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Original Contribution

Incorporating Sustainability into Community-Based Healthcare Practice

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Abstract: There is now irrefutable evidence that climate change and increasing environmental degradation negatively affect population health. Healthcare plays an important role in addressing these emerging environmental challenges, considering its core aim is to protect and promote health. Preliminary research in Victoria, Australia, suggests that healthcare practitioners are endeavouring to factor in environmental concerns into their practice. Health promotion, an integral part of the healthcare system, is considered an area of practice that can support action on sustainability. Based on five qualitative case studies and key stakeholder interviews, this article explores key barriers and facilitators to incorporating sustainability into community-based healthcare practice. The findings demonstrate that despite multiple barriers, including funding and lack of policy direction, health promotion principles and practices can enable action on sustainability.

Keywords: Healthcare, health promotion, climate change, sustainability

Introduction

There is strong scientific evidence and an increasing consensus amongst health professionals that human-induced environmental changes represent an unprecedented set of global public health challenges for the 21st century (Intergovernmental Panel on Climate Change 2007; Steffen 2009; World Health Organization [WHO] 2009; McMichael 2009). Human activities such as agriculture, urbanisation and industrialisation have detrimentally affected the natural and evolutionary processes of the planet (Stone 2009). Combined, these pressures on the global environment have led to large-scale ecosystem losses and impairment, including climate change, biodiversity loss, ozone depletion as well as land and freshwater depletion (Corvalan et al. 2005). Paradoxically, these natural processes upon which human health and wellbeing depend—clean air, water and food—have been irreparably damaged (McMichael 1994).

Similar to many other countries, Australia's natural environment is significantly degraded and under threat from climate change. According to the Department of Sustainability, Environment, Water, Population and Communities (2010), Australia has experienced the largest documented decline in biodiversity of any continent. Approximately 45% of open forests have been cleared, and more than 60% coastal wetlands in southern and eastern Australia have been lost (Commonwealth of Australia, 2001 cited in Lindenmayer and Burgman 2005). The threat of climate change is observable in trends that demonstrate significant increases in annual temperatures and precipitation changes between north-west and south-eastern states and in the fact that substantial warming has occurred in all

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three oceans that surround Australia (Commonwealth Scientific and Industrial Research Organisation [CSIRO] and Bureau of Meteorology 2010).

Victoria, a state in the southeast corner of Australia, epitomises national and global environmental challenges. According to the Department of Sustainability and Environment (DSE) (2009, p. 4) 'Victoria has the highest proportion (48 per cent) of bioregions in Australia with poor landscape conditions'. Almost two-thirds of the state has been cleared of native vegetation, and waterways have been significantly altered (DSE 2009). In Victoria's cities and towns, many natural ecosystems vital to the state's future health have been irreparably altered (DSE 2009). Environmental problems will be exacerbated by climate change and it is predicted that 'Victoria will warm at a slightly faster rate than the global average' (Victorian Environmental Assessment Council 2010, p. 26). CSIRO predicts further increases in temperature, decreases in rainfall, severe droughts, less snow cover, increased heatwaves and bushfires (Victorian Government Department of Human Services [DHS] 2007). Arguably, the state is already experiencing an environmental crisis, with climate change predictions coming to fruition in recent, extreme weather events spanning chronic drought, flash flooding and catastrophic fire events. Together, these pressures on the state's resources and broader global climate-related challenges manifest in population health problems such as poor mental health status within farming communities and declining nutritional status due to food insecurity amongst low socio-economic groups (Rowe and Thomas 2008).

Healthcare has the potential to cause harm to the environment as well as promote good health (Coote 2006). The healthcare sector contributes to the environmental crisis as a large emitter of carbon, through building energy usage and staff/patient transport (Liggins 2009). In Victoria, approximately 60% of the state government's energy consumption is linked to hospitals and healthcare facilities (Wagner 2004). Hospitals are producers of large amounts of waste, which are often non-biodegradable and toxic to the environment (Health Care Without Harm 2010). Compounding these problems is an increasing demand on the healthcare system as a result of climate change and systematic exposure to environmental hazards (Hess et al. 2009).

