
Contextualising education for natural and social sustainability for Australian healthcare degrees

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Abstract

Background: Despite the known impacts of the natural and social environments on health, Australian undergraduate healthcare degrees are not explicitly designed to prepare graduates to respond to natural and social sustainability issues within their professional lives. Inclusion of education for sustainability (EFS) curriculum would address this situation; however, research regarding what EFS content healthcare professionals and educators view as necessary is lacking.

Aim: To identify curriculum content that healthcare professionals and educators think is necessary to address environmental sustainability issues in the Australian healthcare context.

Method: Descriptive qualitative analysis of interviews with 64 healthcare professionals and educators.

Findings: There were three main streams of EFS content that Australian healthcare professionals and educators considered desirable: knowledge, skills and professional modelling. The required knowledge described includes an understanding of environmental impacts on health and healthcare, and healthcare impacts on the environment. Proposed key skill sets are analytical and critical thinking, workplace leadership, community engagement and advocacy skills. Appropriate modelling of professionalism to support the social and natural environments was considered vital, including consideration of social justice, resource use and ethical management.

Discussion: Through the lens of their own professional experiences, interviewees argued that this combination of EFS content would contribute to the development of healthcare graduates with a broad concept of their professional responsibilities and the skills, resilience and knowledge to be able to respond to sustainability issues within their professional contexts. This fundamental data will help contextualise EFS specifically for the Australian healthcare sector.

Keywords: environmental health, healthcare ethics, healthcare professional education, holistic health, nursing education, social justice.

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Introduction

Education for sustainability (EFS) aims to prepare graduates to respond to natural and social sustainability issues within their personal and professional lives (Sherren, 2006). Natural sustainability issues are those that impact upon the natural environment, such as air, soil and water pollution, habitat destruction, a loss of biodiversity and the removal and use of natural resources (Brown et al., 2005). Social sustainability issues involve social justice, equity within and across generations, ethical distribution of resources, and maintenance of unique cultures and societal structures (Brown, Ritchie, Grootjans, & Rohan, 2005). The terms 'environment' and 'environmental sustainability' will be used to refer to both the natural and social environments throughout the remainder of this paper unless otherwise specified.

The environment has a significant impact on health (McMichael, Friel, Nyong, & Corvalan, 2008; Siegrist & Marmot, 2006). The health impacts of physical and biological environmental factors, including diet, exposure to toxins, fine particulate matter, industrial chemicals, infectious agents, radiation and noise are well known (Marshall, Wier, Abelsohn, & Sanborn, 2002). Extreme weather conditions increase the risk of climate-sensitive health issues, such as heat stroke, dehydration and hypothermia (Ebi, 2011). Natural disasters can cause physical and psychological trauma, and destroy infrastructure required to support people with ongoing health conditions (Ebi, 2011). Epidemiological and public health studies also highlight the significance of sociocultural backgrounds

to health (Siegrist & Marmot, 2006). Within and across countries, there are health inequities that clearly correlate with socioeconomic status (Commission on Social Determinants of Health, 2008). This socioeconomic gradient of health is due to both an increased exposure to health-damaging experiences and a decreased exposure to health-promoting experiences the lower the socioeconomic status (Commission on Social Determinants of Health, 2008). At the physiological level, both the natural and social environments have an impact on health via altering the activity of key physiological processes such as the activity of the nervous and endocrine systems, and gene expression (Birnbaum & Jung, 2011; Murgatroyd & Spengler, 2011). Sociocultural and geographical factors also impact on access to healthcare and the control of healthcare (Commission on Social Determinants of Health, 2008). Given the environmental impacts on health and healthcare, natural and social sustainability issues are particularly relevant to healthcare practice.

Healthcare practice has a significant impact on the environment (Pencheon, Rissel, Hadfield, & Madden, 2010; Podein & Hernke, 2010). For example, the ecological footprint of Victoria's public healthcare sector is estimated to be 2.8% of the total footprint of the state (Victorian Department of Health, 2010), while alienation of minority and indigenous groups remains a pertinent issue in Australian healthcare (Durey et al., 2012). To effectively address negative impacts, change is required across the sector. However, literature indicates that there is less core EFS content in the health sciences compared to many

other fields of tertiary study in Australia (Sherren, 2006). The literature available to describe EFS within healthcare degrees largely focuses on public health or specialisations of environmental health (Fleming, Tenkate, & Gould, 2009; Sweeney & de Peyster, 2005). Less frequently, EFS is incorporated into other undergraduate healthcare degrees, such as nursing and medicine (Johnston, Rogers, Cross, & Sochan, 2005; Wilcox & Kasuya, 2004). These examples encourage global perspectives, future thinking and a broad concept of health that considers health within its environmental context (Johnston et al., 2005; Wilcox & Kasuya 2004). Similar to EFS in other disciplines, the intrinsic relationship between the social and natural environments is a key concept (Tilbury & Wortman, 2004). This literature does not focus upon what healthcare professionals themselves think of EFS and how it should be specifically contextualised for the healthcare sector.

