to explore the mechanisms that can facilitate uptake of HPS.

It has previously been suggested that the HPS framework is about achieving educational change through understanding of educational settings, how they innovate and what influences these changes (Samdal & Rowling, 2013). Previous research on school based health interventions has indicated that implementation reflects complex interactions between four factors: 1) characteristics of the implementer (e.g. skills, knowledge and motivation), 2) organisational context (e.g. structure, ethos, history and resources), 3) intervention delivery (e.g. quality and availability of training and resourcing), and 4) community context (e.g. local policies, agencies and collaborations) (Greenberg et al., 2006; Greenhalgh et al., 2005). The findings taken from the literature review, as well as the three empirical studies presented in this thesis, provide further evidence of the importance of consideration of these four factors and may offer a framework for future exploration of implementation of the Achievement Program in Victorian secondary schools.

As outlined in the aims and earlier chapters of this thesis this research had a particular focus on use of the HPS framework for the delivery of nutrition education i.e. healthy eating. Exploring the role of policy in supporting healthy eating in secondary schools was capture through the focus on multi-strategy nutrition education interventions in the systematic literature review (Chapter Three) and inclusion of nutrition education and healthy eating related policies and policymakers in Study One – Policies (Chapter Five) and Study Two – Policymakers (Chapter Six). Study Three – Policy implementers (Chapter Seven) also presented findings related to progression towards the HEOH

priority area in the Achievement Program. Whilst the literature review (Meiklejohn et al., 2016) revealed significant impacts of multi-strategy nutrition education interventions on adolescents' anthropometric and dietary intake measures, the impacts of the Achievement Program on adolescents' nutrition and dietary intake, and rates of overweight and obesity in Victoria, remain unknown. This policy analysis has highlighted the challenges in implementing nutrition education and healthy eating in secondary schools. Despite an evidence based approach to the Achievement Program design, hidden policy mandates and the fact that only 10 secondary schools had achieved recognition as a HPS in the Achievement Program at the time of the research suggests more needs to be done to address nutrition in secondary school. In addition, the challenges identified in the case study (Chapter Seven) such as reviewing canteen menus and canteen management provide further evidence of this challenge. Whilst mandating of the Achievement Program may not be feasible or warranted (as discussed in Chapter Six) these findings further reiterate the importance of ongoing government support, resourcing and funding for voluntary adoption of policies based upon the HPS framework. The challenge of implementing nutrition education and healthy eating in secondary schools has been reported around the world (Bauer et al., 2004; Cho & Nadow 2004; Holthe et al., 2011; Jaime & Lock, 2009; Jorgensen et al., 2014; Sallis et al., 2003). While obesity continues to be a priority for governments more efforts needs to be dedicated to supporting schools to improve and prioritise nutrition education and healthy eating.

8.4 Implications and recommendations for future policy, practice and research

This thesis has offered evidence of support for implementation of initiatives based upon the HPS framework in secondary schools in Victoria, Australia. Through Yanow's interpretive policy analysis, the findings of this thesis may have implications on future HPS policy development and practice both in Australia and internationally.

Firstly, the findings have provided insight into how cross-government collaborations may be facilitated to support development and implementation of the HPS framework in secondary schools in locations other than Victoria, Australia both nationally and internationally. This may be facilitated where health is identified as a core component of the curriculum, and government health and education departments have the potential to work together to oversee health and wellbeing in secondary schools. Secondly, the findings have reiterated both the importance and capacity of policymakers to align new HPS policies with existing school curriculum and health and wellbeing policies. Thirdly, the case study findings suggest the need for leadership and local HPS expertise and resources to support implementation of the HPS framework in secondary schools.

Recommendations for future implementation of the Achievement Program and research based upon the existing literature, empirical research findings and personal reflexive quilting contributions are presented:

1. **Further exploration of the experiences of Victorian secondary schools in implementing the Achievement Program**

   This thesis captured the perspective of one secondary school that had achieved recognition in the Achievement Program through a single pilot case study. The results have provided some insights and understanding into the perceived reasons or factors contributing to why and how secondary schools may be implementing the Achievement Program. Repetition of the case study methodology in other secondary schools that have achieved recognition is recommended to broaden this understanding and affirm the factors identified as contributing to success. This may be followed by case studies of secondary schools that have registered but to date may not have achieved recognition, to explore commonalities and differences in factors identified. Exploration of the challenges associated with the eight different HPAs, and what resourcing may be needed is recommended to assist policymakers in ongoing planning and implementation of tailored support for each HPA. A realist evaluation approach may be useful.

   Realist evaluations go beyond asking the question of 'does it work?' by identifying what works, how, in what conditions and for whom (Pawson & Tilley, 1997). This approach will achieve an evaluation of the effectiveness of the Achievement Program, with an explanation of why particular outcomes developed as they did, and how the policy reacted to other underlying mechanisms and in what contexts. Thereby helping to develop and improve both the content and targeting of the policy and related resourcing (Kazi, 2003). In this way, effectiveness of the Achievement Program will be determined with an explanation of why the outcomes developed as they did, and how the Achievement Program was able to react to the other underlying mechanisms, and in what contexts. This analysis provides not only evidence of effectiveness, but also an explanation that helps to develop and to improve both the content and the targeting of the Achievement Program in the future. Findings of all case studies should be fed back to government policymakers and the current provider of the Achievement Program, Cancer Council Victoria, to inform ongoing improvements and resourcing. Findings should also be translated to secondary schools to provide them with knowledge and ideas to support their pursuit of and recognition as a HPS.

2. **Investigation of resourcing needed to support existing registered schools and future registrations**

While this research provides some understanding of what may be 'adequate' resourcing to facilitate implementation of the Achievement Program, the transferability of these findings to other schools remains unknown. Based upon the limited recruitment pool available in Study Three, it is feasible to suggest that many secondary schools in Victoria may not be progressing implementation of the Achievement Program and may be in need of additional support or resourcing in order to build organisational capacity to achieve recognition. A state wide review of resourcing and funding allocation to the Achievement Program is recommended to provide evidence to secure greater funding to support future implementation in secondary schools. This may facilitate the allocation of funding for localised and skilled health promotion practitioners to assist implementation, in addition to increased availability of training and support from the service provider, Cancer Council Victoria. However the true resourcing needs will only be better understood following further investigations of factors contributing to success in secondary schools that have achieved recognition as per the above recommendation. Engaging with registered schools through surveys or existing forums and training opportunities by Cancer Council Victoria may also help to generate necessary evidence.

3. **Impact evaluation on student health and academic achievement outcomes**

Measuring the impacts of the Achievement Program on student health outcomes and academic achievement was also beyond the scope of this research. The impact of the HPS framework on academic achievement also remains an important area for further research. Impact evaluation of the Achievement Program on adolescent health outcomes, including obesity risk, and academic achievement in secondary schools is therefore recommended to contribute to both Victorian and international evidence gaps. This can only be realised if more schools are able to implement the Achievement Program and achieve recognition across multiple HPAs.

4. **Continued implementation of the Achievement Program as a voluntary policy**

Victorian secondary schools are afforded a certain level of flexibility to tailor their teaching and learning and health and wellbeing initiatives to the specific needs of their students and school community. Whilst mandatory policy implementation would result in state wide adoption of the Achievement Program this is unrealistic due to the current lack of evaluation evidence related to its impacts on adolescent health and academic outcomes, and extensive resourcing mandated implementation would require of the State Government of Victoria. Worldwide HPS

implementation is predominantly voluntary to remain flexible to localised needs and priorities. Moreover, as identified in this thesis, implementation of the Achievement Program is achievable in secondary schools but takes time. Ongoing support for implementation by the State Government of Victoria will afford more secondary schools the opportunity to gain recognition for their chosen HPAs, and in doing so provide opportunities to also explore the impacts of the Achievement Program on adolescent health and academic outcomes.