Conversely, the literature emphasises that health professionals and healthcare systems have an important role in preventing environmental degradation as well as in climate change mitigation and adaptation. As early as 1986, the *Ottawa Charter for Health Promotion* mandated that any strategy to promote health should include the protection of the natural and built environment and the conservation of natural resources through a socio-ecological approach to health (WHO 1986). The Ottawa Charter (1986, p. 1) identified '*sustainable resources*' and '*a stable ecosystem*' as prerequisites for health and established that any systematic understanding of health must take into account the health of natural environments. This core commitment for health professionals was reiterated in the Sundsvall statement on Supportive Environments for Health (1991, p. 7): 'people form an integral part of the earth's ecosystem. Their health is fundamentally interlinked with the total environment'.

Health promotion,[1] the focus of these seminal documents and now an integral part of healthcare practice worldwide, is considered an area of practice that can support action on sustainability[2] (Brown et al. 2005; Butler and Friel 2006; Catford 2008; Auld and Hatcher 2010). As a discipline and a set of distinct professional practices, health promotion is well suited to addressing sustainability because it is multidisciplinary in nature, underpinned by similar goals (i.e. inter and intra-generational equity) inherent to the environmental sector, and based on professional competencies that are transferable for action on sustainability (Labonte 1994; Patrick 2010). The goal of health promotion practice is to improve and maintain health and is recognised in many countries as a professional discipline. The competencies inherent to health promotion that are useful for practice at the nexus of health and sustainability include individual behaviour, organisation and social change; partnership development; advocacy for policy and legislative change; and community engagement (Brown et al. 1992; Catford 2008).

In Australia, health promotion is an integral part of healthcare practice, and many health professionals—including medical practitioners, nurses and allied health professionals—have been trained in and are involved in the delivery of health promotion within healthcare settings (Dempsey et al. 2010). In Victoria, the state government's Department of Health funds community and women's health agencies as well as primary care partnerships (PCPs) (which include hospitals, divisions of general practice and

[1]Health promotion is 'the process of enabling people to increase control over, and to improve, their health. (World Health Organization 1986, p. 1).

[2]The terms 'ecological sustainable development', 'environmental sustainability' and 'ecological sustainability' are used interchangeably in the literature. Despite their differences in origin, they all stress the importance of valuing and maintaining the natural environment. Often, the term 'sustainability' is used as an all-encompassing term and will be treated as such in this article.

local government agencies) to undertake planned and integrated health promotion. The health promotion activity of agencies is directed at community need and state-level health promotion priority issues such as food security and mental health (Department of Health 2010). The principles and foundations for practice are based on the *Social Model of Health*, a conceptual framework that recognises the importance of: (a) the broad social, economic and environmental determinants of health; (b) community participation in decision-making and (c) working with sectors outside of health (Victorian Healthcare Association 2009).

Despite these synergies and the Ottawa Charter's powerful call to action over two decades ago, practices that address health and sustainability have been slow to develop (Butler and Friel 2006). This may be in part be explained by the fact, that until more recently, there has not been a body of evidence to demonstrate the types of practice that can have concurrent health and environmental benefits. Evidence that is now emerging highlight multiple co-benefits for the promotion of health and protection of the environment through initiatives centred on active and sustainable transport (Woodcock et al. 2009; Rissel 2009); healthy and sustainable food systems (Larson 2008; Dixon et al. 2009); and mental health promotion and climate change adaptation (Greenhill et al. 2009; Horton et al. 2010). In Victoria preliminary consultations by Olaris (2008) and Rowe and Thomas (2008) suggest that practitioners in Victoria's healthcare settings are beginning to respond to the emerging evidence and community interest by integrating concerns for the environment into practice. These authors suggest that health promotion principles and practices are valuable for work in this area. Though, beyond this, there has been limited research and public documentation on the role of health promotion and on the barriers and facilitators that healthcare practitioners are experiencing in developing sustainable practice. Given these gaps in knowledge, this article will report on the findings of a qualitative study that aimed to explore: (a) the barriers and facilitators to incorporating sustainability into community-based healthcare practice in Victoria and (b) the contribution of health promotion to incorporating sustainability into community-based healthcare practice.

Methods

The data in this article is derived from a qualitative research project that examined five cases in depth. The study was conducted between July and November in 2010 by a team of health promotion and sustainability researchers. The project was conducted with approval from the Human Research Ethics Committee of Deakin University.

In order to address the aims of this particular article, the researchers combined the data from interviews with healthcare practitioners with documentary evidence and supplemented these with key stakeholder interviews. The details of each agency are presented in Table 1. However, a detailed case analysis is not presented here.