Using the experiences of healthcare professionals to contextualise EFS is important, as the goal is to enhance the capacity of graduates to support the environment within their professional contexts. As with employees in other sectors, healthcare professionals are likely to have authentic and pertinent perspectives of their professional contexts and the challenges involved (Busck, 2006). Studies have canvassed healthcare professionals regarding strategies to alter practice for other purposes (Barker, Bosco, & Oandasan, 2005). Canvassing the opinions and current practices of healthcare educators is also important, as it highlights what EFS is already covered and what areas are lacking (Albrecht,

Higginbotham, Cashman, & Flint, 2004; Howard, 2004).

To address this, we interviewed healthcare professionals and educators in Australia. Our primary focus was Australian undergraduate healthcare degrees, but much of the discussion is relevant to postgraduate healthcare courses and to professional development in general.

This paper focuses on the EFS content that interviewees argued needs to be covered to produce graduates with the skills, knowledge and motivation to be able to support the environment within the healthcare context. These opinions are informed by the professional experience of the interviewees and largely focused on the major barriers they perceive to changing healthcare practice to more effectively support the environment. This data will inform EFS design to meet the specific needs and unique challenges of supporting sustainability as healthcare professionals.

Methods

A literature review was conducted to assess EFS content within tertiary education. This review informed the development of interview schedules for semi-structured interviews of both healthcare professionals and educators to investigate possible EFS content. Institutional ethics approval was obtained for data collection. Based on the literature review, three main areas of EFS content were investigated: knowledge and understanding; practical skills; and values and attitudes (Sibbel, 2009).

Descriptive interview transcript analysis was undertaken throughout and beyond

the interview period to explore and describe participant perspectives (Patton, 2002). An iterative process was applied, such that the analysis of interview transcripts altered subsequent interviews to continually increase the depth of discussion on pertinent issues. Initial questions asked included:

Are there areas of knowledge, skills or values that you think should be ideally included in undergraduate degrees to address sustainability issues?

Which graduate attributes do you see as very important for addressing sustainability issues?

Data driven transcript analysis involved the coding and categorisation of data resulting in the development of themes and sub-themes (Patton, 2002). Transcript analysis continued until the saturation of key themes in EFS content had been reached. The themes and subthemes were compared with those in EFS literature and considered in the recent historical context of healthcare education. Although this analysis was driven by the data, ultimately it resulted in three streams of EFS content, similar to those described in the literature (Sibbel, 2009).

Purposive sampling was used for the selection of 64 interviewees. This ensured that participants represented all states and territories of Australia (23% VIC, 18% NSW, 12% QLD, 10% ACT, 10% NT, 10% WA, 8% TAS and 8% SA), urban, regional and rural areas, both genders, the private and public sectors, and differing academic and professional levels. Participants included healthcare practitioners (45%), academics or professionals involved in professional development (42%) and

professionals in managerial positions or representatives of professional associations or accrediting bodies (13%). Interviewees were classified as professionally active at the local level (52%), the state level (30%) and the national level (19%).

As disciplinary silos and poor interdisciplinary communication are often described as barriers to altering professional practice to support environmental sustainability (Satterfield et al., 2009), a wide breadth of healthcare professionals and educators were canvassed. This included professionals with a personal or professional interest in environmental sustainability issues. For example, some participants were involved in workplace sustainability projects, environmental lobbying and/or were members of community, professional or union environmental groups. Excluding multidisciplinary participants, the proportion of interviewees from various disciplines were 24% nursing and midwifery, 12% public health, 10% each for medicine, environmental health and dietetics, 7% community and rural health, 5% each for physiotherapy, podiatry, occupational therapy and optometry and 2% each for speech pathology, sociology and psychology.