The following recommendations relate to strengthening future implementation and research of the HPS framework:

1. **Realist synthesis of the HPS framework**

   Following on from the first recommendation related to the Achievement Program a realist synthesis of the available HPS literature is recommended. A joint project between the WHO and the United Nations Educational, Scientific and Cultural Organisation is currently underway to develop global standards for HPS to act as a common framework for implementation of the HPS approach (World Health Organisation & United Nations Educational, Scientific and Cultural Organisation, 2018). A realist synthesis of the HPS literature may complement this project. This type of review would synthesise how, for whom and under what conditions HPS works, which has previously been suggested (McIsaac et al., 2016; Pawson & Tilley, 1997). Moreover the synthesis findings may contribute to one of the WHO and United Nations Educational, Scientific and Cultural Organisation project key deliverables of providing 'implementation guidance to support the adaptation and operationalisation of the standards to country/setting context' (WHO & United Nations Educational, Scientific and Cultural Organisation, 2018, pp. 6).

2. **Impact evaluations of HPS initiatives on academic achievement and educational outcomes**

   The need for HPS initiatives to examine impacts on academic achievement and educational outcomes is not a novel recommendation of this thesis research (Langford et al., 2017). Whilst measurement of student academic achievement was not an aim of this research, the findings of this research have reiterated the importance of government support for the HPS framework and the importance of aligning HPS initiatives with the core business of schools i.e. the curriculum. Encouraging increased focus on planning evaluations of student academic achievement and educational outcomes prior to implementation of new HPS initiatives will not only fill this gap in our current knowledge, but may also contribute to increasing overall support for and implementation of the HPS framework internationally.

3. **Continued examination of use of the HPS framework to address adolescent health issues**

   As identified in Chapter Two of this thesis implementation of the HPS framework in adolescent populations has been lacking. Moreover HPS initiatives have focused upon obesity interventions with few interventions focussing on health issues such as sexual health, substance use and mental health and wellbeing. The Achievement Program was established to address increasing rates of overweight and obesity in Victoria, Australia. However unlike previous international examples of interventions the Achievement Program focused upon adolescents and also focussed on eight HPAs, including sexual health, substance use and mental health and wellbeing. The case study included in this thesis provides an example of a school that achieved recognition for school changes in the areas of substance use and mental health and wellbeing, therefore helping to contribute to the evidence gap. This research therefore provides both an example and impetus for why and how the HPS framework may be used to address adolescent health issues.

4. **Further piloting of the HPSE tool**

   The HPSE tool developed by Penney et al. (2018) is still in its infancy as discussed in Chapters Five and Seven of this thesis. However as discussed the tool has the potential to measure critical components of varying school contexts in relation to implementation of the HPS framework and school readiness to implement HPS initiatives. Further piloting of the tool internationally is recommended.

8.5 Strengths and limitations of this thesis

The strengths and limitations of the individual studies completed for this thesis have been described in Chapters Three, Five, Six and Seven. This section outlines overarching strengths and limitations of this thesis. The research undertaken for this thesis contains both strengths and limitations. Internal coherence of the theoretical perspectives, methodology and methods in this research ensured rigour and integrity of the research. To our knowledge this was the first research to apply Yanow's interpretive policy analysis approach to exploration of support for and implementation of the HPS framework. Moreover this approach informed design of the three phases of empirical research which afforded crystallisation of the thesis findings. Incorporation of policy documents, drawings, observations and interviews with policymakers and policy implementers also ensured multiple perspectives were considered and synthesized.

This thesis is not without its limitations. At the beginning of this PhD research I endeavoured to explore support for and implementation of HPS interventions aimed at improving healthy eating and nutrition education. Whilst sampling of documents included in Study One and recruitment of policymakers in Study Two reflected this focus I was unable to elicit specific nutrition education examples in Study Three of this research, as the secondary school recruited into the final study had not achieved recognition for the HEOH priority area. Moreover the voice of adolescents engaged in secondary schools as recipients or consumers was not captured. Whilst adolescents as students were included in the design of the case study their perspectives were not captured as they were not available to participate at the time of data collection and therefore remain unknown.

8.6 Conclusion

It has previously been suggested that the true meaning of policy is in how policy is implemented and not in what is written in policy. It has also been suggested that policy changes, much like implementation of a HPS framework, may take years. Whilst the Achievement Program was introduced in 2012 it could be argued that the policy is still young, especially as implementation and the impacts of the policy of adolescents' health outcomes, and rates of overweight and obesity in Victoria, remain unknown. This thesis has identified the effectiveness of multi-strategy nutrition education interventions in schools, providing further support for HPS as a policy framework. It also discovered that key government curriculum and school based health and wellbeing policies provide little support for Victorian secondary schools in implementing the HPS framework. Through the eyes of policymakers this thesis found that the Achievement Program was designed using best practice. However, only 10 secondary schools across all of Victoria have been able to achieve recognition as a HPS. In a case study of a secondary school the factors perceived to have contributed to achievement were related to alignment with the school's existing health and wellbeing policy, the value of the Achievement Program, selecting easier health priorities to address first, and a designated and skilled team to guide policy implementation with access to a skilled local resource. However the true meaning of the Achievement Program as a HPS policy in secondary schools remains unknown. Future research should aim to explore ongoing policy implementation and resourcing needs in secondary school to identify ongoing school needs to achieve optimal health outcomes and academic achievement for adolescents engaged in Victorian secondary schools. In addition the mechanisms that facilitate success for schools warrant further exploration.

This thesis has also contributed to the currently limited international evidence of the potential applications of the HPS framework in adolescent populations. It has also provided insight into how the HPS framework may be used to approach adolescent health issues such as substance use and mental

health and wellbeing. This research has reiterated the importance of government support and alignment of HPS initiatives with the core business of schools and the roles government departments of health and education may play in working together to support implementation of HPS initiatives. However the impacts of the HPS framework on adolescent health outcomes and academic achievement remains largely unknown. Future HPS framework research should therefore also aim to measure impacts of the HPS framework on adolescent health outcomes and academic achievement.

Afterword

Who am I now? Researcher reflections and a completed quilt

Shifting to the position of a researcher to explore the Achievement Program

The writing of this afterword marks five years since the commencement of this research. For years I had wondered how easy it was for secondary schools to implement the HPS framework. Did school policies value health and wellbeing or as a health promotion practitioner was I inadvertently contributing to the confusion schools were experiencing? My hope was that this research would not only contribute to the current knowledge and evidence related to the HPS framework in secondary schools but that it would provide insight into these questions for me on a personal level. What I got was much more.

Empowered with a much deeper understanding of the Victorian secondary school system and government policy processes I was able to answer the questions that had previously eluded me as a health promotion practitioner. I was reassured not only that schools were doing a lot in the area of health and wellbeing and nutrition initiatives, but that there was support for schools to implement the HPS framework. In conducting the secondary school case study I came to identify how secondary schools could overcome some of the issues related to 'where' the initiative should sit, whilst at the same time ensuring it encompassed the entire student group and priorities of the school curriculum. As a result I felt my experiences as a health promotion practitioner had been validated.

Whilst confusion may still exist regarding the HPS framework in schools, upon reflection I do not believe that I had contributed to this confusion. In fact I believe I fulfilled a role not dissimilar to the local health promotion practitioner described in Study Three – Policy implementers. I provided support and guidance, helping to break down the 'health promotion jargon'. However conducting this research highlighted that I never truly understood the curriculum or the equivalent 'education jargon'. I was preoccupied with the health promotion deliverables for which I was responsible and

accountable. This revelation coupled with the new knowledge and skills I have acquired throughout this research has resulted in a profound shift in my professional identity.

Whilst there were a lot of unknowns at the commencement of this research experiencing a shift in professional perspective and identity was not one of them. I did not expect to complete this research and no longer identify myself as a 'health promotion practitioner'. Whilst I hope I never lose my connection to day to day implementation of HPS initiatives my passion to be on the forefront of delivery is gone and has been replaced by what I believe to be a new sense of purpose. Whilst I am far from an expert in this area I believe the knowledge and skills I now possess across the HPS framework, government policy processes and policy analysis research position me to pursue further research opportunities in this area, by drawing together my experiences and knowledge of the entire policy cycle from policy development to policy implementation and evaluation.