The researchers used their professional contacts and publications to purposefully select a sample of five Victorian healthcare agencies that had explicitly identified climate change or sustainability as a program priority. The researchers used maximum variation sampling strategies to identify the agencies that would yield wide variations on themes relevant to the research questions (Patton 2002). The selected agencies represented: diversity in the nature of sustainable practices (by target group, strategy or issue); geographic dispersion of community-based healthcare agencies (rural, regional or urban settings); practitioners working in different types of healthcare settings (community health, women's health or primary care partnerships) and practitioners who were using health promotion methods to develop sustainable practice.

Contact was made with individuals who were working in agencies that met the above criteria to assess their interest in and the agency's suitability for participating in the study. A primary contact in five agencies agreed to participate and facilitate the individual and organisational consent process. The primary contact then identified potential interviewees: practitioners who were involved in the agency's sustainability initiatives. Table 1 lists the key characteristics of the participants who were involved in individual or group interviews.

Four senior public health stakeholders from state-level or academic organisations were also consulted at different time points during the project. The four key stakeholders were selected based on their seniority and expertise in (1) researching or practicing in the area of primary healthcare and sustainability and/or (2) their perceived capacity to identify a broad range of barriers and facilitators of practice in Victorian healthcare settings. Of the six potential participants contacted, four were available to participate and subsequently completed the consent process.

Semi-structured individual interviews were undertaken with practitioners either face-to-face at their workplace ($n = 9$) or by telephone ($n = 1$). The topic guide featured a series of open-ended questions and explored with participants (1) their current practices in the area of

Table 1. An overview of data sources by setting and participant profile.

	Agency 1	Agency 2	Agency 3	Agency 4	Agency 5
Setting	Stand alone, metropolitan community health service	Urban community health service within a hospital network	Urban-regional women's health service	Rural primary care partnership	Regional community health service within a hospital network
No. of individual interviews	2	1	1	1	1
No. of group interviews	1 Paired interview with 2 participants	2 Paired interviews with 2 participants; 1 group interview with 5 participants			
Participants' functional roles within the organisation	Senior management, health promotion and team leadership	Health promotion and population health team leadership, physiotherapy OT and social work	Health promotion coordination	Community development	Health promotion coordination
Documents analysed	Website information about programs/agency, climate change and health funding submissions and research and evaluation documents	Website information about programs/agency, and various health promotion planning and evaluation documents	Website information about programs/agency, climate change government submissions and research reports	Website information about programs/agency, health promotion and climate change planning framework and PCP planning and evaluation documents	Website information about programs. Health promotion/PCP climate change planning documents

sustainability; (2) the barriers and facilitators to this practice and (3) the contribution of health promotion to incorporating sustainability in practice. Interviews lasted between 20 and 90 min and were conducted by the authors.

Additional data were generated from paired and group interviews in health settings 1 and 2. These group interviews were used to generate a range of ideas on the subject and to cross check individual accounts and specific aspects of practice (Hudelson 1996). In agencies 3, 4 and 5, additional data were not collected due to the limited number of appropriate participants and practical limitations. All interviews were audio recorded and then transcribed by a professional transcription service.

Organisational planning and evaluation documents were also collected for each agency. The purpose of collecting these texts was to cross check what the documents revealed about the practice and its influences, with the perceptions of the participants. The documents, identified in Table 1, assisted the researchers to understand the inherent constraints in this study and determine what strategies are deemed useful to this field of practice.

The key stakeholders also underwent semi-structured individual interviews either face-to-face ($n = 2$) or by telephone ($n = 2$). These interviews focused on the stakeholder's research into health and sustainability practice as well as specific questions about themes that were emerging from the literature and healthcare practitioner interviews.

The analysis of interview and documentary evidence was informed by Stakes' (1995) case study system for data analysis and representation, namely description, analysis and assertions. However, for the purpose of this article, data was collated and a thematic content analysis carried out (Miles and Hurberman 1994). This involved a manual process of grouping and then reading through texts, highlighting key words and themes as well as making margin notes (Creswell 1998). The trustworthiness of the analysis was assessed through a process of 'member checking' with healthcare practitioners, consultation with key stakeholders and triangulation of data sources (Creswell 1998). Bronfenbrenner's (1979) ecological systems model guided the final stages of analysis and representation of themes at micro–macrosystem levels, as shown in Table 2.