Findings

Overview

Interviewees acknowledged the importance of the environment to health and healthcare practice. Many interviewees stressed that healthcare graduates need to consider healthcare within the environmental context and

supported the notion of implementing EFS within healthcare degrees.

“...it’s placing the patient or the client or the family or the community within their environment, in the broadest terms, so it’s social, political, cultural, physical and technological. So that those people can grow, survive and hopefully achieve optimal health, whatever that may be within their social or cultural context.” (Nurse)

Interviewees generally agreed that EFS should be explicit, generic, broad, multidisciplinary and non-prescriptive. It should include scientific, social, political and economic content, but in a way that is relevant/contextualised to healthcare.

“I’m very much, you know, of the belief that if you give people an understanding of the bigger picture, then they can make more informed decisions themselves. It’s not about, you know, a kind of proscriptive approach but it’s about laying out the theory and the practice and the complexity of all the issues at play.” (Dietician)

Despite the diversity of interviewees (from different locations, disciplines and professional contexts), the EFS content discussed was surprisingly similar. There were three main streams of EFS content that interviewees described as desirable: knowledge, skills and professional modelling (Figure 1).

Knowledge content focussed upon environmental impacts on health and healthcare, healthcare impacts on the environment and the relationship between the natural and social environments. This broad knowledge base transcends traditional disciplinary

bounds and would help to develop a shared language to address sustainability issues within and beyond the healthcare sector. This understanding must develop on multiple levels such that both local and global issues are considered.

Skill sets commonly recommended were analytical and critical thinking skills, workplace leadership and community engagement skills, and advocacy and political lobbying skills. These generic skills need to be applied in the context of supporting environmental sustainability as described below.

Modelling of professional practice involved the incorporation of natural and social sustainability principles into ethical practice and the development of broad perspectives of professional identity and practice.

Interviewees argued that the combination of these three streams of EFS content would contribute to the development of graduates with a broader concept of their professional responsibilities, with skills and knowledge to be able to respond to sustainability issues as healthcare professionals (Figure 1).

Understanding environmental impacts on health

To appropriately respond to sustainability issues, interviewees reported that healthcare professionals must develop an understanding of the environmental impacts upon health and healthcare. When focusing upon the relationship between health and the environment, the following areas of knowledge were often discussed: key social and natural environmental determinants of health, the relationship

between the social and natural environments, natural sustainability issues and how they impact on health and healthcare, and social sustainability issues and how they impact on health and healthcare. To understand the impacts of the social environment upon health, interviewees argued that you need to consider politics, legislation and economics, and how they intersect. This includes how these social factors impact upon the healthcare sector itself.

“In that respect, I teach my students to take a more holistic view of things that incorporates political and social awareness which, in turn, invites them to consider issues of environmental sustainability and the impact that that can have on individual health, but go beyond individual health to community and world health.” (Academic – medical, nursing & paramedic)

Narrow professional identities were considered a barrier to student engagement with EFS. A focus on health and healthcare as described would enhance student engagement by highlighting the relevance of EFS to healthcare practice.

Most interviewees argued that exploring the relationship between health and the environment would also help students to develop a concept of holistic healthcare, with a more preventative focus and less focus on individual choice.

Understanding healthcare impacts on the environment

Participants suggested that developing an understanding of how healthcare can impact on the environment is necessary so that healthcare professionals and the sector as a whole will be prepared to

consider and take responsibility for their environmental impacts and implement change accordingly.

“...I think undergraduate students need to be made aware of the impact that they have in terms of environmental sustainability... about how they, in their day to day working lives, can contribute in a positive way to environmental sustainability...” (Nurse)

Discussions of healthcare sector impacts on the natural environment largely focussed on resource use and disposal. To make environmentally friendly choices, healthcare professionals may also require an understanding of how resources are produced and distributed. For some professions, such as optometry and podiatry, this was stressed. Such detailed content must be tailored to specific professions.

Much of the discussion about the impact of healthcare on the social environment focussed on distributive justice and how to ethically allocate healthcare resources. This included discussions of the ethics of treating some individuals at the expense of others to prolong life and linking these issues back to health economics and patient autonomy.

“...things like equity and ethical approach to individuals but also considering the ethics of providing services to one population at the expense of the other, you know the inverse care law, all those sorts of issues are very important...” (Public health physician)

It was often argued that studying cultural diversity, particularly in relation to cultural responses to healthcare, is important to allow the development

of culturally sensitive and ethically sound approaches to individual and community healthcare.