In saying that I feel it is important to share the following experience which occurred at the end of my candidature. During my final review milestone a colleague that has worked for many years in health promotion and public health nutrition asked for my overall thoughts towards the Achievement Program and use of the HPS framework in Victorian secondary schools – did I believe the Achievement Program was a good investment by the State Government of Victoria? I pondered this for a moment and then responded truthfully. 'Yes *but* there is a big but'. I went on to summarise that whilst I had been pleasantly surprised by the State Government of Victoria's efforts to consider the local context and evidence based best practice during development and implementation of the Achievement Program, I honestly believe the potential impact of the policy on health outcomes for adolescents remains limited whilst minimal localised resourcing (including funded experts/liaisons) and short-term funding structures continue.

Completing reflexivity through quilting and crystallisation

As introduced in the foreword I chose to explore reflexivity through the use of two metaphors, quilting and crystallisation. Quilting was chosen not only as a means of 'sewing' together the various sections of this thesis but also as a novel way of exploring reflexivity and capturing the insights and reflections I had as the researcher. This materialised as four reflexive quilting pieces presented in Chapters Three, Five, Six and Seven. These pieces provided opportunities to draw together both the empirical research findings and additional information and knowledge I gained throughout the research through personal contacts and broader reading related to the Achievement Program, government initiatives and Victorian and Australian school systems. Moreover writing these pieces was proposed to add another dimension to the research, by capturing a different perspective of the data to add to the multiple angles

captured by the policies, policymakers and policy implementers. These pieces were weaved throughout the thesis to create a rich story presented as a single coherent and crystallised text, my PhD quilt.

In her book titled 'How to tame your PhD' Inger Mewburn states 'a thesis text is like an avatar. It 'stands in' for your scholarly self and 'speaks' your knowledge and capability as a scholar to the reader/examiner when you aren't there' (Mewburn, 2012, pp. 26). She goes on to suggest that 'you are only a ghostly presence in your text avatar. It has to speak for you' (Mewburn, 2012, pp. 26). It is my hope that by weaving my decisions, reactions and reflections into the foreword, chapters and afterword of this thesis that I have assisted in creating a more detailed 'avatar' to guide the reader through this body of research and my journey as the researcher.

Before revealing my completed quilt a final comment about the use of crystallisation in this thesis. Throughout this PhD journey as a qualitative researcher I quickly realised that crystallisation remains a novel approach amongst my peers and colleagues, despite many of them sharing my social constructionist and interpretivist epistemological position. Through use of crystallisation instead of triangulation within this research I was encouraged to acknowledge the multiple interpretations of the phenomenon I was investigating and that creation of this thesis as a crystallised text could only yield a partial not absolute truth (Ellingson, 2009). Thus I feel this approach prevented me from overanalysing or inflating my findings. In doing so I feel I was much more grounded in relation to my expectations of the findings. I have therefore been left not only with a sense of duty to share my research findings in relation to the HPS framework and Achievement Program but feel compelled to continue to incorporate crystallisation into future research opportunities, and to share my learnings and experiences with the broader research community through postdoctoral publications.

A completed quilt

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Figure i: Visual representation of how this thesis 'quilt' draws together

My thesis quilt is now complete and depicted by Figure i. Each coloured patch represents the various learnings, decisions and tasks I completed in this PhD thesis journey. The winding alphabet represents the tornado of words that jostled around in my head for years before being stitched together to create this completed thesis. The alphabet's obvious lack of symmetry representing the unwieldy nature of any PhD research. Yet all of the patches and letters have been woven together and encapsulated by a beautiful border to create an attractive, cohesive and unique quilt. Much like this quilt it is my hope that my PhD thesis has enabled you, the reader, to not only share in my PhD journey but enjoy reading a unique research contribution.

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Appendices

Appendix 1: Letter of approval for Study Three from DET

Department of
Education & Training

2 Treasury Place
East Melbourne Victoria 3002
Telephone: 03 9637 2000
DX210083

2017_003371

Associate Professor Claire Palermo
Monash University
BASE Facility
Level 1, 264 Ferntree Gully Road
NOTTING HILL 3168

Dear Associate Professor Palermo

Thank you for your application of 10 April 2017 in which you request permission to conduct research in Victorian government schools titled *Achievement Program in Victorian secondary schools.*

I am pleased to advise that on the basis of the information you have provided your research proposal is approved in principle subject to the conditions detailed below.

1. Department approved research projects currently undergoing a Human Research Ethics Committee (HREC) review are required to provide the Department with evidence of the HREC approval once complete.

2. The research is conducted in accordance with the final documentation you provided to the Department of Education and Training.

3. Separate approval for the research needs to be sought from school principals. This is to be supported by the Department of Education and Training approved documentation and, if applicable, the letter of approval from a relevant and formally constituted Human Research Ethics Committee.

4. The project is commenced within 12 months of this approval letter and any extensions or variations to your study, including those requested by an ethics committee must be submitted to the Department of Education and Training for its consideration before you proceed.

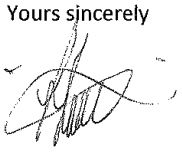
5. As a matter of courtesy, you advise the relevant Regional Director of the schools or governing body of the early childhood settings that you intend to approach. An outline of your research and a copy of this letter should be provided to the Regional Director or governing body.

6. You acknowledge the support of the Department of Education Training in any publications arising from the research.

7. The Research Agreement conditions, which include the reporting requirements at the conclusion of your study, are upheld. A reminder will be sent for reports not submitted by the study's indicative completion date.

I wish you well with your research. Should you have further questions on this matter, please contact Youla Michaels, Project Support Officer, Insights and Evidence Branch, by telephone on (03) 9637 2707 or by email at michaels.youla.y@edumail.vic.gov.au.

Yours sincerely



John Tomaino
A/Director
Insights and Evidence

9/05/2017

VICTORIA State Government

Appendix 2: Explanatory Statement for Study Two participants

MONASH University

EXPLANATORY STATEMENT

Study Two – Key informant interviews

Project: Nutrition education in Victorian Secondary Schools

Dr Claire Palermo
Department of Nutrition and Dietetics
Phone: 9902 4263
email: claire.palermo@monash.edu

Sarah Meiklejohn
Phone: 9902 4270
email: sjmei1@student.monash.edu

You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers via the phone numbers or email addresses listed above.

What does the research involve?

This research aims to investigate the process through which policy and curriculum decisions are made and implemented in relation to nutrition education of Victorian secondary school students, with particular interest in the Healthy Together Victoria Achievement Program, a 2012-2015 Victorian State Government led health and wellbeing initiative. This research is important as it is well documented that positive health habits in adolescence have the potential to be sustained into adulthood thus influencing long term health status and reducing nutrition related adult disease such as obesity, diabetes and chronic heart disease. However, little is currently known about the process and impact of nutrition education provided within Victorian secondary schools and the potential enablers and barriers being experienced by schools. Key findings will be used to guide future program and policy development.

The overall aims of the research are:

1. To investigate how nutrition education is currently framed in the Australian and Victorian secondary school curriculums.
2. To analyse the role of key stakeholders in influencing the priority given to nutrition education in secondary school curriculum
3. To explore the role and use of the Healthy Together Victoria Achievement Program in the provision of nutrition education to secondary school students.
4. To produce recommendations to inform future policies and guidelines for the provision of nutrition education to secondary school students in Victoria.

This component of the research aims to investigate how nutrition education is currently framed in the Australian and Victorian secondary school curriculum through the exploration of key stakeholders roles in influencing how nutrition education is delivered in secondary schools and how the Healthy Together Victoria Achievement Program was designed and proposed to assist in meeting the nutrition education requirements.

If you choose to participate in this project, this will involve a face-to-face or telephone interview of between 45-90 minutes duration. You will be asked about your role and experience in the delivery of nutrition education within the context of the Australian/Victorian curriculum guidelines and/or Healthy Together Victoria Achievement Program. This may include questions about how certain policy and guideline developments came about; who the key advocates were; how decisions were made; and other key factors that influenced the current curriculum or guidelines. You will be answering questions as an individual based on your experiences of working within this sector rather than as a representative of an organisation. Interviews will be audio-recorded and transcribed. You will have an opportunity to review your interview transcript and amend your responses if you are uncomfortable with any of the data being reported.

Why were you chosen for this research?

You have been selected because you are considered a key stakeholder in the Victorian secondary school curriculum in relation to nutrition education and/or the Healthy Together Victoria Achievement Program. Your name has been identified in publicly available documents or websites relevant to the Victorian secondary schools curriculum or Healthy Together Victoria policies and strategies that are being analysed in this project. Alternatively, you may have been referred to the study by another research participant. In order to participate in this study, you must be aged 18 years or over.