Results

The results are presented in two parts. In the first section, the broad themes pertaining to barriers and facilitators to incorporating sustainability into community-based healthcare practice are presented in a comparative summary in tabular form. In the second section, quotations from each agency have been used to elaborate on key themes and illustrate how health promotion principles and practices have been used in this emerging area of healthcare work.

The importance placed on particular themes varied between participants and were influenced by a range of individual and contextual factors. For instance, the key stakeholders and management-level staff stressed the importance of macro-exosystem level factors, i.e. policy direction for the sector and adequate funding regimes. Those in direct service delivery positions tended to focus their discussion on micro-mesosystem issues, i.e. program implementation issues such as community and staff attitudes. Between agencies, the key themes were awarded different levels of current importance. For example, despite different geographic locations and organisation structures, cases 1 and 5 participants commented that senior management support had already enabled action on sustainability. Whereas case 2, a community health service operating within a large hospital network, commented that developing champions at a managerial level was an ongoing core strategy.

These themes will now be highlighted using direct quotations from participants in all five agencies. The quotations will also highlight how each agency had used health promotion principles and practices, including behaviour and organisational change, capacity-building approaches partnership development and community engagement to incorporate sustainability into their healthcare practice.

Agency 1, a stand-alone community health agency had implemented multiple interventions including programs that target people living in public housing estates in relation to food security, active transportation and heatwaves. A participant in this agency highlighted the organisation-level barriers and facilitators by stating 'if you didn't have managerial CEO support for this stuff, it wouldn't get off the ground very far or very quickly' and within the agency, 'there's a team leader for health promotion, there's a senior manager so it's quite heavily championed from up above. I think that's sometimes where half the problem sits. Getting things forward organisationally needs managerial and CEO support'.

Agency 2 was a co-located community health service within a large healthcare organisation that provided

services spanning rehabilitation and aged care through to disease prevention and health promotion. This agency was focusing their efforts on organisational change strategies for minimising greenhouse gas emissions and reducing resource consumption. The practitioners in this agency highlighted the issues of group barriers and facilitators

Table 2. Summary of key barriers and facilitators to incorporating sustainability into healthcare practice.

Major theme	Barrier	Facilitator
Individual level	Overwhelmed by scale and complexity of the problems and challenges; sense of powerlessness	Passion and commitment to act; individuals believing climate change presents new opportunities for practice, e.g. mobilisation of vulnerable groups
Individual level: competencies	Uncertainty and complexity of issues; lack of knowledge about key issues and solutions	Transferability of core health promotion competencies; professional training, i.e. undertaking *ResourceSmart Healthcare* training program
Group level: peers	Challenge of facilitating change across multidisciplinary perspectives; Resistance to/lack of understanding of the issues surrounding environment and link to health	Health promotion-funded staff driving the agenda, e.g. facilitating 'green committees'
Organisational level	Lack of champions; gaining managerial and CEO support; existing policy and protocols, e.g. client transport protocol contradicts environmental sustainability goals and/or health of staff/clients; Competing priorities	Buy in from senior management and leadership teams; collective, inclusive decision-making structures
Organisational level: partnerships	Existing tensions in partnerships; ability to build new and critical partnerships; PCP lack of interest in sustainability issues	PCPs supportive of or have existing commitments to environmental and/or climate change priorities; perceived opportunities in the prospect of building new partnerships
Community level	Local community attitudes and knowledge of issues, i.e. people not understanding how issues relate to them and health; community resistance to change	Community needs identified with co-benefits, i.e. climate change and heatwaves, food security and community gardens; ground swell of community interest; community demand for action
Sector level: planning and evaluation tools	Lack of integrated assessment tools; lack of co-benefit program evaluation tools; and knowledge about relevant tools	Program logic model; existing community needs assessment tools, e.g. online tools; adaptable audit tools, e.g. organisational eco-footprint assessment

