Understanding the *LiveLighter* obesity prevention policy decision-making process: a case study using political science and complex systems theory

Abstract

The health and economic burden of the high prevalence of overweight and obesity warrants comprehensive policy action; however, to date, there has been limited policy progress globally. This study sought to advance obesity prevention policy research and practice by applying multiple theories of the policy process to study decision-making within a multi-level, multi-strategy, obesity prevention initiative implemented in Victoria, Australia. Through analysis of documents and interviews with policy makers and actors, this qualitative study aimed to gain a better understanding of the influences on policy decision-making for various obesity prevention policy initiatives. The focus of this paper is on the 2014 decision of the Victorian Government to adopt the *LiveLighte*r social marketing campaign that used graphic imagery and shock tactics in an effort to promote healthier eating behaviours. The results highlighted a number of key enablers of the decision to adopt *LiveLighter*, including federal Australian government political and financial support for chronic disease prevention at the time, as well as the availability of sufficient evidence of the problem, and evidence of intervention effectiveness from other jurisdictions. Nevertheless, central policy makers demonstrated significant political capacity in overcoming a number of barriers that included resistance from key stakeholder groups, and the perceived potential negative consequences of *LiveLighter* implementation. This paper illustrates the complexity of the policy processes and systems that influenced the decision to fund the *LiveLighter* campaign through the complex systems science methodology of Causal Loop Diagraming (CLD). The findings will be integrated with results from analyses of decision-making regarding other obesity prevention

policy initiatives in this context to provide recommendations for policy actors seeking to influence similar obesity prevention policies in future.

Introduction

The obesity epidemic is responsible for a significant burden of disease globally (Roberto, Swinburn et al. 2015). This burden is related to the increased risk of cardiovascular disease, diabetes, cancers, chronic respiratory diseases and many other conditions associated with obesity (World Health Organisation 2010). Consequently, there has been increasing advocacy for obesity prevention policy action (Huang, Cawley et al. 2015, Roberto, Swinburn et al. 2015). Furthermore, there is a global consensus that a broad range of policy responses are needed, including legislative and quasi-regulatory approaches, environmental strategies and behavioural interventions (Sacks, Swinburn et al. 2008, Swinburn 2008, Sacks, Swinburn et al. 2009, Brambila-Macias, Shankar et al. 2011, Gortmaker, Swinburn et al. , Mytton, Clarke et al. 2012, Crammond, Van et al. 2013, Hawkes, Jewell et al. 2013, Dobbs, Sawers et al. 2014, Lloyd-Williams, Bromley et al. 2014, Mills 2014). However, implementation of these recommended policies has been slow and inadequate globally. Accordingly, studies have begun exploring the political determinants of obesity prevention policy adoption (Clarke, Swinburn et al. 2016, Baker, Gill et al. 2017, Payán, Lewis et al. 2017).

To date, primary studies of obesity prevention policy processes, across numerous political contexts, have identified a number of barriers to and enablers of the adoption of various policy instruments (Allender, Gleeson et al. 2011, Shill, Mavoa et al. 2012, Shill, Mavoa et al. 2012, Crammond, Van et al. 2013, Walton, Signal et al. 2013, Waqa, Mavoa et al. 2013, Sadler, Gilliland et al. 2014). Barriers to obesity prevention policy adoption typically identified include the influence of powerful stakeholder groups (such as the food industry) (Mialon, Swinburn et al. 2017), incompatible political ideology (for example, neoliberalism) (Henderson, Coveney et al. 2009, Baker, Gill et al. 2017), and institutional obstacles (such as a lack of integration across sectors) (Shill, Mavoa et al. 2012, Shill, Mavoa et al. 2012). Some

of these studies identified enablers, including the availability of evidence and the importance of intersectoral collaboration (e.g., between health and agriculture). However, previous studies have not been able to demonstrate how the various influences on policy interrelate and feed into decision-making. Moreover, without strong theoretical grounding, the explanatory power and the degree to which the insights from many previous studies can be transferred to other contexts is not clear (Breton and De Leeuw 2011, Cairney 2012, John 2012).

Recently, a small number of studies of obesity prevention policy processes *have* applied theories of the policy process as part of their analytical framework in an effort to boost their explanatory power and transferability (Clarke, Swinburn et al. 2016). Only one of these existing studies was conducted within the Australian context. In this paper, we sought to add to the evidence base by conducting a theoretically based study of obesity prevention policy processes within Victoria, Australia. The study was conducted in relation to a complex systems obesity prevention initiative called Healthy Together Victoria (HTV). HTV was established in 2011, using funding from the Australian Commonwealth Government through the now defunct National Partnership Agreement on Preventative Health (NPAPH). HTV involved a substantial investment[1] and a concomitant policy effort to implement a multi-level, multi-setting approach to obesity prevention. HTV was implemented at the Victorian state level as well as in 12 local community sites.

The large scale and diversity of the policy change effort that occurred during the implementation of HTV provided an opportunity to gather empirical evidence of policy development processes to inform future obesity prevention efforts. A central part of HTV implementation involved a "hard hitting" social marketing campaign called *LiveLighter*. This

[1] Whilst a total figure was not able to be determined from publically available sources, approximately AUD $50 million over four years (Department of Health. (2012). "National Partnership Agreement on Preventive Health: National Implementation plan 2009-2015." Retrieved 13 May, 2016.

initiative was based on the social marketing campaign that had previously been implemented in Western Australia, and featured 'toxic fat' and other graphic imagery to shock individuals and promote healthier eating behaviours. The campaign was delivered through paid advertising, social media and various other communication platforms in Victoria, Australia from 2015-2017. This paper aimed to examine the influences on the decision by the Victorian Government to fund the *LiveLighter* campaign, using multiple theories of the policy process to underpin the analysis.

Methods

Scope

The focus of the analysis relates to the initial decision to fund the *LiveLighter* initiative. Subsequent decisions with respect to implementation planning, evaluation and re-funding of the initiative were not the focus. However, it is recognised that policy processes are not necessarily conducted in a sequential manner, and stages of the classic 'policy cycle' may occur simultaneously (Howlett, Ramesh et al. 2009, Cairney 2012, John 2012). Hence, the investigation did not exclude data related to evaluation planning where it occurred prior to the decision to fund *LiveLighter*.

Theoretical framework

This research took an interpretivist perspective, which acknowledges that prior understandings and prejudices shape the interpretation, data collection, analysis and interpretation processes (Denzin and Lincoln 2011). Hence, it is important to note that each author has been an observer and/or participant in food policy deliberations in the context of

this study and that Investigator One drew on their own experience of working in HTV when undertaking the data collection and analysis.

Two political science theoretical frameworks informed the data collection and analysis. The selection of appropriate policy theory was based on a systematic review of the literature (Clarke, Swinburn et al. 2016). However, as asserted by a number of political science scholars, all theories are limited (Cairney and Heikkila 2014, Weible 2014), as they are - by definition - lenses designed to focus attention on some aspects whilst ignoring others (Weible 2014). In the context of obesity prevention, in which multifarious influences on policy decision–making have been demonstrated (Clarke, Swinburn et al. 2016, Cullerton, Donnet et al. 2016), we elected to apply *both* the Advocacy Coalition Framework (ACF) and the Multiple Streams Theory (MST). By drawing on the two frameworks it was hypothesised that a more comprehensive and nuanced understanding of obesity prevention policy process would be generated (Breton, Richard et al. 2008, Cairney 2009, Cairney 2013, Zahariadis 2014).