Consenting to participate in the project and withdrawing from the research

Participation in this research project is voluntary. If you do not wish to take part you are not obliged to. If you decide to take part and later change your mind, you are free to withdraw your participation from the project at any time. There are no disadvantages, penalties or adverse consequences for not participating or for withdrawing from the research.

You have the right to withdraw from active participation in this project at any time and, further, to ask that data arising from your participation are not used in the research project provided that this right is exercised within one week of receipt of your interview transcript. You must notify the researcher by email or telephone that you wish to withdraw your consent for your data to be used in this research project.

If you choose to participate in this research project your individual signed consent will be obtained prior to your participation. You will also be asked to complete a short background questionnaire prior to your participation.

Possible benefits and risks to participants

Possible benefits include having the opportunity to confidentially discuss your experience in the curriculum and program delivery process. Your participation will assist to inform future program and policy developments for Victorian adolescents.

It is not expected that there will be any significant risk, harms or discomforts associated with participating in this project. However it is possible that some participants may find participating in the study as inconvenient as a result of the time needed to participate. Should you become anxious or uncomfortable during or after the data collection you may wish to contact Lifeline by phoning 13 11 14.

It is also possible that particular statements published in the research findings could be linked to you. This risk will be minimised by ensuring all interview transcripts are anonymous, unless you give permission for your name to be included, and by giving you the opportunity to review your transcript so that you can withdraw certain passages if you want to.

Confidentiality

Confidentiality of the data will be ensured by assigning codes to each individual participant. Once your interview transcript has been typed, it will be sent to you to review. Your information will not be used until you have approved the transcript. Any information obtained in connection with this project that can identify you will remain confidential. It will only be disclosed with your permission, except as required by law. Passages from your interview transcript may be published in a community report, research thesis, conference presentations and/or academic journal. Your name will not be provided alongside this information in any publication, unless your permission is given to do so. You can also choose to have your name included in a list of participants that will be included in the Acknowledgments section of the research thesis and any other reports or publications. Your name will only be included if you give permission. You will be provided with a summary of the findings of the research.

Storage of data

The audio recording of the interview and/or hand-written interview notes along with your typed interview transcript and consent form will be kept in password-protected computer files and locked filing cabinets at Monash University. You may request a copy of these. Only the relevant members of the research team will have access to your data. After the research has been completed, your data will be locked in a filing cabinet at the Department of Nutrition and Dietetics at Monash University for a minimum of five years, after which time it will be securely destroyed.

Results

The results of this study will be reported in a thesis, scientific journal publication and presented at conferences. In all presentation of results every attempt will be made to protect the anonymity of participants. Participants may request a copy of these publications by contacting the researchers.

Complaints

Should you have any concerns or complaints about the conduct of the project, you are welcome to contact the Executive Officer, Monash University Human Research Ethics (MUHREC):

Executive Officer, Monash University Human Research Ethics Committee (MUHREC)
Room 111, Building 3e, Research Office, Monash University VIC 3800

Tel: +61 3 9905 2052 Email: muhrec@monash.edu Fax: +61 3 9905 3831

Thank you,

Dr Claire Palermo

Appendix 3: Consent form for Study Two participants

MONASH University

CONSENT FORM

Study Two – Key Informant Interviews

Project: Nutrition education in Victorian Secondary Schools

Chief Investigator: Dr Claire Palermo

I have been asked to take part in the Monash University research project specified above. I have read and understood the Explanatory Statement and any questions I have asked have been answered to my satisfaction. I hereby consent to participate in this project. I agree that research data provided by me or with my permission may be included in a thesis, presented at conference and published in journals on the condition that neither my name nor any other identifying information is used.

I consent to the following:	Yes	No
Audio recording during the interview	☐	☐
Written notes to be taken during the interview	☐	☐
That I must notify the researcher by email or telephone if I wish to withdraw my consent for my data to be used in this research project	☐	☐
That the researcher will assume consent to use my data if they have not received an email or telephone call from me within one week of receipt of my interview transcript	☐	☐
The data that I provide during this research may be used by the research team in future research projects.	☐	☐

Name of Participant _____

Participant Signature _____ Date _____

Appendix 4: Demographic questionnaire for Study Two participants

MONASH University

BACKGROUND DEMOGRAPHIC QUESTIONNAIRE

Study Two – Key informant interviews

Before we start the interview we would like to learn a little bit about you.
Please read the following questions carefully and complete each question by circling the answer relevant to you.

This questionnaire should not take more than 2 minutes to complete.

DATE:_____

1. GENDER

Male Female Prefer not to say

2. EMPLOYMENT STATUS (please circle)

Full time Part time Volunteering Casual

3. HOW LONG HAVE YOU BEEN EMPLOYED IN YOUR CURRENT ROLE? LESS THAN 6 MONTHS

Less than 12 months 1-2 years 2-5 years

5-10 years >10 years

THANK YOU

Appendix 5: Study Three case study protocol

STUDY THREE CASE STUDY PROTOCOL

A. Introduction and purpose of the study

a. Case study aim:

To explore the experiences of Victorian secondary schools in implementing the Achievement Program and achieving recognition for their chosen priority areas. The primary outcome of this study will be identifying factors which enabled successful implementation of the Achievement Program in Victorian secondary school settings.

b. Theoretical framework for the case study:

Literature related to the WHO HPS framework suggests that long term implementation in secondary school settings is difficult due to a number of reasons. However several factors have been identified in the literature that can contribute to health and wellbeing initiatives successfully improving health and wellbeing outcomes for adolescents. The presence of these factors within Victorian secondary schools needs to be explored in relation to the state government's newest funded health and wellbeing initiative.

c. Researcher's topics of interest:

i) engagement and motivation of secondary schools
ii) enablers to success
iii) capacity, support and resources
iv) impacts and values attributable to Achievement Program
v) curriculum and policy changes and adherence
vi) barriers and challenges to success
vii) cost – economic and time
viii) sustainability
ix) future directions and participation in the Achievement Program
x) improvements – recommendations for their school and for overall program
xi) sharing learning with other secondary schools

B. Data collection procedures

a. Details of sites to be visited:

i) Secondary school – regional Victoria

b. Criteria for selected case:

i) School achieved recognition for at least one HPA in the Achievement Program since its inception

c. Data collection plan:

i) Unstructured observation of school environment using observation tool

ii) In-depth interviews with key staff involved in planning and implementation

iii) Focus groups with parents and students who were involved with planning and implementation OR were recipients of initiatives instigated within Achievement Program

iv) Structured analysis of documents related to Achievement Program developed or revised in order to achieve recognition for the school's chosen priority areas

v) Reflective journal after each in-depth interview or focus group

vi) Reflective journal at the end of data collection for each school

d. Expected preparation prior to site visits:

i) Make formal contacts with the schools to organise interviews and focus groups

ii) Provide copies of consent forms to participants and demographic forms

iii) Ethics approval granted for the case studies

iv) Understanding of school environment, aims, mission, values

v) Understanding of HPA successful completed

C. Post data-collection report

a. School demographic details

b. School Achievement Program details (registration dates, Achievement dates)

c. Chronology of events covering the planning, implementation and application for recognition of schools

d. Factors contributing towards success in the schools – summary of enablers and barriers to success

e. Summary of key contacts

Appendix 6: Study Three Recruitment email

MONASH University

RECRUITMENT EMAIL

Study Three – Secondary school case study investigation

Dear **please add name here**,

Monash University is current involved in a research project entitled 'Adolescents, Achievement Program and an ambitious curriculum' and I am contacting you today to enquire as to whether **please add school here** might have an interest or the capacity to participate in this research project.

This research aims to explore the role and use of the Achievement Program in the delivery of health and wellbeing and nutrition initiatives in secondary schools. The research will use case study methodology to explore the experiences of Victorian secondary schools in implementing the Achievement Program and achieving recognition for their chosen priority areas. The primary outcome of this study will be identifying factors which enabled successful implementation of the Achievement Program in Victorian secondary school settings. The findings may be used to assist other schools in achieving similar success and may be used by Cancer Council Victoria which delivers program and the Department of Health and Human Services (DHHS) which funds the program to inform future Achievement Program improvements.