Raising awareness of sustainability issues within healthcare contexts in this way may help to broaden graduates' perceptions of their professional responsibilities. Coupled with modelling of professional practice that supports environmental sustainability, interviewees suggested this could lead to generational change.

Development of this knowledge will also allow graduates to discuss the environmental impact of healthcare with their patients/clients. This would support patients/clients as environmentally conscious consumers.

Analytical skills and critical reflection

Interviewees described how analytical skills are required so that graduates can continually collect and evaluate new information relevant to sustainability issues, continually evaluate practice and consider sustainability issues as they arise within the relevant environmental context.

“...I guess analytical skills and being able to think outside the box and be given means of being able to find out new ways that there could be impacts on the environment that they can find out themselves once they become a health practitioner. So it's not like they get provided with a set of knowledge and that's all they leave with, regarding environment, but they have a mind set to be able to move on and learn about new ways as well.” (Optometrist)

The analytical skills commonly discussed included critical thinking, information

collection and analysis, future thinking and integrated or systems thinking. Developing these skills would allow graduates to consider both the longterm and immediate consequences of their actions on multiple levels in an integrated way.

Additionally, critical reflection is required for graduates to effectively incorporate sustainability principles into their professional practice. In particular, it was recommended that graduates be able to reflect on how they themselves are affecting and responding to their environment and why, and for them to become aware of motivations that are driving their own decision-making.

Workplace leadership skills

Interviewees suggested that developing leadership and teamwork skills, and an understanding of the workplace, would assist graduates to act as change agents to implement new practice in the workplace to better support natural and social sustainability. It is likely in each workplace that there will be a broad range of responses to implementing this change. Interviewees argued that graduates require flexible leadership and teamwork skills, based on a foundation of good communication skills, to deal with the variety of responses. This will include empowering those who wish to engage with sustainability issues as well as being able to negotiate with those who are more resistant.

“So that's a less tangible but important skill set of negotiation of engagement with people who will challenge your endeavours to create change.”
(Academic – medical & nursing)

Interviewees report that graduates will face cross-disciplinary challenges in this workplace context. The development of multidisciplinary knowledge and shared understandings across disciplines was considered key to EFS.

Interviewees discussed many other workplace barriers that graduates face, and suggested that graduates will need to be adaptable and resilient and have realistic expectations of the workplace to effectively act as change agents. EFS content should therefore include discussions of coping strategies and workplace cultures. To remain consistent with fundamental social sustainability principles, the implementation of change needs to be done in a way that supports social justice and respect for others.

“I think we can teach people how to be peaceful warriors to tell you the truth... how to be quite revolutionary where you can question and gently suggest without telling people what to do...”
(Academic – nursing)

In particular, an understanding of the Australian healthcare sector currently being a reactive environment was considered key, as this was seen as one of the most significant and prevalent barriers across the sector.

Despite the challenges graduates will face, raising the consciousness of sustainability issues and the modelling of professional practice to support the environment was considered likely to lead to generational change.

Community engagement, political activism and advocacy skills

Many interviewees described the importance of healthcare professionals taking on community leadership roles

to support the environment. Graduates, therefore, require skills to engage communities in sustainability and healthcare issues.

“I think the idea of community involvement in health services is a skill. How to engage communities in developing their local health services...”
(Academic – rural health)

Advocacy on behalf of patients/clients, communities and/or healthcare professions was also considered an important role that graduates can play. This advocacy often extended to political lobbying and activism, as interviewees argued that politics has such a major impact on people’s health, sustainability issues and healthcare. To do this effectively, graduates need to develop lobbying and advocacy skills, and an understanding of politics. The risks of political activism should also be explored, and it should be noted that not all healthcare professionals agree with this extended role for their discipline.

“So in training their leadership, we think it is important that they are able to be advocates and to be able to represent themselves, their profession, the community and also patients and other people so that they can live and have a high quality of life and participate in society in a positive way.”
(Academic – nursing & healthcare)

Once again, communication skills are important, but interviewees stressed that these need to be contextualised to communication specifically for lobbying, such as dealing with the mass media, writing submissions to senate enquiries, government reports and correspondence to politicians. The emphasis on particular skills developed for this role

will vary for different disciplines, with some disciplines choosing to target particularly relevant industries or issues for their profession. For example, dietitians may focus on interactions with the food and entertainment industries.