Sabatier's (2007) ACF suggests that public policy alterations are driven by coalitions of individual policy actors, including legislators, civil servants, journalists, academics, and not-for-profit organisations (Jenkins-Smith, Nohrstedt et al. 2014). Sabatier (2007) contends that coalitions form based on common beliefs, and they aim to disseminate information and influence policy in line with these beliefs. The framework also considers the role of long term parliamentary structures, as well as external system shocks that can give rise to changes in the formation, and/or the balance of power among coalitions (Sabatier 2007, Sabatier and Weible 2014). The ACF, which has been refined over time, suggests policy change can occur as a result of: 1) policy-oriented learning, whereby the beliefs of policy actors are altered through new experience and/or access to information; 2) exogenous shocks; or 3) negotiated

agreement between coalitions (Weible and Sabatier 2006, Jenkins-Smith, Nohrstedt et al. 2014, Sabatier and Weible 2014).

Kingdon's MST suggests that major policy change is the result of three 'streams' (problems, policies and politics) coming together (Kingdon 1995). The problem stream relates to issues that require action, as determined by numerous factors including availability of information, how issues are framed, current government conditions (e.g., budget deficit versus surplus) and focusing events (e.g., crises) (Kingdon 1995, Zahariadis 2014). The policy stream focuses on the solutions available to tackle identified problems. As Kingdon (1995) notes, solutions take time to develop, and evolve as numerous policy actors shape them. The third stream refers to the broader political factors that shape policy decisions, such as public opinion, pressure group advocacy, and administrative or legislative turnover (Kingdon 1995). In addition, the MST has the central constructs of 'policy entrepreneurs' who are key individuals who attempt to couple the three streams when 'windows of opportunity' align, in order to achieve policy change.

Data collection

Interviews were conducted with key participants of the *LiveLighter* policy process. The sampling of participants was purposive, combined with limited snowball recruitment (Patton 2002). Participants were selected based on their ability to provide detailed insight and first-hand experience into the policy processes related to *LiveLighter*. They included:

- Politicians (previous and current governments)
- Political advisors
- Civil servants (HTV and community level)
- Academics

- Other relevant stakeholders (key public health and other relevant NGO and private organisations)

A total of 11 interviews were conducted (nine in person and two by telephone). All but one of the potential interviewees who were invited to participate accepted. Interviews took place between December 2015 and November 2016. The duration of interviews ranged from 16 minutes to 75 minutes. All interviews were recorded and transcribed verbatim. Informants were given the opportunity to review transcripts for accuracy. All interviews were de-identified to ensure anonymity. Refer to Additional File 1 for the semi-structured interview schedule that was based on the systematic review of the literature (Clarke, Swinburn et al. 2016) and the political science frameworks underpinning the study.

Documents were obtained through Victorian Government Department of Health and Human Services (DHHS) informants, who were identified whilst Investigator One (B.C.) was on student placement, within the policy unit of the DHHS. This placement was for the duration of the overall study (2015-2017) and facilitated the identification and retrieval of documents and interviewee recruitment.

Documents analysed included internal policy briefing, reports, evidence summaries and other DHHS documents. Addition online searches were undertaken of the Victoria Hansard database and for relevant media reports using the Factiva database. Table 1 outlines the documents reviewed as part of this analysis.

Documents that were published, and therefore publically available, have been referenced accordingly. Where internal DHHS documents were used, these are referred to as DHHS

policy documentation, with the relevant year date listed. Whilst a large number of documents informed this analysis, there were some *LiveLighter* reports that could not be assessed as they were classified as 'Cabinet in Confidence'.

Table 1: Documents analysed in relation to the *LiveLighter* policy adoption process

Document type	**Description**	**Number of documents reviewed**
Internal policy briefings	Short summaries of what is known about a particular issue and are designed to facilitate policy-making.	8
Victorian Government Hansard reports	The official verbatim record of debates in the Victorian Parliament.	1
Other documents	These included planning documents, evaluation reports, communication reports, campaign reports and reports provided by stakeholders to serve as policy inputs.	20
Media articles	Media reports that made reference to the *LiveLighter* campaign in Victoria	40

Data analysis

Investigator One (B.C) conducted deductive thematic analysis of both interviews and documents in an iterative manner. This involved a two-stage structured analysis based on the

conceptual themes articulated through the ACF and MST (Breton, Richard et al. 2006, Breton, Richard et al. 2008). Stage one involved the systematic review of each of the sources of data, and coding relevant content to the constructs outlined within the ACF and/or MST (Ten-Have 2004, King and Horrocks 2010). The codebook with the theoretical constructs and respective definitions is provided in Additional File 2. This stage was also used to develop an overview of the *LiveLighter* policy process. This interpretation of the policy process was clarified through discussion with several key informants. The second stage involved clustering of the descriptive codes and interpreting meaning of clusters, as well as the relationships between elements (Ten-Have 2004). Both stages of analysis were supported by the use of NVivo10 qualitative analysis software. The dual data sources allowed triangulation to minimise bias and increase dependability of the results (Yin 2014).

The interrelationships between factors identified in stage two were documented and utilised to develop a casual-loop diagram (CLD) of the *LiveLighter* policy decision-making system. The process used was similar to the method outlined by Kim and Anderson (Kim and Andersen 2012), whereby the causal relationships (and the direction) between key constructs were documented in a causal map using Vensim™ software (Ventana Systems 2012).

Key informants are presented in the results using a general descriptor (e.g. Senior Policy Officer) to preserve their anonymity. The research was approved by the Human Ethics Advisory Group of the Faculty of Health at Deakin University, Australia (project number HEAG-H 106_2015).

Results

LiveLighter policy process overview

A chronology of activities undertaken in order for the *LiveLighter* policy to be adopted is summarised in Table 2. One particularly pertinent national policy change that was pivotal in the initiation of the *LiveLighter* policy process was the establishment of the NPAPH in 2008 (Department of Health 2012). This agreement meant the state government of Victoria received substantial (up to AUD 53 million) resources for chronic disease prevention activities (for which obesity was one of four priority areas), including a requirement to deliver social marketing activities as part of the agreement (Department of Health 2012, Department of Health 2012).

Table 2: LiveLighter Policy process chronology

Date	Activity
2008	Establishment of the NPAPH.
May 2010	*Measure Up* agreement was signed between the Victorian government and the Commonwealth Government. The agreement specified the implementation of the national *Measure Up* social marketing campaign in Victoria from 2010-2013.
Mid 2010	Planning for Healthy Together Victoria began.
June 2011	*Kids Go For Your Life (KGFYL)* policy lapsed (KGFYL was a program delivered through primary schools and early childhood services to support healthy eating and physical activity through an award program that had been in operation from 2009).
September 2011	Release of the Victorian Public Health and Wellbeing Plan
January 2012	Healthy Eating and Physical Activity Consortia was established (for a number of

	reasons including to guide the development of Victoria's social marketing approach as part of the NPAPH). The Western Australia *LiveLighter* model was one approach looked at by the Consortia
April 2012	HTV sites were established in 12 communities
Early 2013	An Interdepartmental Working Group was established to help develop and plan for the implementation of the social marketing campaign.
2012-2013	Internal government consultations (with various branches within the Department including Mental Health) and external consultations with relevant sector stakeholders (disorders, mental health and women's health groups) undertaken by DHHS staff.
October 2013	Ministerial Advisory Panel (MAP) established and convened.
December 2013	The Cancer Council Victoria, on behalf of the MAP, delivers a report to the DHHS, recommending the government adopt the LiveLighter social marketing campaign.
April 2014	Health and Human Services Committee of Cabinet meets and approves *LiveLighter* social marketing campaign proposal.
May 2014	Minister signs off budget and ***approves*** *LiveLighter* campaign implementation.
July 2014	Another stakeholder roundtable convened by Women's Health Victoria on behalf of the government is held. This included stakeholders, such as, eating disorders researchers and organisations and mental health and women's health groups. The purpose was to review the LiveLighter implementation proposals and provide recommendations to ensure a successful launch of the campaign.
August 2014	*LiveLighter* Steering Committee established to guide implementation and first external meeting held
August 2014	*LiveLighter* campaign launched by Minister for Health. First "burst" of television ads aired over 6 week period
29 November	State Government election held. Resulted in change of government to Labor, led