We are therefore contacting **please add school here** as it has been identified by the Cancer Council Victoria as a secondary school that has successfully achieved recognition for your chosen priority areas of the Achievement Program.

What would be involved?

School involvement in this study would involve interviews and focus groups with key staff, teachers, parents and students who were involved in implementation of the Achievement Program and activities related to achieving recognition for priority areas. Alongside these interviews and focus groups, we hope to explore school documents related to implementation of the Achievement Program such as health and wellbeing policies and correspondence/meeting minutes which may have been reviewed or developed as part of the process.

Interview and focus group discussion topics will include: engagement with the Achievement Program, selection of health priority areas, enablers to progression and completion, key changes and learnings that have occurred within the school during implementation, recommendations for improvements to the Achievement Program. Interviews and focus groups will last no longer than 90 minutes. The exact number of interviews and focus groups conducted will be negotiated one a case by case basis however it is anticipated that a minimum of two focus groups with a minimum of four participants (for example, one with staff and teachers, and one with students) will be required. An

individual interview with the school principal and/or assistant principals will also be scheduled. Interviews and focus groups will be conducted at times deemed convenient to participants and researchers will endeavour to complete all data collection within a two week period from August to December 2018 to ensure that the burden on any participants will be minimal.

Participation in this research is voluntary. If **Please add school here** does not have an interest or capacity to participate it will not affect the relationship between **please add school here**, Cancer Council Victoria, the Department of Health and Human Services or Department of Education and Training. If **please add school here** decides to take part and later changes their mind**, please add school here** is free to withdraw their participation from the research at any time. There are no disadvantages, penalties or adverse consequences for not participating or for withdrawing from the research. Participating schools will be provided with a copy of reports generated from the research and will be invited to work with researchers to develop a case study profile to promote the school's success in implementing the Achievement Program as compensation for their time and views.

Privacy and ethical considerations

In line with ethical considerations, no participants will be identifiable in any publications or presentations that may result from this research in order to protect the participants' privacy unless prior permission has been granted. This research has been approved by the Monash University Human Research Ethics Committee until 2020.

Who is conducting this research?

Associate Professor Claire Palermo from the Department of Nutrition, Dietetics and Food. Monash Universityis the lead researcher for this research project. Claire is an experienced qualitative researcher in particular research in community settings.

Professor Anna Peeters from Deakin University is a Professor of Epidemiology and Equity in Public Health and Associate Director, Global Obesity Centre (GLOBE), World Health Organization Collaborating Centre for Obesity Prevention

Sarah Meiklejohn is an Accredited Practicing Dietitian who has worked in a variety of community health and government roles. She has previously worked for Peninsula Health and Access Health as a Health Promotion Officer and Paediatric Dietitian and has extensive experience in the implementation and evaluation of school-based health promotion initiatives including Kids Go For Your Life (KGFYL) and Smiles 4 Miles (S4M). Sarah completed a Bachelor of Nutrition (Hons) in 2013 and is currently working as a teaching associate in the Department of Nutrition, Dietetics and Food at Monash University. This research forms part of Sarah's doctoral research program at Monash University.

Are you interested in finding out more about this research?

Should **please add school here** have an interest or capacity to participate in this study, please contact **(insert name)** from Cancer Council Victoria by the end of Term 3, Friday 21st September, who will be able to provide further information and documentation about this research project.

We look forward to your response.

Appendix 7: Explanatory statement for Study Three participants

MONASH University

EXPLANATORY STATEMENT

Study Three – Secondary school case study investigation

Project: Achievement Program in Victorian Secondary Schools

Dr Claire Palermo
Department of Nutrition and Dietetics
Phone: 9902 4263
email: claire.palermo@monash.edu

Sarah Meiklejohn
Phone: 9902 4270
email: sjmei1@student.monash.edu

You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers via the phone numbers or email addresses listed above.

This research aims to explore the role and use of the Achievement Program in the delivery of health and wellbeing and nutrition initiatives in secondary schools. The research will use case study methodology to explore the experiences of Victorian secondary schools in implementing the Achievement Program and achieving recognition for their chosen priority areas. The primary outcome of this study will be identifying factors which enabled successful implementation of the Achievement Program in Victorian secondary school settings. The findings may be used to assist other schools in achieving similar success and may be used by Cancer Council Victoria which delivers program and the Department of Health and Human Services (DHHS) which funds the program to inform future Achievement Program improvements.

What is involved?

School involvement in this study would involve interviews and focus groups with key staff, teachers, parents and students who were involved in implementation of the Achievement Program and activities related to achieving recognition for priority areas. Alongside these interviews and focus groups, we hope to explore school documents related to implementation of the Achievement Program such as health and wellbeing policies and correspondence/meeting minutes which may have been reviewed or developed as part of the process. Interview and focus group discussion topics will include: engagement with the Achievement Program, selection of health priority areas, enablers to progression and completion, key changes and learnings that have occurred within the school during implementation, recommendations for improvements to the Achievement Program.

Interviews and focus groups will last no longer than 90 minutes. The exact number of interviews and focus groups conducted will be negotiated one a case by case basis however it is anticipated that a minimum of two focus groups with a minimum of four participants (for example, one with staff and

teachers, and one with students) will be required. An individual interview with the school principal and/or assistant principals will also be scheduled. Interviews and focus groups will be conducted at times deemed convenient to participants and researchers will endeavour to complete all data collection within a two week period from August to December 2018 to ensure that the burden on any participants will be minimal.

Participation in this research is voluntary. If you do not wish to participate it will not affect the relationship with Cancer Council Victoria, the Department of Health and Human Services or Department of Education and Training. If you do decide to participate and later changes their mind**,** you are free to withdraw your participation from the research at any time. There are no disadvantages, penalties or adverse consequences for not participating or for withdrawing from the research. Participating schools will be provided with a copy of reports generated from the research and will be invited to work with researchers to develop a case study profile to promote the school's success in implementing the Achievement Program as compensation for their time and views.

Possible benefits and risks to participants

Possible benefits include having the opportunity to confidentially discuss your experience of implementing the Achievement Program policy. Your participation will assist to inform future Achievement Program policy developments and changes.

It is not expected that there will be any significant risk, harms or discomforts associated with participating in this project. However it is possible that some participants may find participating in the study as inconvenient as a result of the time needed to participate. Should you become anxious or uncomfortable during or after the data collection you may wish to contact Lifeline by phoning 13 11 14.

Confidentiality

Confidentiality of the data will be ensured by assigning codes to each individual participant. Once your interview transcript has been typed, it will be sent to you to review. Your information will not be used until you have approved the transcript. Any information obtained in connection with this project that can identify you will remain confidential. It will only be disclosed with your permission, except as required by law. Passages from your interview transcript may be published in a community report, research thesis, conference presentations and/or academic journal. Your name will not be provided alongside this information in any publication, unless your permission is given to do so. You can also choose to have your name included in a list of participants that will be included in the Acknowledgments section of the research thesis and any other reports or publications. Your name will only be included if you give permission. You will be provided with a summary of the findings of the research.

Storage of data

The audio recording of the interview and/or hand-written interview notes along with your typed interview transcript and consent form will be kept in password-protected computer files and locked filing cabinets at Monash University. You may request a copy of these. Only the relevant members of the research team will have access to your data. After the research has been completed, your data

will be locked in a filing cabinet at the Department of Nutrition and Dietetics at Monash University for a minimum of five years, after which time it will be securely destroyed.

Results

The results of this study will be reported in a thesis, scientific journal publication and presented at conferences. In all presentation of results every attempt will be made to protect the anonymity of participants. Participants may request a copy of these publications by contacting the researchers.