Professional modelling

Interviewees argued that supporting social and natural sustainability must become a core part of ethical practice and healthcare professionalism. Although professional ethics are value-laden, most educators and healthcare practitioners agreed that you cannot ‘teach’ values. Rather, modelling responsible professional practice and highlighting the implications of poor professional practice were considered key.

“...you’ve got to tread a fine line between preaching and teaching... I don’t know that you can teach it. I think you can model it, and I think you can put in practices that enable them to understand... what is best practice, and you can also put in place, um, a very clear understanding of what happens when you don’t model that behaviour, and what are the implications of poor practice.”
(Physiotherapist, accreditation)

Fundamental principles of sustainability such as intra- and inter-generational equity, respecting the natural environment, respecting cultures and local and global accountability (Brown et al., 2005) could all be easily incorporated into healthcare ethics and concepts of professionalism.

“Values would be obviously a respect for the environment, a respect for resources, but also a respect for

society as a whole and a respect for individuals and probably an awareness about how future constraints are actually going to affect people on an individual basis.” (Nurse)

In addition to modelling the incorporation of sustainability principles into healthcare practice, interviewees argued that professional modelling of political activism, community engagement and advocacy would be beneficial. By healthcare professionals highlighting these activities, students are encouraged to see this as part of their professional identity.

“... This is the range of stuff that people are out there, psychologists are out there doing this sort of work and open up their minds. At the end of the day, you can’t—what they do with that is up to them. I think it’s giving them the knowledge if you like...” (Psychologist)

Discussion

The views of Australian healthcare professionals and educators on incorporating EFS into undergraduate healthcare degrees were investigated through qualitative analysis of interview transcripts. The incorporation of EFS content to support both the natural and social environments was considered valuable. The EFS content recommended by these healthcare practitioners and educators is similar to that previously proposed for other disciplines. For example, in line with EFS literature, critical thinking, interdisciplinary knowledge, future thinking and an understanding of the interactions between the social and natural environments were all considered important (Brown et al., 2005;

Donohoe, 2008; Kelly 2010; Sherren, 2006; Tilbury & Wortman, 2004). The suggested content is also in alignment with socio-ecological models of health, which have previously underpinned eco-health and some environmental health curricula (Albrecht et al., 2004; Howard, 2004; Sweeney & de Peyster, 2005; Wilcox & Kasuya, 2004). Interviewee discussions regarding the inclusion of fundamental sustainability principles within core ethical professional practice described the consideration of both population health and the natural environment as originally proposed in the field of bioethics (Dwyer, 2009).

Contextualising EFS specifically for particular healthcare disciplines was considered key. This would both increase the likelihood of the application of skills and knowledge in the healthcare context, and address preconceptions of professional identities that were seen as a major barrier to student engagement. This is supported by EFS literature reporting that deep learning may be inhibited if students have a strong disciplinary focus (Warburton, 2003). Interviewees argued that incorporating sustainability principles into ethical professionalism and the modelling of professional practice was more appropriate than incorporating EFS 'values' into curricula as suggested in the literature (Sherren, 2006).

Although interviewees indicated that EFS is not currently a major focus of healthcare curricula in Australian undergraduate degrees, these discussions indicated that some EFS content is already included, particularly material relevant to social sustainability. Indeed, social justice and equity are already strong tenets of healthcare

professionalism in Australia and are incorporated into professional guidelines and standards, such as the Australian Physiotherapy Association competencies (ACOPRA, 2002). This material is considered content from other fields such as ethical practice and trans-disciplinary education. Thus, EFS marries well with content already present within healthcare degrees. This includes generic skill sets that are incorporated into curriculum for other reasons, such as communication and analytical skills. These generic skills need to be contextualised for EFS. For example, communication skills need to include a focus on communication specifically for environmental lobbying.

Many interviewees argued that by empowering graduates and raising an awareness of sustainability issues, generational change within the healthcare sector to support the environment may be possible (Figure 1). Interviewees suggest that graduates will need to be resilient and adaptable, with coping strategies to deal with frustration and realistic expectations of the workplace. This is supported by literature describing the challenges involved in implementing change to support environmental stewardship (Jahiel & Harper, 2004), and literature on acting as agents of change in general (Fullan, Cuttress, & Kilcher, 2009).