2014	by Daniel Andrews
March- April 2015	*LiveLighter* "burst" two of television ads aired over 6 week period.
October – November 2015	*LiveLighter* "burst" three of television ads aired.
June 2017	The *LiveLighter* campaign funding ceased.

In 2010, the State Government of Victoria entered an agreement with the Commonwealth Government of Australia to implement the *Measure Up Victoria* campaign as part of the NPAPH. This agreement outlined a requirement to implement social marketing activities from July 2010 to 2013 with AUD 4.4 million to be used for both state-wide strategies to support the national social marketing campaign (the *Measure Up* campaign), as well as community level supporting activities (DHHS policy documentation 2009, 2010). Whilst the *Measure Up* implementation agreement was in place prior to the start of HTV (from early 2012), documents indicate that as early as 2010 there was the intent to incorporate the state's specific social marketing program into the HTV initiative.

In 2011, the Victorian KGFYL program (that provided funding to implement health promoting activities in Victorian schools and early years setting to increase healthy eating and physical activity behaviours) was scheduled to cease and, as a result, DHHS staff identified a political risk relating to a perceived gap in government action on healthy eating and physical activity (DHHS policy documentation and interviews). Staff from within the DHHS therefore sought to utilise some of the resources allocated by the Commonwealth government for social marketing to build a comprehensive social marketing that was more "strategic and comprehensive" than the *Measure Up* campaign in order to support HTV implementation (DHHS policy documentation 2009 and DHHS interview).

At that time, planning for the implementation of HTV was also underway. In order to effectively deliver the proposed 'more comprehensive' social marketing campaign, the DHHS sought expertise via the establishment of a Healthy Eating and Physical Activity Social Marketing Consortia (referred to herein as The Consortia) in 2012. This comprised senior representatives from Cancer Council Victoria (CCV), Diabetes Australia, National Heart Foundation, VicHealth, as well as numerous academic experts in the areas of obesity, physical activity and healthy eating (DHHS policy documentation 2011).

The Department then commissioned CCV, on behalf of The Consortia, to develop a three-year social marketing plan. The first report delivered by the CCV to the DHHS in 2013 recommended that a social marketing campaign be delivered as part of the broader HTV initiative, without recommendations on the specifics of the campaign.

In 2013, an internal Departmental Working Group was also established to plan for a successful campaign launch (DHHS policy documentation 2014). This working group had representation from the Director of Mental Health, Director of Corporate Communications, Senior Public Health Advisor, Prevention and Population Health Branch (PPHB) and Director of Prevention and Population Health Branch (Chair). Through feedback from this working group, as well as from a number of external stakeholders including mental health, body image, eating disorder and women's health groups, concerns were raised in relation to the nature of the *LiveLighter* social marketing campaign, particularly regarding the potential for the campaign to exacerbate mental health or body image issues. As a result, the Minister for Health convened a Ministerial Advisory Panel (MAP) on 16 October 2013 as a time-limited body to provide advice on the suitability of the *LiveLighter* campaign for Victoria. The MAP

had specific tasks to provide expert advice on public health system readiness and supports required for implementation of *LiveLighter*, the necessary modifications of the WA campaign for the Victorian context, campaign impact evaluation and monitoring, and issues management. The MAP endorsed that the Department model the Victorian approach on the WA *LiveLighter* campaign (DHHS policy documentation 2013).

In addition

In 2014, the Minister for Health then also requested the *LiveLighter* campaign be reviewed by the Health and Human Services Committee of Cabinet (DHHS policy documentation 2011 and interviewee-DHHS Manager 1). This committee considered and discussed the opportunities, challenges and necessary mitigation strategies associated with the implementation of a campaign of this nature in Victoria. In April 2014, this committee endorsed *LiveLighter* implementation over a three-year period (DHHS policy documentation 2014).

In April 2014, this committee's recommendations were provided to the Minister for Health, who then approved $9.6M to implement *LiveLighter* over three years (2013 to 2015). The funding approved was for the CCV, in partnership with the Heart Foundation, to deliver the implementation of the *LiveLighter* social marketing campaign (DHHS policy documentation 2014).

In July 2014, even after the Minister had endorsed the LiveLighter policy, Women's Health Victoria, on behalf of government, convened another stakeholder roundtable where further implementation and evaluation planning considerations were discussed and mechanisms to minimise the potential for unintended consequences were incorporated into the policy design.

The approved *LiveLighter* policy was based on a similar campaign implemented in Western Australian (WA). The activities funded as part of *LiveLighter* included paid advertising (TV, radio and print), public relations, social media, the development of a supportive website, stakeholder engagement and other policy activities, such as the development of research and evaluation mechanisms to monitor campaign success.

The campaign was launched by the Minister for Health on 17 August 2014 (LiveLighter 2016) with a number of targeted stakeholder sessions and communications undertaken.

Advocacy Coalition Framework analysis

Relatively stable parameters

Relatively stable political system parameters influence policy processes through: structuring the nature of policy problems; establishing the rules and procedures for policy change; constraining resources available for policy actors; and by framing the sociocultural context that influences policy making (Weible and Sabatier 2006). In regards to the *LiveLighter* policy, there was general widespread recognition that obesity was an important health issue within the Victorian context.

> *"I think there's always broad acceptance about tackling obesity, so the end objective was accepted"*
>
> *(Minister 1)*

> *"...obesity is a major issue and major health crisis around obesity. I think government is needed to be seen to be doing something.*
>
> *(Stakeholder 3)*

Through the NPAPH, there was a belief that a social marketing campaign was a critical element of efforts to improve population diets and address obesity.

However, through the NPAPH, the decision-making autonomy regarding the nature and *type* of social marketing campaign was relinquished to the State government. This meant that the dominant sociocultural landscape in Victoria was important in the selection of this specific policy.

Policy subsystem

Sabatier defines policy subsystems by territorial boundaries, the issue or topic, and by the participants of the policy process (including those within government, interest groups, media and content experts) (Weible and Sabatier 2006).

The *LiveLighter* policy subsystem was primarily located within the Victorian context although there was input from WA Department of Health colleagues who had implemented the *LiveLighter* campaign in that jurisdiction.