Complaints

Should you have any concerns or complaints about the conduct of the project, you are welcome to contact the Executive Officer, Monash University Human Research Ethics (MUHREC):

Executive Officer, Monash University Human Research Ethics
Committee (MUHREC)
Room 111, Building 3e, Research Office, Monash University VIC 3800

Tel: +61 3 9905 2052 Email: muhrec@monash.edu Fax: +61 3 9905 3831

Thank you,

Dr Claire Palermo

Appendix 8: Consent form for Study Three participants

MONASH University

CONSENT FORM

Study Three – Secondary school case study investigation

INTERVIEWS and FOCUS GROUPS

Project: Achievement Program in Victorian Secondary Schools

Chief Investigator: Dr Claire Palermo

I have been asked to take part in the Monash University research project specified above. I have read and understood the Explanatory Statement and any questions I have asked have been answered to my satisfaction. I hereby consent to participate in this project. I agree that research data provided by me or with my permission may be included in a thesis, presented at conference and published in journals on the condition that neither my name nor any other identifying information is used.

I consent to the following:	Yes	No
Audio recording during the interview/focus group	☐	☐
Written notes to be taken during the interview/focus group	☐	☐
That I must notify the researcher by email or telephone if I wish to withdraw my consent for my data to be used in this research project	☐	☐
That the researcher will assume consent to use my data if they have not received an email or telephone call from me within one week of receipt of my interview transcript	☐	☐
The data that I provide during this research may be used by the research team in future research projects.	☐	☐

Name of Participant _____

Participant Signature _____ Date _____

Participant parent/guardian Signature _____ Date _____

Appendix 9: Consent for document collection for Study Three

MONASH University

CONSENT FORM

Study Three – Secondary school case study investigation

USE OF SCHOOL DOCUMENTATION AND CONDUCTING OF OBSERVATIONS

Project: Achievement Program in Victorian Secondary Schools

Chief Investigator: Dr Claire Palermo

Our school has been asked to take part in the Monash University research project specified above. I have read and understood the Explanatory Statement and any questions I have asked have been answered to my satisfaction. On behalf of my school I hereby consent for school documentation that we share to be used as part of this research. I also consent for the researchers to conduct observations of the school environment as part of this research. I agree that research data provided by me or with my permission may be included in a thesis, presented at conference and published in journals on the condition that neither my name nor any other identifying information is used.

I consent to the following:	Yes	No
Provision of school documentation related to the Achievement Program	☐	☐
Use of school documentation related to the Achievement Program by researchers	☐	☐
Observations of the school environment to be conducted by the researchers	☐	☐
Written notes to be taken during observations of the school environment	☐	☐
The data provided during this research may be used by the research team in future research projects.	☐	☐

Name of Participant _____

Participant Signature _____ Date _____

Appendix 10: Annotate diagram for Study Three Participants

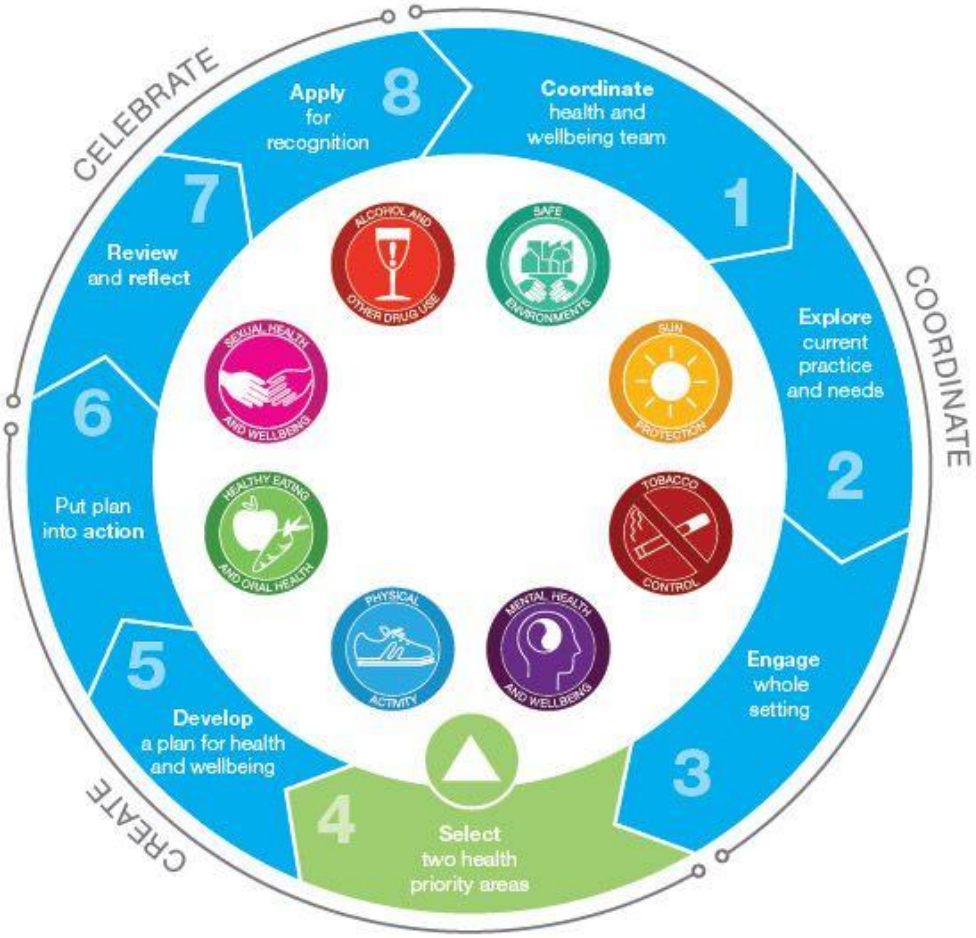
ACHIEVEMENT PROGRAM CYCLE

Below is the original Achievement Program cycle, proposed as an eight step cycle to guide schools as they worked towards recognition for their chosen health priority areas.

As part of this interview we are interested in learning more about the key events or activities that took place at your school during each step or phase (coordinate, create and celebrate) in the cycle.

Please annotate the cycle with any initial comments or thoughts you may have.

We will draw upon your annotated cycle throughout the interview.



Appendix 11: Observation tool for Study Three

OBSERVATION TOOL FOR MULTIPLE-CASE STUDY (during/post observation/visit)

Achievement Program – HPS secondary schools case studies

School name	
School location	
School LGA	
School classification (gov, catholic, independent)	
School size	
HPA achieved	
Date of registration with AP	
Dates of HPA achieved/how long?	
Data collection period	

Key contact for Achievement Program	
Working group members for Achievement Program	

Relevant policies (existing/new/ revised) Curriculum documents	

Governance structures in place/ established for Achievement Program	

Environmental observations – what facilities were present? What facilities were new and added to achieve HPS? Canteens? Shade? Physical activity spaces? Playgrounds? Water taps? Signage?	

Existing programs? Partnerships with community health? Previously KGFYL?	

Personnel observations (drawings)	

Personal observations (drawings)	

Personal observations (drawings)	

Researcher log – immediate thoughts/gut feelings/ initial interpretations to case findings	

Big picture thoughts – epiphanies – discussion points – future directions	

THE END

Appendix 12: Coding framework for Study Three

Study 3 – Coding Framework – Version 2.0 – December 2018

1.0 BIOGRAPHICAL CAREER INFORMATION

This theme refers to the biographical information participants share about their job title and professional career.

1.1 Job title: Deputy Principal of Student Wellbeing

This code refers to people that identified as being the Deputy Principal of Student Wellbeing.

1.2 Job title: Student Wellbeing coordinator

This code refers to people that identified as the Student Wellbeing coordinator.

1.3 Job title: Student Wellbeing team member

This code refers to people that identified as a member of the Student Wellbeing team.

2.0 REASONS TO ACCOUNT FOR ***WHY*** SECONDARY SCHOOL IMPLEMENTING THE ACHIEVEMENT PROGRAM

This theme applies to reasons identified for why the secondary school has specifically chosen to engage with the Achievement Program

2.1 Accolades

This subtheme relates to the school wanting to be recognised as a lead secondary school in health and wellbeing.

2.2 School expansion

This subtheme relates to the school choosing to implement the Achievement Program in order to attract more students and families to the school.

2.3 Alignment with school health and wellbeing aims

This subtheme relates to the school identifying the Achievement Program as being aligned with the existing health and wellbeing directives and aims of the school.

2.3.1 Recognisable whole of school framework

This code should be used when participants refer to the preference given to implementing an existing recognised/validated health and wellbeing framework. May also be applied when participants speak of the school's journey to identifying a whole of school framework/approach.