Despite current pressures within the healthcare sector, most interviewees felt that healthcare professionals should play an advocacy role for environmental sustainability in the broader context of the communities they serve. It has been argued elsewhere that healthcare professionals are privileged, educated

and respected members of society, who have a moral imperative to be advocates for the health of the communities and environments they work in (Donohoe, 2008; Gill & Stott, 2009). This can involve healthcare professionals acting as change agents within and beyond the healthcare sector (Pencheon et al., 2010; Podein & Hernke, 2010). To allow this, both interviewees and the literature suggest that EFS needs to include a focus on advocacy skills and an understanding of politics and economics (Sherren, 2006; Sibel, 2009).

In addition to supporting environmental sustainability to benefit both local and global communities, incorporating EFS content was suggested to have other benefits within the healthcare sector. For example, this curriculum is likely to enhance interdisciplinary knowledge, lead to more holistic contextualised healthcare and increase the focus on preventative healthcare, each of which are argued to be key foci of healthcare education (Alexander, Ramsay, & Thomson, 2004; Carmona, 2004; Hegarty, Walsh, Condon, & Sweeney, 2009; McCloskey et

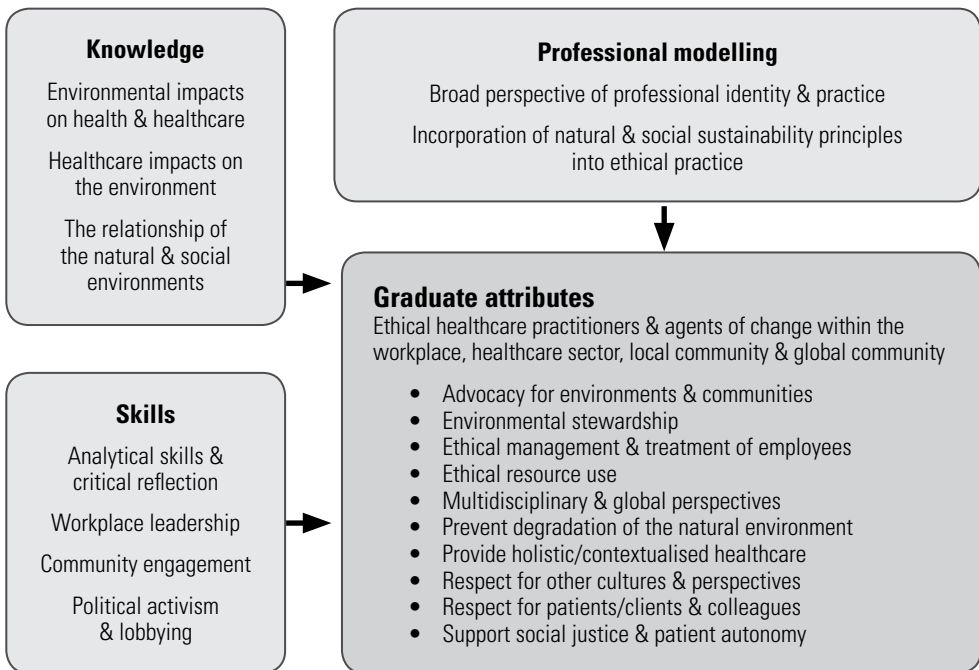


Figure 1: Desirable EFS content and graduate attributes

This figure displays the key areas of EFS content and graduate attributes that interviewees argued will help to address natural and social sustainability issues within the Australian healthcare sector. Three main streams of EFS content are represented: knowledge, skills and professional modelling. Collectively, EFS will provide students with the opportunity to develop the key graduate attributes listed. Ultimately, the goal is to produce ethical healthcare practitioners that incorporate fundamental sustainability principles into their practice and can act as agents of change within and beyond the healthcare sector to support the social and natural environment.

al., 2011). Given these additional benefits and the clear link between the environment and health (McMichael et al., 2008; Siegrist & Marmot, 2006), incorporation of EFS content into healthcare degrees is likely to be well-supported by the sector as a whole.

Conclusion

To create EFS specifically for healthcare degrees, interviewees recommended a broad and multidisciplinary, but contextualised, curriculum that is relevant to healthcare professionals. It should include EFS of both the natural and social environments. Key knowledge includes environmental impacts on health and healthcare, and healthcare's impact on the environment. Skill sets should include analytical skills (such as critical reflection and integrated thinking), workplace leadership, community engagement and lobbying skills. Another major focus is ethical and professional practice, where supporting environmental sustainability is modelled as part of professionalism and a core healthcare responsibility. The aim of EFS is to produce resilient and adaptable healthcare professionals, who have the capacity to support environmental sustainability within their workplace and within the broader context of the communities they serve.

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