With the Minister for Health being the primary member of cabinet responsible for the policy area, the coordination of the policy development and implementation planning of the *LiveLighter* campaign was primarily co-ordinated within the DHHS. This meant there was a somewhat more streamlined decision-making process compared with policies that required formal sign-off from multiple government departments. In addition, *LiveLighter*, as a non-legislative tool, did not require approval through parliament. This meant an arguably lower level of consensus was required for policy adoption as compared to that required for legislative or regulatory approaches. However, there remained the need to reach agreement

across the various branches within the DHHS in order for the policy to be accepted by senior government staff.

> *"I mean, we had to have enough of an internal consensus that the leadership and the department would sign off, let alone the politicians, and we didn't want the contrary advice going to the Minister for Mental Health, the Minister for Health."*
>
> *(DHHS Director 1)*

Coalition opportunity structures

The structure set up for the policy development by the DHHS meant that many groups and individuals had the opportunity to provide input into the *LiveLighter* policy formulation. Some such input, particularly that from the Mental Health DHHS policy unit, raised concerns in regard to the 'toxic fat' nature of the campaign, the implications of which are further discussed later in the chapter. The establishment of The Consortia, the MAP and the Inter-Departmental Working Group meant the degree of openness of policy decision-making was increased. This openness enabled individuals and groups outside of the immediate policy system to engage in the policy development process more so than what would have occurred otherwise. Furthermore, a roundtable hosted by Women's Health in 2014, at the invitation of the Minister, created yet another opportunity for stakeholders to contribute to the *LiveLighter* policy development. One interviewee noted that this was an unusual degree of openness:

> *"The health minister contacted us and asked us what we thought about it, the ads, before it was approved. So that was very unusual coming from the Health Minister at that time. So we thought, 'Great!"*
>
> *(Stakeholder 3)*

Interviewees identified that it was a deliberate decision to increase the openness of the policy process as a strategy to reduce opposition and increase support for the policy. They reflected

that it was in response to pressure from other government colleagues and the Minister, as well as policy makers' experience working in the policy area.

Nevertheless, it is noted that the policy was ultimately reviewed by the Health and Human Services Committee of Cabinet, for which the discussions that inform the final decision-making remain classified as 'cabinet in confidence' (Lupton 2012). Hence, despite the openness through much of the process, there remained a degree of opacity of the final decision pertaining to *LiveLighter*.

External events

There were two external events that impacted the *LiveLighter* policy subsystem. These were the NPAPH and the release of the Victorian Public Health and Wellbeing Plan (VPHWP). Both were viewed as enablers that elevated obesity prevention on the Victorian agenda.

> *"…thank goodness there was a whole policy mandate to protect this because without it we wouldn't have a leg to stand on. i.e. the National Partnership Agreement, State Public Health Wellbeing Plan, agreed implementation plan [for the NPAPH between the Commonwealth and the State governments]"*
>
> *(DHHS Senior Manager 1)*

> *"…the next thing which opened up the opportunity for LiveLighter…was the release in 2012 of the VPHWP. Now really, given the platform that that created around the need for reducing obesity rates and creating healthy improving the lifestyle of Victorians, it really was the lever that underpinned the investment in Healthy Together Victoria but it also initiated the need and context for a much broader social marketing investment…"*
>
> *(Stakeholder 1)*

With the specific requirement to implement a social marketing campaign as part of the NPAPH, as well as specific NPAPH resources allocated for these exact purposes, policy makers were supportive of the expenditure being allocated to the initiative.

> *"It was obviously an easier decision to make because it was Commonwealth money not their own"*
>
> *(Stakeholder 1)*

Advocacy Coalitions

The increased involvement of policy actors facilitated the formation of two coalitions seeking to influence the policy: a group supportive of the adoption of the *LiveLighter* policy which included health promotion organisations, DHHS staff members and WA researchers and government representatives who had been involved in the WA implementation (this group is referred to herein as Coalition A); and a second opposing group who believed the *LiveLighter* social marketing campaign may lead to increased stigma and negative health outcomes for obese and overweight individuals (Coalition B). This group also suggested the campaign may negatively impact on children, and increase the risk of eating disorders in the general community.

Beliefs

As the ACF outlines, coalitions form on the basis of 'policy beliefs' regarding the appropriateness and effectiveness of policy interventions. Members of Coalition A shared the belief that the LiveLighter shock tactic style campaign was required to stimulate community action, as evidenced by the following quote from a central DHHS policy maker:

> *"I decided to do it because I thought we needed something to just shock us all [the broader community] into action"*
>
> *(DHHS Senior Manager 1)*

However, whilst some LiveLighter coalition members acknowledged that the policy was at odds with their core beliefs, they were willing to endorse the policy in order to meet the overall policy goal of reducing obesity:

> *"Even I ethically struggled with it. Is this what I believe in? I really struggled with it. Do I really want something that shows visceral fat? Is it going to shame people? I don't know... We needed something that's just going to shock everybody… So I thought I've got to let go of my values here"*
>
> *(DHHS Senior Manager 1)*

In contrast, the opposing Coalition B believed the *LiveLighter* policy may increase body image issues and potentially impact on mental health within the community.

> *"So we looked at it…and basically raised a few issues of concern around issues for women, in particular, the nature of the ad. We saw the ad had some real issues and problems around associating healthy living with body image. It is a very direct link demonising the concept of toxic fats and so we then had to work towards trying to not reinforce stereotypes around body image look over weight with health..."*
>
> *(Stakeholder 3)*

There was, however, alignment in beliefs of both coalitions regarding the recognition of the need for government to act in the area of healthy eating, as evidenced by one of the DHHS policy managers below.

> *"…we are all just talking about eating behaviours... Our goals are exactly the same: to encourage healthy eating and health and physical activity. The fact that we're coming from two different angles on it ... this means that it's good to bring them together because we do have the same goals."*
>
> *(DHHS Manager 1)*

Resources

In order to navigate complex policy processes and progress preferred solutions, coalitions utilise resources they have available (Sabatier and Weible 2014). These resources can be in the form of: 1) legal authority to make policy decisions; 2) public opinion; 3) information (i.e., evidence of the problem or the effectiveness of the proposed solution); 4) mobilisation of troops; 5) financial resources; and 6) skilful leadership. The following section illustrates which forms of resources were utilised by coalitions in this case.

Firstly, Coalition A used information and evidence of effectiveness to try to push for the *LiveLighter* policy to be adopted. By strategically drawing on the evidence from other social marketing approaches for intractable public health issues, brokers were able to persuade decision-makers:

> *"I think the minister was convinced by the evidence, the public health kind of evidence supporting a campaign of that nature."*
>
> *(Political advisor 1)*

Brokers within the coalition also utilised their proximity to decision-makers to influence decision-making:

> *"…there was a lot of pressure [to implement the LiveLighter policy] from some of the public health groups like Cancer Council and the Heart Foundation, "Where are the ads?", "where are these ads?" [so] we wanted to get that [the policy approval] done and dusted quickly."*
>
> *(Political advisor 1)*

Coalition B also used access to decision-makers to advance their argument. This opposing coalition also used the media, with criticisms of the *LiveLighter* campaign evident in highly circulated print media:

> *"Melbourne weight management specialist Rick Kausman said while LiveLighter could raise awareness about the dangers of obesity, research had shown shaming people for poor health was often ineffective at helping them become healthier. Dr Kausman said he had strongly advised Health Minister against adopting the campaign during a meeting with him last year. He said its message that 'fat is bad' could spark poor health habits in children that could stick with them for life. BodyMatters Australasia psychologist Sarah McMahon said the graphic advertisements could exacerbate the fear of gaining weight held by eating disorder sufferers, hindering any chance of recovery. Butterfly Foundation chief executive Christine Morgan said the ads could even trigger eating disorders by portraying fat as something to be 'ashamed of'".*
>
> *(Herald Sun, 20 August 2014)*

Policy change mechanisms

The ACF lens suggests that policy change can occur through 'negotiated agreement', 'policy oriented learning' or through 'exogenous shocks that influence policy subsystems. As evidenced by the above analysis, all three were present in the case of *LiveLighter*.