Table 2. continued

Major theme	Barrier	Facilitator
Sector level: strategies that support practice	Lack of strategies to address complex, interdependent problems; limited evidence base for mitigation and adaptation strategies; lack of knowledge of climate change communication strategies	Behaviour, organisational and social change; value-based decision-making, e.g. precautionary principle; multifaceted, multilevel approaches, i.e. individual through to population level approaches; advocacy and lobbying
Sector/government level: frameworks	Absence of a comprehensive framework to guide action on health and sustainability	Synergies and common frameworks, i.e. local agenda 21, healthy cities, Ottawa Charter for Health Promotion, environments for health; perceived congruence between health and sustainability goals
Sector/government level: leadership	Perceived lack of leadership at the government level	Leadership amongst local community, environmental groups and local government; Health promotion staff leading through a variety of approaches, e.g. bottom up or grass-roots approaches
Sector/government level: funding	Short-term programmatic funding; lack of investment in capital/operations; funding availability and accessibility	Availability of seed funds; Department of Health flexible health promotion funds; access to new funding streams
Sector/government level: policy	Lack of policy direction for health sector; lack of health sector participation in policy formation; lack of application to community health/healthcare	Promising policy developments in the area of food systems, climate change adaptation and active transport
Societal level	Climate change denialism; prevailing unsustainable social norms and values	Evidence of shifting attitudes/values; perceived shifts towards collective action and inter-sectoral approaches

particularly well. One of the perceived barriers was a 'lack of awareness for the staff…I guess that is why it is going slow; there is a concern that staff that are really keen may have left in that time, by the time you get somewhere those people won't be there anymore'. The health promotion team leader's role in facilitating group processes and the use of a capacity-building approach was seen as a facilitator: 'the health promotion team leader chairs the [organisational-wide multidisciplinary] green team—sets the standards that the Green Team works too; we then take back the guidelines from this group, and we discuss them with our own team [discipline or department level] and implement the changes'.

Agency 3 was a women's health service with a focus on climate change research and advocacy. They were actively developing partnerships and implementing strategies to influence state-wide policy in relation to gender-based vulnerability to climate change. The practitioner interviewed from this agency highlighted numerous themes. In relation to the use of health promotion frameworks, the participant commented: 'What enables us to discuss climate change as a health issue is the Social Model of Health'. In response to a question about the health promotion strategies and partnerships that are useful, she commented: 'mostly advocacy, with local government and also with community health, and the PCP'. Further, she identified health promotion principles that she was using to enable change and overcome barriers: 'as a worker working in this area, I am grappling with this issue [of fear and denial climate change], how do we make this a manageable issue?…by bringing people along internally on this issue, getting to feel like they own it, as something they can represent, getting clear and an evidence base how it affects women and women's roles responding to climate change…I feel like the evidence base is really essential to being able to represent women in the best way we can'.

Agency 4's work focused on a PCP climate change and rural adjustment initiative. The PCP had planned and implemented various projects in relation to the issues of food, water, transport, heatwaves and resilience. This case highlighted some of the health promotion practice issues associated with partnership development and funding. 'Other barriers were the linking up with other services. And the government, for example, are funding some amazing programs but they're not necessarily getting to the people who really need them'. In contrast the practitioner noted 'we are linked in with local groups so I guess that's back to that stakeholder, key informants, like the school, the Lions Club, the planned activity group, the elders, the people from the bush, the pub. We're linked into the people in town where other people might link. We have linked [in] with DHS and sustainability experts'.

Agency 5 was a regional health service with one main site with services spanning acute care through to health promotion. An onsite community garden supported a range of programs including initiatives that promoted: local food production and access to fresh food supply; habitat restoration and physical activity amongst the elderly; and mental health and environmental awareness through contact with nature. The interviewee from this agency highlighted issues associated with community engagement within this health promotion and sustainable community gardening initiative. 'We had backlash from people thinking, ''What are you doing with our beautiful health service?'' We had a lot of complaints from the public because it looked ugly at the start. There were certainly sceptics in the audience that did challenge some of that information. And you're talking about drought and it's pouring with rain'.

Conversely, there were viewpoints such as 'the community had been expressing some interest in growing fresh and healthy food. We have older multicultural people that live in the area that do have gardens and they have skills around gardening…it has been successful and it's been planned to consider a lot of people's needs, we've had those people turn around and be really positive, word of mouth is really strong in a small rural community and that helps us…trying to then enable them to take ownership and to make decisions is a big part of it'.

Discussion

This study revealed a range of barriers and facilitators to incorporating sustainability into community-based healthcare practice. A key finding was that health promotion principles and practices were being used by healthcare practitioners in the five agencies to facilitate practice and overcome constraints. This section of the paper will follow Bronfenbrenner's model to explain the key micro-macro level factors and how they interact with each other to either constrain or facilitate the process of incorporating sustainability into practice in this context. The discussion will demonstrate how the findings from this study both support and extend existing knowledge at the nexus between health promotion and sustainability practice.