2.3.2 School mission

This code should be used when participants reference an existing focus or awareness of student health and wellbeing or alignment of the Achievement Program with the overall mission statement of the school.

2.3.3 School health and wellbeing data

This code should be used when participants refer to school student health and wellbeing data and its role in informing provision and selection of health and wellbeing initiatives. Or may be applied when participants refer to increases in student issues and a shift in needs around health and wellbeing services or the presence of behavioural management as a constant school priority.

2.3.4 Entire school environment

This code should be used when participants refer to the Achievement Program encompassing different facets of the school environment

2.3.5 Academic performance increased

This code should be used when participants speak of the link between student health and wellbeing and academic performance i.e. healthy students perform better academically

2.4 Alignment with curriculum

This subtheme relates to participants' examples of how the Achievement Program aligns with the school curriculum or expressions of perceptions of such alignment.

2.5 Credibility of Achievement Program

This subtheme relates to the perceived and actual credibility of the Achievement Program. It may be used when participants discuss the Achievement Program's reputation in relation to the government support it receives or its basis in the HPS framework.

2.6 Quality improvement

This subtheme should be used when participants refer to how the Achievement Program facilitated aspects of quality improvement within the school.

2.6.1 Gaps identified

This code should be used when participants describe how the Achievement Program eight step cycle enabled them to identify gaps or deficiencies in their approaches to health and wellbeing.

2.6.2 Policy development and revision

This code should be used when participants describe the contribution of the Achievement Program to informing development or revision of policies related to chosen health priority areas.

2.6.3 Accountability

This code should be used when participants speak of how the Achievement Program has created accountability for the health and wellbeing initiatives implemented in the school.

2.7 Structure of Achievement Program

This subtheme relates to how the structure of the Achievement Program contributed to why the school chose to implement the Achievement Program.

2.7.1 Clear instructions

This code is used when participants describe the expected steps, benchmarks and outcomes of the Achievement Program cycle as being clear or easy to follow.

2.7.2 No time constraints

This code is used when participants describe the absence of time frames or constraints associated with implementation of the Achievement Program.

3.0 EXPLANATIONS FOR ***HOW*** SECONDARY SCHOOL IMPLEMENTING THE ACHIEVEMENT PROGRAM

This theme applies to reasons identified for 'how' the secondary school has achieved recognition in the Achievement Program. This will include generalizable characteristics or attributes of Victorian secondary schools that have contributed to the school's success.

3.1 Invested leadership

This subtheme relates to the role of leadership support and resource investment in the Achievement Program.

3.1.1 Deputy Principal of Student Wellbeing

This code should be used when participants identify the Deputy Principal of Student Wellbeing as having a pivotal role in assisting implementation and recognition. This may include exploration of how the Deputy Principal's role is novel or leveraged by staff. It may also include attributes of the Deputy Principal such as supporting the decisions of the health and wellbeing staff, providing autonomy with their workload and being charismatic and having good working relationships with staff.

3.1.2 Trusting leadership

This code should be used when participants identify supportive leadership. This includes the School Principal as well as the Deputy Principals. This may also include the presence of a supportive school culture which stems from the Principals and other school leaders.

3.2 Existing health and wellbeing focus

This subtheme relates to how the Achievement Program aligns with the existing health and wellbeing focus and policies of the school and 'how' this has facilitated or contributed the school's successful implementation. This may include exploration of health and wellbeing data generated by the school and how this is incorporated to inform Achievement Program activities and planning.

3.3 Workforce capacity

This subtheme relates to the school workforce availability and capacity to progress the Achievement Program.

3.3.1 Allocation of flexible staff EFT

This code should be used when participants refer to the staff EFT or time available to work on/progress activities related to the Achievement Program. This includes flexibility and autonomy within staff workloads/schedules to progress Achievement Program activities as they deem necessary. This may include teaching staff being given time to assist with planning and implementation activities or providing evidence to assist recognition.

3.3.2 Distribution of health priority areas

This code should be used when participants describe allocation of different health priority areas to different staff members or groups to facilitate faster achievement of chosen priority areas

3.3.3 Previous health promotion experience

This code should be used when participants describe previous or existing knowledge and experience in planning, delivering or evaluating health promotion and school based health promotion initiatives.

3.4 School resources

This subtheme relates to the various school based resources participants may identify as contributing to or assisting with achieving recognition for chosen health priority areas.

3.4.1 Funding

This code should be used when participants identify funding that was allocated to the Achievement Program or was available to assist with completion of activities related to chosen health priority areas and achieving benchmarks for these areas. i.e. Funding that was available to the health and wellbeing team that could be used to fund activities related to the Achievement Program.

3.4.2 Low operational costs

This code should be used when participants refer to the low perceived or actual costs of implementing the Achievement Program. This may be financial costs or costs related to staff time etc.

3.4.3 Parents and Friends Association

This code should be used when participants describe assistance or activities completed by the Parents and Friends Association to assist with progression and achievement of chosen health priority area benchmarks. For example, the Parents and Friends Association may have reviewed policies that were provided as evidence when applying for recognition of a health priority area.

3.5 Local resources

This subtheme relates to the various community based resources i.e. those sitting outside of the school community identified by participants as contributing to or assisting with achieving recognition for chosen health priority areas.

3.5.1 Health promotion worker/liaison

This code should be used when participants describe the role of local health promotion workers in assisting progression. This may include staff at local organisations or community health service with time/funding allocated within their roles to assist schools and workplaces in implementation of the Achievement Program. This may include the worker's role in introducing the school to the program, as well as ongoing support and advice.

3.5.2 Topic experts and organisations

This code should be used when participants refer to drawing on advice and assistance from local topic experts and organisations. For example, HeadSpace to progress/achieve mental health and wellbeing priority area.

3.5.3 Cancer Council Victoria funding

This code should be used when participants describe applications for or receipt of funding and small grants offered by Cancer Council Victoria to assist in facilitation of activities related to the Achievement Program.

3.6 Selection of health priority areas

This subtheme relates to participants comments related to how and why they chose which health priority areas to work towards.

3.6.1 Easiest ones first

This code should be assigned when participants identify starting with the health priority areas they felt strongest in or were the 'easiest' to achieve as their reason for selection.

4.0 FACTORS CONTRIBUTING TO SECONDARY SCHOOL ACHIEVING RECOGNITION FOR CHOSEN PRIORITY AREAS

This theme applies to factors, attributes or characteristics that are unique to the particular school involved in achieving successful recognition for their chosen health priority areas.

4.1 Core priority of school

This subtheme relates to how the Achievement Program aligned with the core priorities of the school around student and staff health and wellbeing and the value placed on health and wellbeing within the school environment.

4.1.1 Student Wellbeing Framework

This code should be used when participants refer to the school's existing student wellbeing framework and how this aligns with the Achievement Program.

4.1.2 Religious influences

This code should be used when participants refer to religious influences within the school environment or curriculum which may have contributed to selection or success with the Achievement Program. This may also refer to how religious influences within the school environment inform staff priorities for the students and how this aligns with the Achievement Program. For example, participants may identify the link between the catholic identity and focus on educating a whole person and how this aligns with the underlining principles of the HPS framework, upon which the Achievement Program is based.

4.1.3 Leader priority

This code should be used when participants refer to the value and priority placed by school leadership and senior staff on health and wellbeing of staff and students and how this has influenced progression within the Achievement Program.

4.1.4 Family priority

This code should be used when participants refer to the value and importance placed on health and wellbeing by families attending the school.

4.1.5 Timely

This code should be used when participants refer to introduction of the Achievement Program to the school as being timely. This may be due to reasons such as the school reviewing policies

related to health and wellbeing or because the school was seeking a whole of school approach to health and wellbeing at the time of being introduced to the Achievement Program.

4.2 Workforce capacity

This subtheme relates to individual characteristics of staff members or the school workforce that have assisted or facilitated achievement of chosen priority areas

4.2.1 Trusting leadership

This code should be used when participants describe the role of trusting and supportive leadership in enabling progression and recognition of chosen health priority areas. This may include leadership providing top down trust and support in staff expertise as well as encouraging autonomy in staff workloads and schedules to prioritise particular health priority areas and how they progress towards recognition.