External shocks

An external shock to the system was seen through the NPAPH that provided the resources and mandate for an obesity prevention social marketing campaign in Victoria. In addition, the

VPHWP, that also prioritised healthy eating and physical activity on the government agenda, was an enabler for policy advocates seeking the adoption of the *LiveLighter* campaign.

Policy oriented learning

Policy oriented learning was evident from the use, by policy makers and public health advocates, of evidence of the effectiveness of social marketing campaigns in relation to other public health problems such as tobacco and skin cancer. With *LiveLighter* being implemented in WA at the same time as the Victorian policy development process, DHHS policy brokers also utilised newly generated evaluation data to strengthen policy proposals. This evidence was important for minimising the potential political risks of *LiveLighter*. In particular, policy makers emphasised that the preliminary evaluation data from WA, that demonstrated that the WA implementation was not linked to an increase in negative stereotypes about overweight individuals (DHHS policy documentation 2014), was important. However, Coalition B members did identify areas where the evaluation needed to be strengthened before they would support - or at least not actively oppose - the initiative. The Victorian *LiveLighter* campaign proposals therefore built in additional measures of potential unintended consequences into the evaluation planning to ensure that decision-makers would accept the policy.

> *"I think they had genuine concerns…so we really did build in a lot more measures in terms of looking at unintended consequences."*
>
> *(Stakeholder 6)*

Negotiated agreement

These revisions to policy implementation and evaluation plans provided the critical reductions in the perceived risks required for the policy to be supported by decision-makers. The extensive work undertaken by the DHHS staff and other coalition members with those opposing the policy helped to reduce disagreement and political risk.

"I think part of [the reason why the policy was adopted] was the process of consultation itself, actually. Often people then feel involved, and they have a deeper understanding of what's going on, what's trying to be achieved, any potential negatives and how you might manage those, and the obvious upsides. I think [the facilitating factor] was doing that [the consultations]. Not springing these things on people. You are actually better to talk stuff through"

(Minister 1)

"I think there was real positive in talking to the body image and eating disorder people, because I'm sure that helped inform their ideas and of course it works the other round too as well. That was a very positive thing and it was appreciated I think very much."

(Stakeholder 7)

"There were sensitivities involved that we wanted to ensure were managed. That all of those groups had input into the implementation and really understood what the intent of the social marketing, what those ads were all about. The intent was to convey a strong public health message, you know, in a way of shock tactics. We didn't want them to just wake up one day and start seeing them on TV and, "God, where did this come from."

(Political Advisor 1)

The appointment of the MAP was an important mechanism for consensus building towards support of *LiveLighter*. The legitimacy of this committee, with respected experts involved, helped to allay concerns and ultimately increase the likelihood of decision-making approval.

"The academic support that we had for example Melanie Wakefield … who has been published in the Lancet you know she has got a credible voice from a research behaviour change kind of perspective. You know, heads of all those organisations…all those key people who came to the Ministerial Advisory Panel are leaders and influencers, and having their support was critical. Even having the support I guess of the, the Australian Medical Association, so we had some people outside of the standard Public Health sector in that, you know, we were quite strategic about who we were involving at very early stages"

(DHHS Manager 1)

"The instrument used to track potential unintended consequences (e.g. body satisfaction in adolescents, maladaptive weight loss approaches or stereotypes about overweight people) was based on measures developed by national and international experts in these areas, including Professor Susan Paxton."

(DHHS policy documentation 2014)

Multiple Streams Theory Analysis

Problem stream

The problem stream of the MST framework identifies how problem definitions and therefore solution appropriateness are impacted by the values held by individuals (Zahariadis 2014). As described above within the ACF analysis, the problem of obesity was widely recognised with decision makers given that the NPAPH was in place. There were also recognition specifically in the Victorian context through the VPHWP (DHHS policy documentation 2013). However, the differing views regarding the causes of obesity were important for how the problem was constructed. For example, Coalition B members emphasised the environmental and social

drivers of obesity and, therefore, argued that an initiative, such as *LiveLighter*, focusing on individual behaviour change was not appropriate.

> *"…obesity is a growing concern and how we manage it whether it's around a campaign or whether it's initiatives like the HTV initiative…We know the huge issues around the impacts of poverty, affordability of healthy food. We know where there's attempts of fast-food outlets….So there are social determinants that change people's behaviour. So we can play around with shock, shock, shock, terrible…But without addressing some of those other determinants, I don't know that we're actually going to quite get there."*
>
> *(Stakeholder 3)*

The MST also emphasises that feedback from previous policy implementation is important for problem recognition. This is because the perceived intractability of policy issues can negatively influence their place on the political agenda (i.e., politicians want to be seen to be effective and therefore may avoid policy issues that are difficult to achieve outcomes) (Liu, Lindquist et al. 2010). As noted above, the successful implementation of social marketing campaigns for other complex public health issues such as tobacco, skin cancer and road safety was conducive in establishing the case for this type of the policy response to tackle obesity.

Policy stream

According to Kingdon (1995), the policy stream of the MST relates to the potential solutions available to address identified problems. Prospective policy solutions are assessed for their appropriateness against dominant societal and stakeholder values and whether they are feasible given resource constraints. Alignment to issue framing is also central to the policy stream of Kingdon's MST.

When DHHS policy makers began looking for viable policy options for the NPAPH implementation, they became aware of the emerging evidence from the implementation of *LiveLighter* in WA. Government staff from the Department of Health in WA also briefed Victorian policy makers regarding the process and preliminary impact evaluations from the WA LiveLighter campaign. This evidence was incorporated into the policy proposal documents.

> *"The campaign was associated with increases in proximal measures (such as increased awareness of the harms to health of being overweight), and some evidence of more distal impacts (such as increased intentions to engage in recommended physical activity levels). There is no evidence of unintended consequences among both adults and adolescents when evaluating campaign effects on issues such as body image (including negative stereotypes about overweight individuals), excessive exercise or maladaptive dietary behaviours."*
>
> *(DHHS policy documentation 2013)*

This 'spillover' effect, as it is described by Kingdon (1995, p. 200), was frequently cited as an important facilitator of policy change.

> *"We've seen the WA material, and we're able to adapt that….There was good research behind it to suggest that it may well be effective."*
>
> *(Minister 1)*

As noted earlier, Coalition B members and public health experts widely acknowledged obesity having a complex aetiology, requiring multiple and synergistic policy responses. With

LiveLighter's individual behaviour change focus, it was identified that the policy may be contested as not sufficient for tackling obesity and hence advocates framed the campaign as one that contributed to, and would be strengthened by the broader complex, systems based approach of HTV.