At an individual and group level, the participants reported personal 'passion', 'motivation' and 'enthusiasm' as important facilitating factors. As change agents, they felt that it was important to demonstrate personal commitment through positive role modelling of the desired behaviours. Ife (2002) (as cited in Brown et al. 2005, p. 258) calls this process 'social animation', and its success depends on reflective practice and a personal awareness of how to use one's personality to the best effect. The approaches and strategies reflected upon by the participants in the five agencies indicated that social animation and related techniques (such as (a) 'visioning' which is a creative and participatory planning process or (b) 'action networking'

which is a flexible and reflexive approach to trans-organisational partnership development) were features of their work (Verrinder 2005). Interestingly, these techniques are also considered to be useful for capacity building for structural change in this arena (Verrinder 2005) and are commonly used in the field of health promotion.

Despite the theme of personal agency, the participants did report experiences of feeling overwhelmed and/or having to deal with professionals or community responses of a similar nature. This theme was consistent with Olaris' (2007) study of community health staff and Fritze et al.'s study (2008) on community responses to climate change, which found that being overwhelmed by the scale and complexity of the problems and a resulting sense of powerlessness is another barrier to developing sustainable practice. At an individual, group and community level, practitioners identified the need to work with feelings of anxiety, hopelessness and frustration in order to overcome resistance to key messages and the paralysis that can arise from working in this area. This resonates with Baum's (2008, p. 307) idea that health practitioners need to overcome the tendency for inertia because 'environmental issues are complex, with the science sometimes disputed and uncertain. When the complexity and uncertainty threatens to overwhelm us it is tempting to carry on with more straightforward practice that focuses on measurable and controllable issues'.

The study participants' own professional competencies, as well as the knowledge and skills gap of the staff in general, were another barrier to incorporating sustainability into practice for the respondents. The findings were consistent with Patrick's (2010) study, which illustrated that action to address climate change amongst socially vulnerable groups and within the health sector was inhibited by the practitioner's lack of knowledge about key issues and potential solutions, including environmental justice, ecological footprint analysis and resilience thinking (Patrick 2010).

However, an important theme derived from the five cases and the research conducted by Patrick (2010) was that the core competencies for health promotion are highly transferable to action on sustainability and climate change. The basis of this work is an understanding of how to implement the processes associated with community needs assessment; partnership development; as well as foundation practices in enabling, mediation and advocacy. Where practitioner confidence, knowledge and skills barriers were identified, they were generally overcome through professional development, multidisciplinary team work, forming new partnerships and engaging 'sustainability experts' in program design. This approach to competency development is consistent with Moloughney's (2004) model, which suggests that core health promotion competencies, such as program planning and evaluation, can be augmented by functional role, issue, setting or population within which the practitioner operates.

In this study, the participants noted executive and senior management support as an important precondition for prioritising sustainability within the organisation. The practitioners saw their role as managing up or stimulating interest and support for organisation change at a senior level. These approaches resonate with organisational change theory, such as that of Goodman et al. (2002), which are frequently used in health promotion practice. The participants appeared to be applying an understanding of the nature of change (at the individual, organisational, community or social level) for this emerging aspect of practice. The practitioners also reported the use of behaviour-change strategies and systems thinking, indicating that health promotion principles and practices were assisting them to overcome barriers and enact higher level structural change.

The study participants also reported that they were able to use a variety of existing policy directives and frameworks to initiate action on health and sustainability. The use of existing frameworks and models including the *Ottawa Charter for Health Promotion* (WHO 1986), *Climate Change Adaptation: a Framework for Action* (Rowe and Thomas 2008) and the *Social Model of Health* (DHS 2003) were all identified as vehicles for demonstrating the case for health and sustainability action. Perhaps, as suggested by Labonte (1994), the strength of health promotion in this arena is that it is inherently multidisciplinary in nature and incorporates theory and practice from a diverse range of fields. If shared language and collective approaches born of new partnerships and collaboration across sectors is deemed important, the vague disciplinary boundaries and cross-sectoral qualities of health promotion practice may have enabled this work (Simpson 1994).

Conversely, the data also revealed that current frameworks and practices (or business as usual approaches) are not always sufficient to address complex health and sustainability challenges. Commentators in the field of sustainability action and education, such as Brown et al. (2005), are calling for major practice and paradigm shifts, including multidisciplinary analysis and synthesis of issues,

to address the interrelated and complex challenges of environmental degradation and their impact on human health. Hanlon and Carlisle (2008, p. 359) suggest 'a new ideology; one that emphasises the rights of global citizens while seeking a sustainable solution to current and future ecological challenges…a reprioritisation of society towards values which promote well-being, health and equity, while reducing inequalities and over-consumption'. They infer the need for leadership, systems thinking and social change, which are the essential features of health promotion practice (Keleher 2007).