4.2.2 Trained and/or experienced school staff

This code should be used when participants identify staff within the school with training, education or experienced relevant to the Achievement Program. This may include prior experience in implementing school based health promotion activities or initiatives based upon the Health Promoting Schools framework, or higher education degrees or advanced training in health promotion/health and wellbeing.

4.2.3 Allocated EFT/staff time

This code should be used when participants identify people with time allocated within their roles to progress school activities related to the Achievement Program. This may include: how staff time is allocated, how staff actions to progress various health priority areas are decided, recent changes to staff roles to facilitate time for Achievement Program activities.

4.2.4 OH&S team

This is when participants talk about using the existing school OH&S committee to assist policy revisions and actions related to achieving the benchmarks for chosen health priority areas.

4.2.5 Student Wellbeing Leader

This is when participants talk about the introduction of a Student Wellbeing Leader to .assist with planning and implementation of student related activities which may contribute to achieving benchmarks for the chosen health priority areas.

4.3 School resources

This subtheme relates to school base resources that have assisted progression and achievement of chosen health priority areas.

4.3.1 Health and wellbeing budget

This is when participants talk about the school health and wellbeing budget available to support Achievement Program activities.

4.3.2 Year level approaches to health and wellbeing

This is when participants talk about drawing upon a ‘year level approach’ to health and wellbeing throughout the school. This may relate to planning, implementation and evaluation.

4.4 Local resources

This subtheme relates to the various community based resources i.e. those sitting outside of the school community identified by participants as being a factor unique to the school that contributed to or assisted with achieving recognition for chosen health priority areas

4.4.1 Health Promotion worker/liaison

This code should be used when participants describe aspects of how local health promotion workers/liaisons assisted their progression. This may include how the worker introduced the school to the program, support and advice provided, and attendance at training sessions that would benefit staff from the school. It may also relate to individual characteristics of that person such as their enthusiasm for the Achievement Program or flexible work schedule etc. Credibility of AP model

4.5 Celebration of achievements

This subtheme relates to descriptions of how staff celebrated receipt of recognition for health priority areas and how this was celebrated by the school and the impact this had on motivations to pursue further health priority areas. This may also include receiving items such as signs for the school gate and priority area labels as well as certificates to be displayed at the school.

5.0 CHALLENGES SECONDARY SCHOOL HAS FACED/ANTICIPATES

This theme relates to challenges identified by participants in implementing the Achievement Program in their setting. This may include challenges already faced or those anticipated in the future. This may also include challenges related to implementation more broadly throughout the school environment or may relate to a specific chosen health priority area.

5.1 Getting started

This subtheme relates to challenges identified in the school with starting actions once registered to participate.

5.1.1 Delays from registration to action

This code should be used when participants describe the lack of action between registration and commencing the first steps of the cycle.

5.1.2 Misleading time data

This code should be used when participants express concerns related to how long the health priority areas appear to have taken to complete due to the delay between registration and actions commencing

5.1.3 Health and wellbeing team autonomy

This code should be used when participants describe challenges associated with being a ‘solo’ team that is not multi-disciplinary or integrated throughout the entire school.

5.2 Healthy eating and oral health priority area challenges

This subtheme relates to challenges experienced or anticipated in relation to working towards the healthy eating and oral health priority area benchmarks.

5.2.1 Fundraisers and events

This code should be used when participants mention food and nutrition challenges associated with fundraisers. This may include parent morning teas, sausage sizzles, year level lunches, staff fundraisers for their children, chocolate drives. This may include revision of school food, nutrition and catering policies.

5.2.2 Canteen

This code should be used when participants mention difficulties associated with changing or reviewing canteen menu items or interactions with canteen staff members.

5.2.3 Food and nutrition committee

This code should be used when participants mention the absence of or need for a food and nutrition committee or staff meetings to progress this health priority area. This may also include comments in relation to ensuring the changes to HEOH are seen as a 'whole of school' priority and not simply the work of particular individuals.

5.2.4 External resources

This code should be used when participants describe plans to draw on external resources to assist with managing some of the difficult tasks associated with the priority area such as review of the canteen menu. This may also include challenges participants have experienced in accessing external resources such as the online portal or menu review tools.

5.3 Challenges with engaging staff

This subtheme relates to challenges experienced by participants in engaging teaching staff in implementation of the Achievement Program. This may include teachers' reluctance to learn about the Achievement Program or assist in implementation of activities related to specific health priority areas. This may also include descriptions of teaching staff claiming to be unaware or uninformed of the importance of the Achievement Program or its presence at the school.

5.4 Challenges anticipated with sun protection priority area

This subtheme relates to anticipated issues when working towards the sun protection health priority area benchmarks. This may include comments related to the current limitations of undercover space or references to the benchmarks that may be difficult to achieve. This may also include comments related to future actions and changes that may need to be may i.e. incorporating under cover or shaded areas in upcoming building works/expansions/plans.

5.5 Challenges with physical activity priority area

This subtheme relates to experienced or anticipated challenges and issues when working towards the physical activity health priority area benchmarks. This may include challenges with engaging staff outside of the health and wellbeing team or ensuring that engaged staff remain involved throughout the entire process i.e. staff do not simply complete one task and feel that their role is complete even if 'recognition' status has not yet been achieved.

5.6 Challenges anticipated with sexual health priority area

This subtheme relates to experienced or anticipated challenges and issues when working towards the sexual health priority area benchmarks. This may include challenges with staff, policies or the curriculum. This may include discussions related to the implications of the school's core values or religious orientations/affiliations.

6.0 IMPACTS

This theme relates to the participants perceptions of the impacts or outcomes of the Achievement Program within their school to date. This may include impacts related to students, staff, or the broader school community.

6.1 Policies

This code should be used when participants describe the development, review or progression of school policies as an impact or outcome within the school.

6.2 Reach of impacts

This code should be used when participants describe the reach of the impacts. This may include reach to students, staff, parents and the local community.

6.3 Knowledge of impacts

This code should be used when participants describe those people likely to have knowledge of the impacts or those in a position to attribute impacts and changes in the school to the Achievement Program. This may include participants perceptions that only involved staff will know of the impact and what these are in relation to the Achievement Program.

7.0 FUTURE DIRECTIONS AND SUSTAINABILITY

This theme relates to areas participants discussed in relation to future directions and plans for the Achievement Program implementation and sustainability within their school.

7.1 Whole of school approach

This code should be used when participants describe plans or expected actions in relation to adopting a 'whole of school approach' in its intended form to ensure the entire school community is aware of the priority being given to this program by school leadership i.e. including members of the school community outside of the existing working group which may include students, parents and teaching staff. This may also include providing staff and teaching staff with allocated time to assist with implementation of the Achievement Program.

7.2 Complete health priority areas

This code should be used when participants describe aspirations to be recognised in all health priority areas or describe current efforts towards health priority areas not yet achieved.

8.0 SUGGESTED IMPROVEMENTS

This theme relates to program improvements participants may have suggested. This may include improvements to the overall Achievement Program structure and resources, or may relate to school based improvements and future actions.

8.1 Improvements to website

This code should be used when participants speak of suggested improvements to the website and portal schools use to facilitate implementation.

8.2 Benchmark reviews

This code should be used when participants refer to review of 'recognition' status for benchmarks previously achieved.

8.3 Advertising

This code should be used when participants refer to encouraging more local and state based advertising of the Achievement Program to increase recognition for those schools already registered and increase community interest and school registrations.

8.4 Team development

This code should be used when participants refer to the importance of clearly identifying the importance of setting up a whole of school team approach to implementation from the beginning. This includes ensuring that leadership truly understand the level of involvement that will be required from the entire school community including curriculum/teaching staff.

9.0 INTERESTING FINDINGS OF OBSERVATIONS

This theme relates to any interesting points that may not have been captured in the first six themes of this framework. This may include participant comments or document content that does not appear to relate directly to the research questions for this study but are nonetheless interesting findings that may add value to the overall school experience or story. For example, the absence of a SSNP, misunderstanding between HTV and Achievement Program, or perception that the HEOH priority area may need more people to assist than any other priority area.

10.0 GREAT QUOTES

This theme is for great quotes that may relate to any codes or themes identified in this framework. It should be used to highlight quotes that should be used in manuscripts or may be used as catchy titles for manuscripts.