> *"Social marketing is an effective public health intervention when used as part of a comprehensive mix of health promotion interventions. However social marketing alone is not the panacea. The proposed approach will employ social marketing practices to compliment other public health practices, including policy development, evaluation and legislation, to create a systems approach to the delivery of an integrated suite of activities supporting healthy eating and physical activity lifestyle change across Victoria."*
>
> *(DHHS policy documentation 2011)*

> *"Historically social marketing was seen as an individual focused intervention and we didn't want it to be a pure individual focused effort. So framing it as a call to action to the individual [but] there are other elements of the campaign strategy that talk about environmental change, policy change, policy levers you know networks, partnerships, relationships."*
>
> *(DHHS Manager 1)*

The *LiveLighter* implementation, within the context of HTV, also helped build the case regarding the likely feasibility, given its surrounding supporting infrastructure.

> *"...there was an enormous investment in this Healthy Together community, a lot of it is untested but was all around creating that systems change at the local level. Absolute recognition by everyone around the table that if we are going to be making this*

investment at the local level, we need the broader social marketing effort to help motivate change and without that it was always going to be difficult to see real change because people don't understand or appreciate the need for change. The LiveLighter campaign was essential to help kick-start and motivate change at the local level."

(Stakeholder 1)

Kingdon's MST also considers the role of 'softening up' (1995, p. 123), which is the process from the time a policy idea is first floated through to the final policy adoption, in which iterative changes are made. The numerous briefs and reports that were provided to senior government staff and the Minister of Health before approval was finally granted provide evidence of this process. Each iteration incorporated further evidence about the likely effectiveness of the *LiveLighter* intervention, emerging data on identified potential unintended consequences, as well as evidence of support from stakeholder groups to demonstrate reduced risks and policy feasibility.

Finally, the *LiveLighter* policy, with its focus on individual responsibility, also aligned with the ideology of the Liberal government in power at the time of policy development.

"I think government does have a responsibility to do some health prevention, and I thought this was a very practical, good way to get that message across without being the big stick approach"

(Parliamentary Secretary 1)

"…the little practical suggestions, which I think was also helpful, showing it to cabinet sub-committee. They could see that this was not driven by some silly ideology, but it was actually about practical aspects that people could actually undertake."

(Minister 1)

Politics Stream

As eluded to earlier in the ACF analysis, the potential negative political fallout from the *LiveLighter* campaign was a strong consideration during decision making processes. Many political and Department staff were highly conscious of potential political risks:

> *"…we were aware that they [the LiveLighter ads] are quite controversial. For example, we know that the WA ads, there were some criticism particularly from body image groups. We wanted to make sure that those ads weren't going to be met with that level of criticism."*
>
> *(Political advisor 1)*

The MST illuminated that the Minister for Health had to be willing to stand up for the policy in the face of opposition and even though this may have impacted them politically.

> *"He [The Minister for Health] had to discuss a lot of stuff offline, and constantly wanted briefings with those Ministers [Minister for Health; Minister for Women's Affairs] and I think he made the decision, though, that yes, everyone may not agree with it but I've done the right thing, and we've done the right thing and it had to be his decision…I remember that moment where he said, "Yep, okay, let's go for it." And you know what? [It was] incredibly bold and brave because …it was not far out of the election that he... it was only about six or nine months out, so it could have actually damaged him"*
>
> *(DHHS Senior Manager 1)*

> *"…I had a consultation with some of my parliamentary colleagues, cabinet colleagues on that [women's health and body image issues]. Because I was just very conscious that the last thing you wanted was this program to go forward and then some real*

push back to occur…I think I went and saw the Chief of Staff, as well as Premiers. I spoke to the Premier ... Some of this is about spotting things and knowing where you're going to run into trouble and heading it off at the pass in a very forward thinking way. Where are we here? Where do we want to go? What are the roadblocks? What would be in their mind? It's actually just projecting out about what actually is in their head."

(Minister 1)

Policy entrepreneurs seizing a window of opportunity

Similar to the notion of policy broker in the ACF, Kingdon's (1995) MST suggests that the presence of influential policy entrepreneurs who couple the three streams is critical for policy change. There was evidence of influential individuals who were able to align the policy to the problem and to navigate the political constraints to facilitate policy change:

"…I can't underestimate the importance of champions within government so I mean I guess that the reason why LiveLighter was able to get up eventually… was because of the strong champions within government pushing the Health Minister and the Minister's office for this type of investment."

(Stakeholder 1)

"...we had the Minister championing it, so it [the championing] was really, really important."

(DHHS Senior Manager 1)

"I think also [a policy entrepreneur identified] did do some good work with some of those people [opposing coalition members]….I think the sort of the way of working with some of that sector, and sort of ensuring that a lot of the below the line

messaging was, you know, not about victim blaming, etcetera, but it was about unhealthy eating, you know, whether that's under-nutrition or over-nutrition…I think that we worked that quite well."

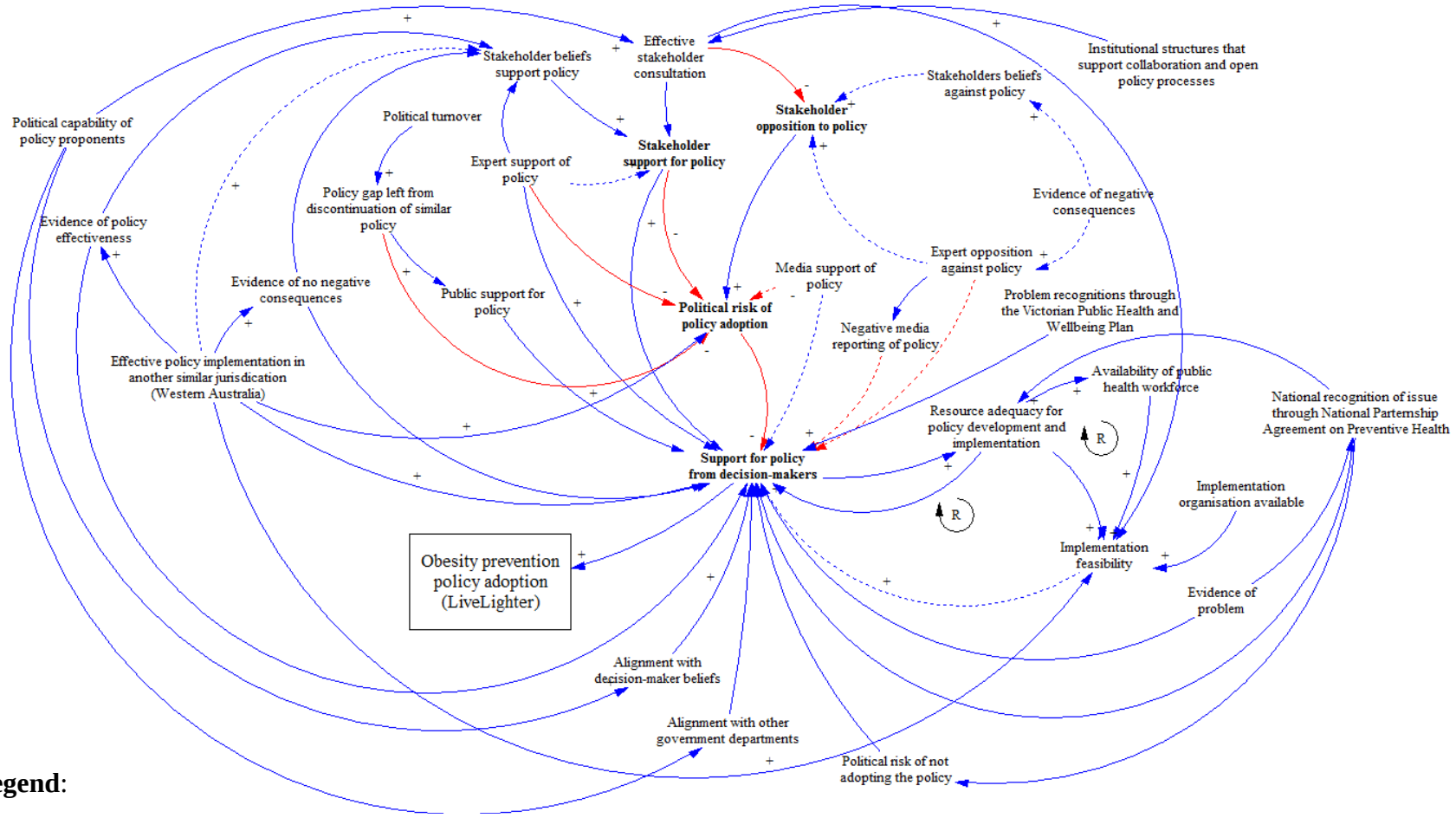
(DHHS Manager 1)