The theme of leadership was consistently identified in relation to the role of government, senior management and health promotion practitioners. Two recent studies by Olaris' (2007) and Patrick (2010) found that lack of leadership was a key barrier to action. According to these studies, leadership at the government level is a significant barrier to mobilising action in healthcare agencies. Olaris (2007) noted that despite the strong policy framework of the then Victorian governments *Our Environment: Our Future* (DSE 2005), there was a lack of application to Community Health. This further exacerbates internal leadership problems as a lack of mandated action and policy directive, meaning that high-level management support is difficult to achieve.

Funding availability and structures were identified as key barriers to action. This was consistent with the findings of Olaris' (2007) study of the capacity of Victoria's metropolitan community health services to respond to climate change. Olaris (2007) found that funding was the 'biggest barrier for sector' and a lack of specific funding for capital improvements and purchases also inhibited health services in their efforts to reduce organisational emissions. The study discussed in the current paper also found that existing short-term and programmatic funding structures are problematic for addressing complex health and sustainability challenges. This resonates with the views of the Public Health Association Australia (2008) that Australia's primary healthcare and health promotion funding structures limit the effectiveness of public health efforts and Keleher (2007, p. 30) who believes that 'narrowly focused funding programs for disease prevention are still more common than funding for social-ecological health promotion work'. These funding limitations combined with the current focus on disease and government-regulated health promotion priorities, which do not include environment determinants and climate change, exacerbate barriers to incorporating sustainability into healthcare practice.

Conversely, practitioners in this study were able to resolve program-level funding barriers by using health promotion competencies such as leveraging new funding streams. Funding issues were in part resolved through seeking out and securing funding from less traditional sources, including government departments responsible for sustainability and environment; linking initiatives with local government efforts and accessing new funding streams through the creation of new partnerships. They appeared to be using core competencies associated with health promotion, including 'write submissions, grants or applications for funding' (Australian Health Promotion Association [AHPA], 2010, p. 5, competency 3.4) and 'establish appropriate partnerships with relevant organisations and agencies and facilitate collaborative action' (AHPA 2010, p. 5 competency 2.3). The use of these competencies may in part explain how the participants where readily able to identify and mobilise new resources. Seed funding for demonstration projects were seen as one way to develop an evidence base and a case for embedding this work in the core funding structures. The use of the flexible health promotion funds sourced from the Victorian government's Department of Health's scheme was another means of resourcing sustainability initiatives. These local-level responses to structural and resource constraints are indicative of several core health promotion practices, including capacity building, advocacy and social change.

Like the Olaris (2007) study, a lack of sustainability policy relevant to the healthcare sector was identified. Simpson (1994) and Verrinder (2007) believe the root of funding and policy problems lies in the fact that health and environment have traditionally been dealt with as separate entities. Traditional institutional arrangements both in government and academia have uncoupled health and environmental issues, which in turn has led to the development of separate professions, legislation, policy and government organisations (Simpson 1994). If integration of health and environmental concerns at the political, administrative and scientific levels (Brown 1994) are essential to the solution, then what is required include common frameworks, policy and practice.

One of the strengths of this study was the use of data from varied healthcare contexts, supplemented by key stakeholder interviews. Together, the data elicited information about a broad range of barriers and facilitators to incorporating sustainability into community-based healthcare practice. However, the use of only one case study per inclusion criterion and the variable duration of and

number of interviews (most notable in agencies 3, 4 and 5) might have compromised the ability to identify all factors influencing practice. The findings are therefore limited to a broad overview of factors that constrain or facilitate practice and are not directly transferable to other settings.

Conclusion

The study highlighted that healthcare practitioners can and are playing an active role in addressing environmental challenges in Victoria's community-based healthcare settings. Despite multiple barriers to action, including funding and lack of policy direction, health promotion principles and practices are enabling change through the use of core health promotion competencies, frameworks and strategies. It is noteworthy that the practitioners in these agencies were demonstrating new ways of synergistic practice in accordance with the following mandate: 'The protection of the natural and built environments and the conservation of natural resources must be addressed in any health promotion strategy' (WHO 1986).

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