As highlighted earlier, these entrepreneurs (termed 'brokers' within the ACF analysis) used various tactics including their connections to decision-makers, drawing on evidence, and reframing solutions to sell the approach to those with power to adopt the policy.

Causal Loop Diagram (CLD)

Figure 1 one presents a CLD of the *LiveLighter* policy system that illustrates the interconnections between policy determinants and the highly complex nature of this policy decision-making process. The *LiveLighter* CLD diagram highlights a number of factors that directly increased (as demonstrated by the blue arrows) the acceptability of social marketing campaign with decision-makers. These included external factors such as the NPAPH and the associated budget availability, as well as evidence of the program and implementation evidence generated from similar 'shock tactic' public health campaigns and the WA *LiveLighter* campaign. The CLD also visually elucidates the role that the two coalitions as well as the central policy brokers played in influencing decision-makers, through the use of evidence, framing and the media. The CLD also highlights the central role that the perceived political risk associated with the campaign had in reducing policy maker support. The perceived political risks were increased by efforts of a coalition of groups who believed that the campaign would have negative consequences for certain populations. The diagram demonstrates that the preliminary evidence from the WA implementation, as well as support from a coalition of public health groups was important in reducing this risk and increasing the acceptability of *LiveLighter* with decision-makers.

Figure 1: The LiveLighter Policy System



Legend:

+ Triangulated (both data and methods) evidence supports an association between factors, whereby an increase in factor A results in an increase in factor B

+ Some data to indicate that an increase in factor A results in an increase in factor B, however triangulation was not able to be achieved

- Triangulated (both data and methods) evidence supports an association between factors, whereby an increase in factor A results in an decrease in factor B

- Some data to indicate that an increase in factor A results in an increase in factor B, however triangulation was not able to be achieved

Discussion

This investigation of policy processes in the Victorian Government revealed numerous and interrelating factors that influenced policy makers in their decision to fund the *LiveLighter* social marketing campaign. Enablers for the increased support from decision-makers included external factors such as the NPAPH and the VPHWP, as well as the evidence of the problem and intervention effectiveness. However, with perceived potential negative consequences associated with the initiative, there was significant resistance to the policy from a number of stakeholders. This required substantial political capacity of central policy makers to facilitate negotiation processes to reduce opposition and attain a level of agreement required for decision-makers to approve the policy.

The analysis was underpinned by the use of two analytical frameworks (the ACF and the MST). The complex nature of the policy processes, and the multiple influences on decision makers, demonstrate the utility of using both frameworks to elucidate a comprehensive understanding of policy change processes. As such, the findings support calls for the utilisation of policy theory within this obesity prevention policy context to better uncover specific policy enablers and mechanisms for change (Cullerton, Donnet et al. 2015, Clarke, Swinburn et al. 2016, Cullerton, Donnet et al. 2016).

Political system characteristics

The ACF illuminated a number of policy system characteristics that were important factors impacting on LiveLighter policy decision-making processes. In particular, the openness of decision-making processes, due to the creation of structures such as the Interdepartmental Working Group and the MAP, meant there was a greater opportunity for input from external

stakeholders. As a result, external policy actors were able to more directly influence the policy process. This finding is consistent with one theoretically-based study of obesity prevention policy that employed the less comprehensive Institutional Theory (Gomez 2015). This finding suggests that the ACF *can* be efficacious for highlighting political systems factors despite this being a common early criticism of the framework (John 2012).

Group influences

By employing the ACF, this study also adds to existing evidence regarding the influence of groups and networks on obesity prevention policy (Houlihan and Green 2006, Gladwin, Church et al. 2008, Dodson, Fleming et al. 2009, Craig, Felix et al. 2010, Gomez 2015). This study demonstrates that the coalition supporting the *LiveLighter* policy was small in size, but given the coalition's integration into decision-making structures, the group was able to exert sufficient influence on decision-makers. The finding is in contrast to one of the previous obesity prevention studies to employ the ACF (Freudenberg and Atkinson 2015) that found that it was the substantial size of coalitions that meant sufficient pressure was exerted to influence policy. It is, however, consistent with other obesity prevention policy studies that have drawn on Institutional theories and the MST to find group and network integration into government structures to be particularly important for policy change (Khayesi and Amekudzi 2011, Reid and Thornburn 2011, Gomez 2015).

Beliefs

Through the use of the ACF, the study also identified how the beliefs held by coalition members influenced the consideration of policy options. This evidence supports Sabatier's notion that coalition members will show consensus on issues pertaining to what he terms the

'policy core' (in this case that obesity prevention policy implementation is necessary) but less so in respect to secondary policy beliefs (in this case that a 'toxic fat' social marketing campaign is an appropriate policy response). Policy actors within the *LiveLighter* policy system were willing to give up secondary beliefs before acknowledging any perceived weaknesses in the policy, in order to progress policy (Jenkins-Smith, Nohrstedt et al. 2014). This provides evidence to support the third 'coalition hypothesis' of the ACF that contends that policy actors will give up secondary aspects of their belief system before acknowledging weaknesses in the policy core (Jenkins-Smith, Nohrstedt et al. 2014). The findings also support Sabatier's assertion that the propensity for policy-oriented learning increases when there are forums that coerce professionals from different coalitions to participate (Jenkins-Smith, Nohrstedt et al. 2014).

Unlike the findings from the only other known ACF study on nutrition policy to explore in detail the role of coalitions (Freudenberg and Atkinson 2015), in this study the opposing coalition was made up of networks of social and health groups. This finding is interesting, given that studies from other policy areas have identified economic interests, such as those that motive the food industry, as a common reason for coalitions structuring and policy resistance (Meijerink 2005, Nohrstedt 2010, McDougall 2016). Therefore, policy makers and advocates need to broadly consider the potential for opposition from diverse groups.

Framing

Despite the utility of the ACF in this context, the framework fell short in explaining how the characteristics of the policy itself influenced policy makers' decisions. In contrast, the MST was particularly useful in this sense, helping to explore how policy entrepreneurs adapted the framing of the *LiveLighter* policy so that the intervention aligned with the political context

and the dominant problem construction (i.e., obesity as an issue of personal responsibility). This learning is consistent with previous studies of obesity prevention policy process (Gladwin, Church et al. 2008, Dodson, Fleming et al. 2009, Reid and Thornburn 2011, Mosier 2013, Milton and Grix 2015, Quinn, Johnson et al. 2015).

Aligning the framing with 'policy' beliefs that obesity is a complex issue, and highlighting that the *LiveLighter* policy was part of the broader 'systems based' HTV effort was another tactic policy brokers used to minimise resistance from public health groups. Only two of the identified theoretically-based studies of obesity prevention policy process (both underpinned by the MST) identified this tactic as an enabler of policy change (Gladwin, Church et al. 2008, Milton and Grix 2015). However, a small number of additional obesity preventions studies found similar results, identifying that when policy entrepreneurs linked policy solutions to broader policy imperatives or 'ideas in good currency' (Gladwin, Church et al. 2008, p. 335) policy adoption was more likely to occur (Reid and Thornburn 2011, McBeth, Clemons et al. 2013, Mosier 2013).

Policy brokers

Findings from this study emphasise the importance of the work undertaken by policy brokers to overcome the resistance of opposing coalitions, which is consistent with a number of obesity prevention policy studies underpinned by the MST and ACF (Houlihan and Green 2006, Craig, Felix et al. 2010, Phillpots 2012, Ulmer, Rathert et al. 2012, Milton and Grix 2015, Quinn, Johnson et al. 2015). However, only very few of these studies explored what tactics were required to ensure the policy would be adopted. These included framing (outlined above), and stakeholder negotiation processes that resulted in a lessoning of the opposition to initiatives. For example, Phillpots (2012) study, using the ACF, demonstrated that policy

advocates played a role in the structuring of coalitions across government to successfully secure policy change.

Evidence

Like other theoretical studies of obesity prevention policy (Gladwin, Church et al. 2008, Thow, Annan et al. 2014, Olstad, Campbell et al. 2015), evidence of the problem was emphasised throughout the *LiveLighter* policy processes. However, unlike the findings from some a-theoretical studies (Shill, Mavoa et al. 2012, Shill, Mavoa et al. 2012, Crammond, Van et al. 2013), evidence of effectiveness was not necessarily a central driver of policy adoption. Preliminary evidence from the WA *LiveLighter* evaluation was useful for demonstrating technical feasibility (i.e. the policy is implementable given the resources constraints). This learning is consistent with existing theoretically-based studies on implementing obesity prevention policy (Houlihan and Green 2006, Gladwin, Church et al. 2008, Dodson, Fleming et al. 2009, Craig, Felix et al. 2010, Khayesi and Amekudzi 2011). WA evaluation data was also particularly important in demonstrating that there was unlikely to be harmful impacts of policy implementation.

Complexity of policy processes

It was through the analysis using the two policy theories that the complexity of the decision-making processes could be explored in detail and causal relationships between factors identified. The development of the *LiveLighter* CLD is one of the very few currently available in the area of obesity prevention. Whilst there is an emerging field of research using CLDs to better develop community and policy responses to the problem of obesity (Vandenbroeck, Goosens et al. 2007, Allender, Owen et al. 2015), this appears to be one of the first applications of CLDs to explore the issue of obesity prevention *policy stasis*.

In contrast with the identified existing CLDs studies, there are only two feedback loops present, which may be due to the relatively short time period examined (consisting largely of only one policy cycle). Feedback processes often incorporate time delays (Peters 2014) and therefore CLDs from policy studies may need to be conducted over longer periods of time to further inform how feedback mechanisms influence policy decision-making (Nigenda, González-Robledo et al. 2016). In addition, whilst CLDs are often developed to inform the development of predictive system dynamic models (SDM) (Paina, Bennett et al. 2014, Nigenda, González-Robledo et al. 2016, Hassmiller Lich, Urban et al. 2017), the purpose of this CLD is only to provide a heuristic tool to understand the influences on decision makers. In this study, no attempt has been made to assess the relative strength of policy system connections, which may be a worthy area of future investigation.

The findings from this study are strengthened through a number of methods to enhance the quality of the research processes. For example, the credibility was increased through the use of verbatim quotes and through the researcher's use of persistent observation of the study context. In addition, the dependability and transferability of the study findings are augmented by the strong use of theory throughout the study, the provision of details regarding data-sampling, -collection and –analysis, as well as the detailed description of the case study context. The latter assists naturalistic generalisation (Yin 2014). The study is however, limited with not all of the suggested informants able to be interviewed. This drawback was minimised to a certain degree with decision-makers central to the policy process participating in the study. Furthermore, the review of government policy documents undertaken helped to complete the analysis and to triangulate findings. Finally, the deductive approach which allowed vast amounts of qualitative data to be described, classified, analysed and interpreted

(Patton 2002, Creswell 2007), has been criticised as potentially leading to 'blinkered' analysis (King and Horrocks 2010, p. 168). However, by developing multiple explanations of the *LiveLighter* policy change (by using both the MST and ACF), it is argued that this limitation is minimised (Cairney 2009)

Despite the small number of limitations, the findings presented provide a trustworthy account of obesity prevention policy decision-making that can inform policy advocates seeking to understand how to intervene in order to advance future policy. Recommendations for future policy advocacy derived from the analysis include:

1. Re-frame policy options to align with the prevailing political ideology and broader policy imperatives.
2. Advocate for open and transparent policy development processes in order to increase the possibility for coalition influence. Policy advocates should seek to understand the decision-making mechanisms in place for various policy instruments, and advocate for them to be made more accessible and transparent.
3. Development and translation of evidence:
    a. Recognising that evidence of policy effectiveness is not necessarily essential for policy adoption. In the absence of scientific evidence for the specific policy under consideration, political 'demonstration effects' (i.e. preliminary evidence from other jurisdictions or other areas of public health) may be sufficient.
    b. Use evidence to demonstrate technical feasibility, both within the desired timeframe (e.g. within political cycles) and within absolute resources available.
    c. Build evidence that can demonstrate low risks of negative unintended consequences.

The findings from this investigation of the *LiveLighter* policy processes will be integrated, and compared and contrasted to the findings from other HTV policy initiatives. Together these learnings will be used to develop a framework for action for policy advocates seeking to influence policy in support obesity prevention efforts.

Conclusion

This study investigated the policy process involved in the adoption of the *LiveLighter* social marketing campaign by the Victorian government. The study revealed the complexity of decision-making in relation to obesity prevention policy, including numerous influences on decision-making, such as belief systems of decision makers, advocacy and opposition from different coalitions within the health community and evidence of the likely effectiveness of the initiative, its technical feasibility and the potential for harm. The findings can be used to identify potential leverage points and effective ways to influence obesity prevention policy in the future, such as reframing of policy solutions to match current dominant political ideologies, coalition structuring and mobilisation of supporters, and generation of implementation evidence that reduces the perceived risk of proposed policies. The findings contribute toward the public health evidence base and toward developing a framework for action to guide obesity prevention policy advocacy.

Abbreviations

ACF: Advocacy Coalition Framework; CCV: Cancer Council Victoria; CLD: Causal Loop Diagram; DHHS: Department of Health and Human Services; Healthy Together Victoria; MAP: Ministerial Advisory Panel; MST: Multiple Streams Theory; NGO: Non-Government Organisation; NPAPH: National Partnership Agreement for Preventive Health; PPHB: Prevention and Population Health Branch; VPHWP: Victorian Public Health and Wellbeing Plan; WA: Western Australia

Competing interests

The authors declare that they have no competing interests.

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Additional files

Additional file one: Semi-structured interview schedule

Additional file two: Deductive analysis codebook

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